



'02~'03

# SEMICONDUCTOR PRODUCT GUIDE

Transistors

Diodes

Thyristors

SAW Device

Dielectric Device

Integrated Circuit

# KEC

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


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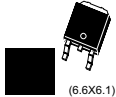







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PNP Transistors( V<sub>CEO</sub> : -12V ~ -65V )

V <sub>CEO</sub>	I <sub>C</sub>	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	SOT-89	
		(Unit: mm)												
														
		■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.93X1.3)	■ (4.7X2.5)	
-12V	-500mA	KTA2012V	KTA2012E		KTA702E									
	-50mA													
-20V	-100mA											BCW29	BCW30	
	-500mA													
	-1A								KTA1531T	KTX311T				
	-1.5A								KTA1532T		KTX511T			
	-2A													
	-3A								KTA1535T		KTX512T		KTA1001	
	-5A								KTA1536T					
	-10A													
-25V	-100mA													
	-800mA													
	-1A													
	-1.5A													
-30V	-100mA					BC858W						BC858	BC859	
	-500mA					KTA2015				KTA511T	KTA711T	KTA1505S	MMBTA63	
	-800mA											KTA1298	KTA1664	
	-1.5A								KTA1541T				KTA1663	
	-2A								KTA1544T					
	-3A								KTA1542T					
	-5A								*KTA1543T					
-40V	-200mA					2N3906U						KN3905S	KN3906S	
	-600mA					KTN2907U						KN2907S	KN4402S	
-45V	-100mA					BC857W						BCW69	BCW70	
	-800mA											BC857	BC860	
-50V	-150mA	KTA2014V	KTA2014E	KTX301E	KTA701E	KTA2014	KTX301U	KTX102U				KTA1504S		
	-200mA			KTA501E	KTA711E		KTA501U	KTA701U						
	-500mA				KTA712E			KTA711U						
	-1A							KTA712U						
	-2A								KTB1234T					
	-3A								KTA1551T				KTA1666	
	-5A								KTA1552T				KTB1124	
-60V	-100mA											BCW89		
	-500mA											MMBTA55		
	-600mA						KTN2907AU					KN2907AS	KTN2907AS	
	-1A												KTA1668	
	-3A			Note) * : Under development										
	-5A													
	-8A													
-65V	-100mA					BC856W						BC856		

PNP Transistors( V<sub>CEO</sub> : -12V ~ -65V )

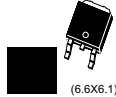





V <sub>CEO</sub>	I <sub>C</sub>	 DPAK (6.6x6.1)	 TO-92M	 TO-92	 TO-92L	 IPAK	 TO-126	 TO-220IS	 TO-3P(H)IS	 TO-3P(N)
-12V	-500mA									
-20V	-50mA			BC309						
	-100mA									
	-500mA			MPSA62						
	-1A									
	-1.5A									
	-2A			KTA1296						
	-3A									
	-5A	KTA1242D		KTA1243	KTA1241	KTA1242L	KTA1709			
-10A	KTA1834D				KTA1834L					
-25V	-100mA			BC308						
	-800mA			BC328						
	-1A			KTBS98						
	-1.5A			MPS8550 KTA1283						
-30V	-100mA			BC558 BC559						
	-500mA		KTA1021	KTA1270 KTC9012 MPSA63 MPSA64						
	-800mA		KTA1272	KTA1271 KTC8550						
	-1.5A									
	-2A			KTA1282	KTA1273					
	-3A			KTBI772			KTA1705 KTBI772	KTA1658		
-5A										
-40V	-200mA			KN3905 KN3906 2N3906 2N3906C						
	-600mA			KN2907 KN4402 KN4403 KTN2907						
-45V	-100mA			BC307 BC557 BC560						
	-800mA			BC327						
-50V	-150mA		KTA1267 KTA1267L	KTA733 KTA733B KTA1266 KTA1266L KTC9015						
	-200mA									
	-500mA			KTA200						
	-1A				KTBI764					
	-2A	KTA1718D			KTA1281	KTA1718L	KTA1715			
	-3A				KTBI985					
-5A										
-60V	-100mA									
	-500mA			BC638 MPSA55 MPSA77						
	-600mA			KN2907A KTN2907A						
	-1A			MPS751 KTA708						
	-3A	KTA1040D				KTA1040L		KTA1046 KTBI366 KTBI424		
	-5A	KTA1385D				KTA1385L	KTBI151			
	-8A	*KTA1204D				*KTA1240L				
-65V	-100mA			BC556						

PNP Transistors ( V<sub>CEO</sub> : -80V~ -600V)













V <sub>CEO</sub>	I <sub>C</sub>	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	SOT-89
		(Unit: mm)  ■ (1.2 X0.8)	 ■ (1.60X0.85)	 ■ (1.6 X1.2)	 ■ (1.6 X1.2)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.93X1.3)	 ■ (4.7X2.5)
-80V	-400mA												KTA1662
	-500mA											MMBTA56	
	-1A												KTB1260
	-4A												
	-6A												
	-7A												
-100V	-100mA											BSS63	
	-2A												
	-3A												
	-5A												
	-6A												
	-10A												
	-25A												
-120V	-100mA					KTA2017						KTA1517	
	-600mA											2N5400S	
	-800mA												KTA1661
	-1A												
	-1.2A												
	-5A												
	-8A												
-140V	-10A												
	-12A												
-150V	-50mA												KTA1660
	-600mA											2N5401S	
	-10A												
-160V	-1A												
	-1.5A												
-180V	-1.5A												
	-2A												
-200V	-100mA												
	-500mA											MMBTA93	
-230V	-1A												
	-15A												
-250V	-50mA												
-300V	-50mA												
	-100mA								*KTA1073T				
	-500mA											MMBTA92	
-400V	-300mA												
	-500mA												
	-2A												
-600V	-1A												

Note) \* : Under development

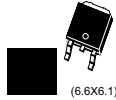

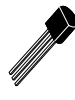

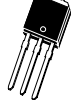

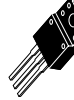
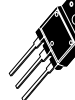

PNP Transistors ( V<sub>CEO</sub> : -80V~ -600V)

V <sub>CEO</sub>	I <sub>C</sub>	 <small>(6.6X6.1)</small>								
-80V	-400mA				KTA1274					
	-500mA			MPSA56						
	-1A				KTB1241					
	-4A							KTB1368		
	-6A							KTA1725		
	-7A							KTB1370		
-100V	-100mA									
	-2A	MJD117				MJD117L		TIP117F		
	-3A							TIP32CF		
	-5A	KTA1042D				KTA1042L		KTA1049 KTB1367		
	-6A							TIP42CF		
	-10A									TIP34C
	-25A									TIP36C
-120V	-100mA			KTA1268 KTA2400						
	-600mA			2N5400						
	-800mA				KTA1023					
	-1A	KTA1045D				KTA1045L	KTB631K			
	-1.2A						KTA1704			
	-5A							KTB1423		
	-8A									
	-10A							KTB778	KTA1940 KTB688	
-140V	-10A									KTA1695
	-12A									KTB817
-150V	-50mA				KTA1024		KTA1360			
	-600mA			2N5401 2N5401C						
	-10A									KTB2510
-160V	-1A				KTA1275					
	-1.5A	KTA1225D				KTA1225L	KTA1700	KTA1659		
-180V	-1.5A							KTA1659A		
	-2A							KTB1369		
-200V	-100mA				KTA1070					
	-500mA			MPSA93						
-230V	-1A							KTA1837		
	-15A									KTA1962
-250V	-50mA			BF423						
	-50mA			BF421						
	-100mA						KTA1381			
-300V	-500mA			KTA1279 MPSA92						
	-300mA			MPSA94						
-400V	-500mA				KTA1277		KTA1703			
	-2A	KTA1862D				KTA1862L				
-600V	-1A	KTA1807D				KTA1807L				

NPN Transistors ( V<sub>CEO</sub> : 10V ~ 65V )

V <sub>CEO</sub>	I <sub>C</sub>	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	SOT-89	
		(Unit: mm)  ■ (1.2 X0.8)	 ■ (1.60X0.85)	 ■ (1.6 X1.2)	 ■ (1.6 X1.2)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.9X1.3)	 ■ (4.7X2.5)	
10V	2A												KTC4377	
12V	500mA	KTC4072V	KTC4072E		KTC802E									
15V	50mA					KTC4021 KTC4082		KTC813U				KTC3121 KTC3882		
	100mA											BFQ31		
	200mA											KTC3883		
	500mA					KTN2369AU KTN2369U						KTN2369S KTN2369AS		
20V	50mA													
	100mA											BCW31 / 32		
	300mA										KTC812T	KTC2875 KTD1304		
	1A								KTC3531T	KTX411T				
	1.5A								KTC3532T					
	2A													
	3A								KTC3535T					
	5A								KTC3536T					
25V	25mA												BF599 BFS20	
	50mA					KTC4081						KTC3881S		
	800mA													
	1A													
	1.5A													
30V	20mA		KTC4080E			KTC4080							KTC3880S	
	50mA					KTC4079							KTC3879S	
	100mA					BC848W							BC848 BC849 KTC3878S	
	400mA												MMBTA517	
	500mA					KTC4076				KTC611T	KTC811T	KTC3876S MMBTA13 MMBTA14		
	600mA					KTN2222U							KN2222S KTN2222S	
	800mA												KTC3265	
	1.5A												KTC4376	
	2A									KTC3541T			KTC4375	
	3A									KTC3544T				
40V	50mA		KTD1824E			KTD1824								
	200mA					2N3904U							KN3903S KN3904S 2N3904S	
	600mA					KTN2222AU							KN2222AS KN4400S KN4401S KTN2222AS	
45V	100mA					BC847W							BCW71 BCW72 BC847 BC850	
	500mA												BCX19	
	800mA												BC817	
50V	150mA	KTC4075V	KTC4075E	KTX401E KTC601E	KTC801E KTC811E KTC812E	KTC4075 KTC4666	KTX401U KTC601U	KTC801U KTC811U KTC812U KTX102U					KTC3875S KTC3295	
	200mA									KTD1854T				
	1A									KTC3551T			KTD1003	
	2A												KTC4379	
	3A									KTC3552T			KTD1624	
	5A									*KTC3553T				
60V	100mA												BCV71 / 72	
	500mA												MMBTA05	
	1A	Note) * : Under development												KTC4378
	3A													
	4A													
	5A													
65V	100mA					BC846W							BC846	

NPN Transistors ( V<sub>CEO</sub> : 10V ~ 65V )

V <sub>CEO</sub>	I <sub>C</sub>	DPAK 	TO-92M 	TO-92 	TO-92L 	IPAK 	TO-126 	TO-220IS 	TO-3P(H)IS 	TO-3P(N) 
10V	2A				KTC3226					
12V	500mA									
15V	50mA			KTC2347						
	100mA									
	200mA									
15V	500mA			KTN2369 KTN2369A KTH2369 KTH2369A						
	50mA			BC239						
	100mA			BC238						
20V	300mA		KTD1303	KTC2874 KTD1302						
	1A									
	1.5A									
	2A			KTC3266						
	3A									
	5A	KTC3072D		KTD1146	KTD1145	KTC3072L				
	10A	KTC5001D								
25V	25mA									
	50mA			KTC3197						
	800mA			BC338						
	1A			KTD545						
	1.5A			MPS8050 KTC3211						
30V	20mA		KTC3195	KTC3194 KTC9016 KTC9018						
	50mA		KTC3193	KTC3192 KTC9011						
	100mA		KTC3191	BC548 BC549 KTC3190						
	400mA									
	500mA		KTC1020	BC517 KTC3202 KTC9013 MPSA13 MPSA14						
	600mA			KN2222 KTN2222						
	800mA		KTC3204	KTC3203 KTC8050						
	1.5A									
	2A			KTC3210	KTC3205					
	3A			KTD1882			KTC2804 KTD882	KTC4369		
5A										
40V	50mA									
	200mA			KN3903 KN3904 2N3904 2N3904C						
	600mA			KN2222A KN4400 KN4401 KTN2222A						
45V	100mA			BC237 BC547 BC550						
	500mA			KTC200						
	800mA			BC337						
50V	150mA		KTC3199 KTC3199L KTC3113	KTC945 KTC945B KTC3198 KTC3198L KTC3117 KTC9014			KTC3114			
	200mA									
	1A				KTD1028					
	2A	KTC2815D			KTC3209	KTC2815L	KTC2814			
	3A				KTD1347					
5A										
60V	100mA									
	500mA			BC637 MPSA05 MPSA27						
	1A			MPS651 KTC1008	KTD863					
	3A	KTD2020D				KTC2020L		KTC2026 KTD2058 KTD2424		
	4A						KTD1411	KTC1003		
	5A	KTC5103D				KTC5103L	KTD1691			
8A	*KTC1804D					*KTC1804L				
65V	100mA			BC546						




NPN Transistors ( V<sub>CEO</sub> : 80V ~ 1500V )

V <sub>CEO</sub>	I <sub>C</sub>	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23	SOT-89
		(Unit: mm)  ■ (1.2 X0.8)	 ■ (1.60X0.85)	 ■ (1.6 X1.2)	 ■ (1.6 X1.2)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.0X1.25)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.9X1.6)	 ■ (2.93X1.3)	 ■ (4.7X2.5)
80V	100mA											BSS64	
	400mA												KTC4374
	500mA											MMBTA06	
	800mA												
	1A												KTD1898
	3A												
	4A												
	5A												
	6A												
	10A												
100V	2A												
	3A												
	5A												
	6A												
	7A												
	10A												
120V	100mA					KTC4077						KTC3911S	
	800mA												KTC4373
	1A												
	1.2A												
	8A												
140V	600mA											2N5550S	
	10A												
	12A												
150V	50mA												KTC4372
	10A												
160V	600mA											2N5551S	
	1A												
	1.5A												
180V	100mA												
	1.5A												
	2A												
	5A												
200V	100mA												
	500mA											MMBTA43	
230V	1A												
	15A												
250V	50mA												
300V	50mA												
	100mA								*KTC3207I				
	200mA												
	500mA											MMBTA42	
350V	300mA												
400V	300mA												
	1.5A												
	2A												
	4A												
	5A												
	7A												
500V	3A												
	5A												
800V	1.5A												
	3A												
1500V	6A												

Note) \* : Under development

NPN Transistors ( V<sub>CEO</sub> : 80V ~ 1500V )

V <sub>CEO</sub>	I <sub>C</sub>	 DPAK (6.6x6.1)	 TO-92M	 TO-92	 TO-92L	 IPAK	 TO-126	 TO-220IS	 TO-3P(H)IS	 TO-3P(N)
80V	100mA									
	400mA				KTC3227					
	500mA			MPSA06						
	800mA				KTC1006					
	1A				KTD1863					
	3A							KTD2092		
	4A							KTD1414 KTD2060		
	5A							KTD2066		
	6A							KTC4511		
100V	10A							KTD1937		
	2A	MJD112				MJD112L		TIP112F		
	3A							TIP31CF		
	5A	KTC2022D				KTC2022L		KTC2028 KTD1413 KTD2059		
	6A							TIP41CF		
	7A							KTD1415		
	10A									TIP33C
	25A									TIP35C
120V	100mA			KTC3400 KTC3200						
	800mA				KTC1027					
	1A	KTC2025D				KTC2025L	KTD600K			
	1.2A						KTC2803			
	8A									
	10A								KTD998	KTC5197 KTD718
140V	600mA			2N5550						
	10A									KTC4468
	12A									KTD1047
150V	50mA				KTC3206		KTC3423			
	10A									KTD1510
160V	600mA			2N5551 2N5551C						
	1A				KTC3228					
	1.5A	KTC2983D				KTC2983L	KTC2800	KTC4370		
180V	100mA				KTC1026					
	1.5A							KTC4370A		
	2A							KTD2061		
	5A									KTD921
200V	100mA				KTC3467		KTC3502			
	500mA			MPSA43						
230V	1A							KTC4793		
	15A									KTC5242
250V	50mA			BF422						
	50mA			BF420						
300V	100mA				KTC3207		KTC2801 KTC3503	KTC3229		
	200mA						KTC4217			
	500mA			MPSA42						
350V	300mA			MPSA45 KTC3245						
	300mA			MPSA44						
400V	1.5A						MJE13003			
	2A	KTC3631D				KTC3631L				
	4A							MJE13005F		
	5A							KTC4419		
	7A									
	8A							MJE13007F		
500V	3A							KTC4520F		
	5A							KTC4521F		
800V	1.5A									
	3A							KTC4527F		
1500V	6A								KTD2499	

Small Signal General Purpose Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)					
		Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)			IB (mA)	Min.	Typ.	VCE (V)	IC (mA)
KTA2012V	SZ	KTC4072V	LZ	-12	-500	100	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	VSM	
KTA2014V	S□	KTC4075V	L□	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4072V	LZ	KTA2012V	SZ	12	500	100	270	680	2	10	0.25	200	10	-	320	2	10		
KTC4075V	L□	KTA2014V	S□	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1		
KTA2012E	SZ	KTC4072E	LZ	-12	-500	100	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	ESM	
KTA2014E	S□	KTC4075E	L□	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4072E	LZ	KTA2012E	SZ	12	500	100	270	680	2	10	0.25	200	10	-	320	2	10		
KTC4075E	L□	KTA2014E	S□	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1		
BC858W	3□	BC848W	1□	-30	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	USM	
BC857W	3□	BC847W	1□	-45	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC856W	3□	BC846W	1□	-65	-100	100	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC848W	1□	BC858W	3□	30	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC847W	1□	BC857W	3□	45	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC846W	1□	BC856W	3□	65	100	100	110	450	5	2	0.25	10	0.5	-	300	5	10		
KTA2015	Z□	KTC4076	W□	-30	-500	100	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20		
KTA2014	S□	KTC4075	L□	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC4076	W□	KTA2015	Z□	30	500	100	70	240	1	100	0.25	100	10	-	300	6	20		
KTC4075	L□	KTA2014	S□	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1		
KTA501E	S□		-	-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	TESV	
KTC601E	L□		-	50	150	200	120	400	6	2	0.25	100	10	80	-	10	1		
KTX301E	C□		-	-50	-150	100	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTX401E	C□		-	50	150	100	120	400	6	2	0.25	100	10	80	-	10	1		
KTX201E	C□		-	±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1		
KTA501U	S□		-	-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC601U	L□		-	50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	USV	
KTX301U	C□		-	-50	-150	100	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTX401U	C□		-	50	150	100	120	400	6	2	0.25	100	10	80	-	10	1		
KTX201U	C□		-	±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1		

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade

■ Small Signal General Purpose Transistors

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)			
			VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)	IC (mA)	
KTA701E	S □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA702E	SZ		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTA711E	E □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA712E	C □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC801E	L □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1	
KTC802E	LZ		12	500	200	270	680	2	10	0.25	200	10	-	320	2	10	
KTC811E	V □		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	
KTC812E	W □		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	
KTX101E	B □		±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1	
KTA701U	S □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA711U	E □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA712U	F □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC801U	L □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1	
KTC811U	V □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1	
KTC812U	W □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1	
KTX101U	B □		±50	±150	200	120	400	±6	±2	0.25 -0.3	±100	±10	80	-	±10	±1	
KTX102U	D □		±50	±150	200	120	400	±6	±2	0.25	-0.3	±100	±10	80	-	±10	
KTA511T	S □		-30	-500	900▲	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	
KTC611T	L □		30	500	900▲	70	240	1	100	0.25	100	10	-	300	6	20	
KTX111T	B □		±30	±500	900▲	70	240	±1	±100	±0.25	±100	±10	-	300 200	±6	±20	
KTA711T	S □		-30	-500	900▲	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	
KTC811T	L □		30	500	900▲	70	240	1	100	0.25	100	10	-	300	6	20	

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade



■ Small Signal Low Noise Transistors

Type No.	Complementary		Max. Ratings			hFE			VCE(sat) (V)			NF (dB)				Package	Outline (Unit: mm)		
	Mark	Mark	VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Max.	VCE (V)	IC (mA)	Rg (kΩ)			f (kHz)	
KTA2017	C □	KTC4077	D □	-120	-100	100	700	-6	-2	-0.3	-10	-1	10	-6	-0.1	10	1	USM	
KTC4666	T □	-	-	50	150	100	3600	6	2	0.25	100	10	0.5 ◇	6	0.1	10	0.1		
KTC4077	D □	KTA2017	C □	120	100	100	700	6	2	0.3	10	1	10	6	0.1	10	1		
BSS63	T6	-	-	-100	-100	200	30 ◆	-1	-10	-0.25	-25	-2.5	-	-	-	-	-	SOT-23	
BSS64	U6	-	-	80	100	200	60 ◇	1	1	0.15	4	0.4	-	-	-	-			
KTA1517	AC □	KTC3911S	AD □	-120	-100	150	700	-6	-2	-0.3	-10	-1	10	-6	-0.1	10	1		
KTC3911S	AD □	KTA1517	AC □	120	100	150	700	6	2	0.3	10	1	10	6	0.1	10	1		

Note) ◆: Min, ◇: Typ, □: hFE Grade

■ Small Signal Audio Muting Transistors

Type No.	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Ron (Ω)				Package	Outline (Unit: mm)				
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.	VCE (V)	IC (mA)	Typ.			f (kHz)	IB (mA)	Vin (V)	
KTC2875	M □	-	20	300	150	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	SOT-23	
KTD1304	MAX	-	20	300	200	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3		
KTC812T	M □		20	300	900 ▲	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	TS6	

Note) ▲: Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □: hFE Grade

■ Small Signal High hFE Transistors

Type No.	Complementary		Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)		
	Mark	Mark	VCE0 (V)	IC (mA)	PC (mW)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)	IC (mA)
KTD1824E	L □	-	40	50	100	400	1000	2000	10	2	0.2	10	1	-	120	10	2	ESM	
KTD1824	L □	-	40	50	100	400	1000	2000	10	2	0.2	10	1	-	120	10	2	USM	
KTC3295	T □	-	50	150	150	600	-	3600	6	2	0.25	100	10	100	250	10	10	SOT-23	
KTD1003	L □	-	50	1A	@1W	800	1500	3200	5	300	0.3	500	5	150	250	10	500	SOT-89	

Note) @: Mounted on Ceramic Substrate (250mm<sup>2</sup> × 0.8t), □: hFE Grade

Small Signal Darlington Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)	
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			Typ.
MMBTA63	AGX	-	-30△	-500	350	5000	-5	-10	-1.5	-100	-0.1	125	-5	-10	SOT-23	
MMBTA64	AFX	-	-30△	-500	350	10000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MMBTA517	UA	-	30	400	350	30000	2	100	1	100	1	220	2	100		
MMBTA13	AIX	-	30△	500	350	5000	5	10	1.5	100	0.1	125	5	10		
MMBTA14	AHX	-	30△	500	350	10000	5	10	1.5	100	0.1	125	5	10		
KTB1234T	SY	KTD1854T	LY	-50	-200	900▲	5000	-2	-10	-1.5	-100	-0.1	-	-	TSM	
KTD1854T	LY	KTB1234T	SY	50	200	900▲	5000	2	10	1.5	100	0.1	-	-		

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), △ : VCES

Small Signal High Voltage Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)			
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			Typ.	Max.	VCE (V)
2N5400S	ZN	-	-120	-600	※350	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10	
2N5401S	ZE	-	-150	-600	※350	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10	
2N5550S	ZP	-	140	600	※350	60	250	5	10	0.15	10	1	100	-	300	10	10	
2N5551S	ZF	-	160	600	※350	80	250	5	10	0.15	10	1	100	-	300	10	10	
MMBTA93	YW	MMBTA43	ABX	-200	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-20	-10	
MMBTA92	YV	MMBTA42	AAX	-300	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-20	-10	
MMBTA43	ABX	MMBTA93	YW	200	500	※350	40	-	10	10	0.5	20	2	50	-	20	10	
MMBTA42	AAX	MMBTA92	YV	300	500	※350	40	-	10	10	0.5	20	2	50	-	20	10	
*KTA1073T	SX□	KTC3207T	LX	-300	-100	900▲	30	150	-10	-20	-0.5	-20	-2	50	55	-	-10	-20
*KTC3207T	LX	KTA1073T	SX□	300	100	900▲	30	150	10	20	1	10	1	50	-	-	10	20
KTC4372	A□	KTA1660	B□	150	50	@1W	70	240	5	10	0.5	10	1	-	120	-	30	10
KTC4373	C□	KTA1661	D□	120	800	@1W	80	240	5	100	1	500	50	-	120	-	5	100

Note) ※ : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @ : Mounted on Ceramic Substrate (250mm<sup>2</sup> × 0.8t), □ : hFE Grade, ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), \* : Under development

Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Cob(pf)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm : Max.)				
	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)	IC (mA)				Max.	VCB (V)	f (MHz)	
KTC4080E	Q□	30	20	100	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	2.5	15	ESM	
KTC4021	VA	15	50	100	60	320	3	8	-	-	-	1100	1500	-	10	8	1.3	10	-	-	-		
KTC4082	HF	15	50	100	40	200	3	8	-	-	-	650	1100	-	10	8	1.3	10	-	-	-	USM	
KTC4081	HH	25	50	100	20	200	10	10	0.2	15	1.5	250	600	-	10	10	1.6	10	-	-	-		
KTC4080	Q□	30	20	100	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100	15		
KTC4079	R□	30	50	100	40	240	12	2	0.4	10	1	100	-	400	10	1	3.2	10	-	-	27		
KTC813U	VA	15	50	200	60	320	3	8	-	-	-	1100	1500	-	10	8	1.3	10	-	-	-	US6	
BFQ31	S2	15	100	200	20	-	1	3	0.4	10	1	600	-	-	10	4	1.7	10	6	60	SOT-23		
BF599	G2	25	25	200	40	-	10	7	-	-	-	550	-	10	7	0.35◇	10	-	-	-			
BFS20	G1	25	25	200	40	-	10	7	-	-	-	275	550	-	10	7	0.35◇	10	-	-			-
KTC3121	VA	15	50	150	60	320	3	8	-	-	-	1100	1500	-	10	8	1.3	10	-	-			-
KTC3882	HF	15	50	150	40	200	3	8	-	-	-	650	1100	-	10	8	1.3	10	-	-			-
KTC3883	AEO	15	200	150	55	140	1	10	0.25	10	1	500	-	-	10	10	3	10	-	-			-
KTC3881S	HH	25	50	150	20	200	10	10	0.2	15	1.5	250	600	-	10	10	1.6	10	-	-			-
KTC3880S	AQ□	30	20	150	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100			15
KTC3879S	R□	30	50	150	40	240	12	2	0.4	10	1	100	-	400	10	1	3.2	10	-	-	27		
KTC3878S	F□	30	100	150	40	240	12	2	0.4	10	1	80	120	-	10	2	-	-	3.5	1	-		

Note) ◇ : Typ., □ : hFE Grade

Small Signal Strobe Flash Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			f <sub>T</sub> (MHz)		Package	Outline (Unit: mm)			
	Mark	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (A)	P <sub>C</sub> (mW)	Min.	Max.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	Max.	I <sub>B</sub> (mA)	Typ.			V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	
KTA1001	K □	-	-20	-3	@1W	100	320	-2	-500	-0.5	-3A	-75	170	-2	-500	SOT-89	
KTC4377	S □	-	10	2	@1W	140	600	1	500	0.5	2A	50	150	1	500		

Note) @ : Mounted on Ceramic Substrate (250mm × 0.8), | : hFE Grade

Small Signal Switching Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			f <sub>T</sub> (MHz)	t <sub>on</sub> (ns)	t <sub>off</sub> (ns)	t <sub>d</sub> (ns)	t <sub>r</sub> (ns)	t <sub>stg</sub> (ns)	t <sub>f</sub> (ns)	Package	Outline (Unit: mm : Max.)		
	Mark	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	P <sub>C</sub> (mW)	Max.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	Min.	Max.	Max.	Max.	Max.	Max.	Max.	Max.				
2N3906U	ZA	2N3904U	ZC	-40	-200	100	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	USM	
2N3904U	ZC	2N3906U	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907U	ZD	KTN2222U	ZB	-40	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AU	ZH	KTN2222AU	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369AU	ZK	-	-	15	500	100	120	1	10	0.25	10	1	500	12	15	-	-	13	-		
KTN2369U	ZI	-	-	15	500	100	120	1	10	0.25	10	1	500	12	-	-	-	-	-		
KTN2222U	ZB	KTN2907U	ZD	30	600	100	300	10	150	0.3	150	15	300	-	-	10	25	225	60		
KTN2222AU	ZG	KTN2907AU	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
2N3906S	ZA	2N3904S	ZC	-40	-200	*350	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	35	225	75		
2N3904S	ZC	2N3906S	ZA	40	200	*350	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907S	ZD	KTN2222S	ZB	-40	-600	*350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AS	ZH	KTN2222AS	ZG	-60	-600	*350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369S	ZI	-	-	15	500	*350	120	1	10	0.25	10	1	-	12	-	-	-	-	-		
KTN2369AS	ZK	-	-	15	500	*350	120	1	10	0.25	10	1	-	12	15	-	-	13	-		
KTN2222S	ZB	KN2907S	ZDA	30	600	*350	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
KTN2222AS	ZG	KTN2907AS	ZH	40	600	*350	300	10	150	0.3	150	15	300	-	-	10	25	225	60		
KTA1666	W □	KTC4379	U □	-50	-2A	@1W	240	-2	-500	-0.5	-1A	-50	120 ◊	0.1 ◊	-	-	-	1.0 ◊	0.1 ◊		
KTB1124	X □	KTD1624	Y □	-50	-3A	@1W	400	-2	-100	-0.7	-2A	-100	150 ◊	70 ◊	-	-	-	450 ◊	35 ◊		
KTC4379	U □	KTA1666	W □	50	2A	@1W	240	2	500	0.5	1A	50	120 ◊	0.1 ◊	-	-	-	1.0 ◊	0.1 ◊		
KTD1624	Y □	KTB1124	X □	50	3A	@1W	400	2	100	0.5	2A	100	150 ◊	70 ◊	-	-	-	650 ◊	35 ◊		

Note) ◊ : Typ. , \* : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @ : Mounted on Ceramic Substrate (250mm × 0.8), □ : hFE Grade

Small Signal Low VCE(sat) Transistors (A)

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			f <sub>T</sub> (MHz)		Package	Outline (Unit: mm)				
	Mark	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (A)	P <sub>C</sub> ▲ (mW)	Min.	Max.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	Max.	I <sub>B</sub> (mA)	Typ.			V <sub>CE</sub> (V)	I <sub>C</sub> (mA)		
KTA1531T	SA □	KTC3531T	HA □	-20	-1	900	120	400	-2	-50	-0.3	-500	-50	180	-10	-50	TSM	
KTA1532T	SB	KTC3532T	HB	-20	-1.5	900	200	560	-2	-100	-0.18	-750	-15	210	-2	-300		
KTA1535T	SD	KTC3535T	HD	-20	-3	900	200	560	-2	-500	-0.165	-1.5A	-30	160	-2	-500		
KTA1536T	SE	KTC3536T	HE	-20	-5	900	200	560	-2	-500	-0.30	-3A	-60	140	-2	-500		
KTA1541T	SF	KTC3541T	HF	-30	-1.5	900	200	560	-2	-100	-0.375	-750	-15	380	-10	-300		
KTA1542T	SH	KTC3542T	HH	-30	-3	900	200	560	-2	-500	-0.23	-1.5A	-30	380	-10	-500		
* KTA1543T	SJ	KTC3543T	HJ	-30	-5	900	200	560	-2	-500	-0.21	-2.5A	-50	250	-10	-500		
KTA1544T	SN	KTC3544T	HN	-30	-2	900	200	560	-2	-100	-0.6	-1.5A	-75	150	-10	-50		
KTA1551T	SK	KTC3551T	HK	-50	-1	900	200	560	-2	-100	-0.43	-500	-10	420	-10	-300		
KTA1552T	SL	KTC3552T	HL	-50	-3	900	200	560	-2	-100	-0.2	-1A	-50	360	-10	-500		
* KTA1553T	SM	KTC3553T	HM	-50	-5	900	200	560	-2	-500	-0.45	-2A	-40	250	-10	-500		
KTC3531T	HA □	KTA1531T	SA □	20	1	900	120	400	2	50	0.3	500	50	180	10	50		
KTC3532T	HB	KTA1532T	SB	20	1.5	900	200	560	2	100	0.2	750	15	210	2	300		
KTC3535T	HD	KTA1535T	SD	20	3	900	200	560	2	500	0.15	1.5A	30	180	2	500		
KTC3536T	HE	KTA1536T	SE	20	5	900	200	560	2	500	0.30	3A	60	160	2	500		
KTC3541T	HF	KTA1541T	SF	30	1.5	900	200	560	2	100	0.225	750	15	450	10	300		
KTC3542T	HH	KTA1542T	SH	30	3	900	200	560	2	500	0.18	1.5A	30	450	10	500		
* KTC3543T	HJ	KTA1543T	SJ	30	5	900	200	560	2	500	0.165	2.5A	50	290	10	500		
KTC3544T	HN	KTA1544T	SN	30	2	900	200	560	2	100	0.4	1.5A	75	150	10	50		
KTC3551T	HK	KTA1551T	SK	50	1	900	200	560	2	100	0.19	500	10	420	10	300		
KTC3552T	HL	KTA1552T	SL	50	3	900	200	560	2	100	0.12	1A	50	380	10	500		
* KTC3553T	HM	KTA1553T	SM	50	5	900	200	560	2	500	0.15	2A	40	330	10	500		

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade, \* : Under development



Small Signal Low VCE(sat) Transistors (B)

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			fr(MHz)			Package	Outline (Unit: mm)		
			VCEO (V)	IC (A)	PC ▲ (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	IC (mA)	IB (mA)			Typ.	VCE (V)
KTX311T	C □		-20	-1	900	120	400	-2	-50	-0.3	-500	-50	180	-10	-50	TSV	
KTX411T	C □		20	1	900	120	400	2	50	0.3	500	50	180	10	50		
KTX511T	DA		-20	-1.5	900	200	560	-2	-100	-0.18	-750	-15	210	-2	-100	TS6	
KTX512T	DB		-20	-3	900	200	560	-2	-500	-0.165	-1.5A	-30	160	-2	-500		

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade

General Purpose Power Transistors

Type No.	Complementary	Max. Ratings				hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)		
		VCEO (V)	IC (A)	PC ★ (W)	PC ☆ (W)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	IC (mA)	IB (mA)			Typ.	VCE (V)
KTA1242D	-	-20	-5	1.3	-	100	320	-2	-500	-0.5	-3A	-75	170	-2	-500	DPAK	
KTA1834D	KTC5001D	-20	-10	1.3	10	120	390	-2	-500	-0.25	-4A	-50	150	-5	-1.5A		
KTA1040D	KTC2020D	-60	-3	1.3	20	100	300	-5	-500	-1.0	-2A	-200	30	-5	-500		
KTA1042D	KTC2022D	-100	-5	-	20	70	240	-5	-1A	-2.0	-4A	-400	30	-5	-1A		
KTA1045D	KTC2025D	-120	-1	1.3	8	100	320	-5	-50	-0.4	-500	-50	110	-10	-50		
KTA1225D	KTC2983D	-160	-1.5	1.3	10	70	240	-5	-100	-1.5	-500	-50	100	-10	-100		
KTC3072D	-	20	5	1.3	-	120	700	2	500	0.4	3A	60	100	6	50		
KTC5001D	KTA1834D	20	10	1.3	10	120	390	2	500	0.25	4A	50	150	5	1.5A		
KTC2020D	KTA1040D	60	3	1.3	20	100	300	5	500	1.0	2A	200	30	5	500		
KTC2022D	KTA1042D	100	5	-	20	70	240	5	1A	2.0	4A	400	30	5	1A		
KTC2025D	KTA1045D	120	1	1.3	8	100	320	5	50	0.4	500	50	130	10	50		
KTC2983D	KTA1225D	160	1.5	1.3	10	70	240	5	100	1.5	500	50	100	10	100		

Note) ★ : Ta=25 °C, ☆ : Tc=25 °C

Switching Power Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)	ton (µs)	tstg (µs)	tr (µs)	Package	Outline (Unit: mm)	
		VCEO (V)	IC (A)	PC (W)	Max.	VCE (V)	IC (mA)	Max.	IC (A)							IB (mA)
KTA1718D	KTC2815D	-50	-2	10	240	-2	-500	-0.5	-1	-50	100	0.1 ◆	1.0 ◆	0.1 ◆	DPAK	
KTA1385D	KTC5103D	-60	-5	15	400	-1	-2A	-0.3	-2	-200	-	1	2.5	1		
KTA1204D	KTC1804D	-60	-8	20	400	-2	-500	-0.4	-4	-200	130	0.05 ◆	0.45 ◆	0.02 ◆		
KTA1862D	KTC3631D	-400	-2	10	180	-5	-100	-0.5	0.5	-100	18	0.2 ◆	1.8 ◆	0.4 ◆		
KTA1807D	-	-600	-1	20	120	-5	-100	-1.0	-0.3	-60	28	0.5	5.0	0.5		
KTC2815D	KTA1718D	50	2	10	240	2	500	0.5	1	50	100	0.1 ◆	1.0 ◆	0.1 ◆		
KTC5103D	KTA1385D	60	5	15	400	1	2A	0.3	2	200	-	1	2.5	1		
KTC1804D	KTA1204D	60	8	20	400	2	500	0.4	4	200	180	0.05 ◆	0.5 ◆	0.02 ◆		
KTC3631D	KTA1862D	400	2	10	180	5	-100	0.5	0.5	100	18	0.2 ◆	1.8 ◆	0.4 ◆		

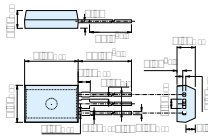
Note) ◆ : Typ

Darlington Power Transistors

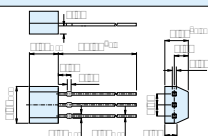
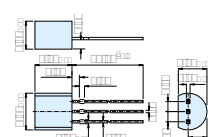
Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)	
		VCEO (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	VCE (V)			IC (mA)
MJD117	MJD112	-100	-2A	20W	1000	-3	-2A	-2	-2A	-8	25	-10	-750	DPAK	
MJD112	MJD117	100	2A	20W	1000	3	2A	2	2A	8	25	10	750		



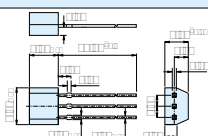
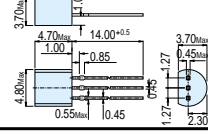
■ Small Signal General Purpose Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)	IC (mA)		
KTA1273	KTC3205	-30	-2A	1W	100	320	-2	-500	-2	-1.5A	-30	-	120	-2	-500	TO-92L	
KTB764	KTD863	-50	-1A	1W	60	320	-2	-50	-0.7	-500	-50	-	150	-10	-50		
KTA1274	KTC3227	-80	-400	1W	70	240	-2	-50	-0.4	-200	-20	-	100	-10	-10		
KTB1241	KTD1863	-80	-1A	1W	70	400	-3	-100	-0.4	-500	-50	-	100	-5	-50		
KTC3205	KTA1273	30	2A	1W	100	320	2	500	2	1.5A	30	-	120	2	500		
KTD863	KTB764	60	1A	1W	60	320	2	50	0.5	500	50	-	150	10	50		
KTC3227	KTA1274	80	400	1W	70	240	2	50	0.4	200	20	-	100	10	10		
KTC1006	-	80	800	1W	100	-	2	150	0.7	500	20	-	150	10	100		
KTD1863	KTB1241	80	1A	1W	70	400	3	500	0.4	500	20	-	100	10	50		
KTC1027	KTA1023	120	800	1W	80	240	5	100	1	500	50	-	120	5	100		

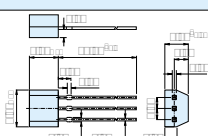
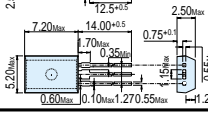
■ Small Signal Low Noise Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			NF (dB)					Package	Outline (Unit: mm)
		VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Max.	VCE (V)	IC (mA)	Rg (kΩ)	f (kHz)			
																VCE (V)		
KTA1267L	KTC3199L	-50	-150	400	400	-6	-2	-0.3	-100	-10	6.0	-6	-0.1	10	0.1	TO-92M		
KTC3199L	KTA1267L	50	150	400	700	6	2	0.25	100	10	6.0	6	0.1	10	0.1			
KTA1266L	KTC3198L	-50	-150	625	400	-6	-2	-0.3	-100	-10	6.0	-6	-0.1	10	0.1	TO-92		
KTA1268	KTC3200	-120	-100	625	700	-6	-2	-0.3	-10	-1	6.0	-6	-0.1	10	0.01			
KTA2400	KTC3400	-120	-100	625	400	-6	-2	-0.3	-10	-1	10	6	-0.1	10	1			
KTC3198L	KTA1266L	50	150	625	700	6	2	0.25	100	10	6	6	0.1	10	0.1			
KTC3400	KTA2400	120	100	625	400	6	2	0.3	10	1	10	6	0.1	10	1			
KTC3200	KTA1268	120	100	625	700	6	2	0.3	10	1	6	6	0.1	10	0.01			

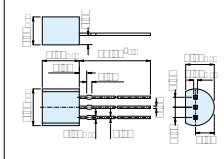
■ Small Signal Audio Muting Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)		RON (Ω)				Package	Outline (Unit: mm)	
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.	VCE (V)	IC (mA)	Typ.	f (kHz)	IB (mA)			Vin (V)
KTD1303	-	20	300	400	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3	TO-92M	
KTC2874	-	20	300	625	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-		
KTD1302	-	20	300	625	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3	TO-92	

■ Small Signal High hFE Transistors

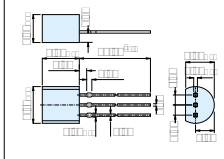
Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)	
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)			IC (mA)
KTC3113	-	50	150	400	600	-	3600	6	2	0.25	100	10	100	250	10	10	TO-92M	
KTC3112	-	50	150	625	600	-	3600	6	2	0.25	100	10	100	250	10	10		
KTD1028	-	50	1A	1W	800	1500	3200	5	300	0.3	500	5	150	250	10	500	TO-92L	

■ Small Signal Darlington Transistors

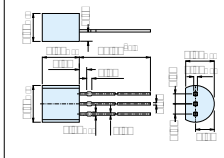
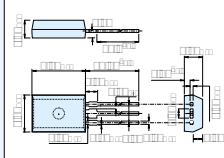
Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)		
		VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			VCE (V)	IC (mA)
MPSA62	-	-20 $\wedge$	-500	625	20,000	-	-5	-10	-1	-10	-0.01	125	-5	-10	TO-92	
MPSA63	MPSA13	-30 $\wedge$	-500	625	5,000	-	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA64	MPSA14	-30 $\wedge$	-500	625	10,000	-	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA77	MPSA27	-60 $\wedge$	-500	625	10,000	-	-5	-100	-1.5	-100	-0.1	-	-	-		
MPSA13	MPSA63	30 $\wedge$	500	625	5,000	5	10	1.5	100	0.1	125	5	10			
MPSA14	MPSA64	30 $\wedge$	500	625	10,000	5	10	1.5	100	0.1	125	5	10			
BC517	-	30	500	625	30,000	2	100	1	100	1	220 $\diamond$	5	10			
MPSA27	MPSA77	60 $\wedge$	500	625	10,000	5	100	1.5	100	0.1	-	-	-			

Note)  $\wedge$ : VCES,  $\diamond$ : Typ.

■ Small Signal High Voltage Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)				
		VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			Typ.	Max.	VCE (V)	IC (mA)
BF423	BF422	-250	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10	TO-92	
BF421	BF420	-300	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10		
BF422	BF423	250	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10		
BF420	BF421	300	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10		
MPSA93	MPSA43	-200	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MPSA92	MPSA42	-300	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MPSA94	MPSA44	-400	-300	625	50	200	-10	-10	-0.5	-10	-1	-	-	-	-	-		
MPSA43	MPSA93	200	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA42	MPSA92	300	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA45	-	350	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-		
MPSA44	MPSA94	400	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-		
2N5400	-	-120	-600	625	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10		
2N5401	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5401C	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5550	-	140	600	625	60	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551C	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		
KTA1279	-	-300	-500	625	40	-	-10	-10	-0.5	-10	-1	50	-	-	20	-10		
KTC3245	-	350	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-		
KTA1023	KTC1027	-120	-800	1W	80	240	-5	-100	-1	-500	-50	-	120	-	-5	-100		
KTA1024	KTC3206	-150	-50	1W	70	240	-5	-10	-0.8	-10	-1	-	120	-	-30	-10		
KTA1275	KTC3228	-160	-1A	1W	60	320	-5	-200	-1.5	-500	-50	15	50	-	-5	-200		
KTA1070	KTC3467	-200	-100	1W	70	240	-5	-10	-0.6	-20	-2	-	150	-	-30	-10		
KTA1277	-	-400	-500	1W	60	200	-5	-100	-1	-100	-10	-	-	-	-	-		
KTC3206	KTA1024	150	50	1W	70	240	5	10	0.5	10	1	-	120	-	30	10		
KTC3228	KTA1275	160	1A	1W	60	320	5	200	1.5	500	50	20	100	-	5	200		
KTC1026	-	180	100	1W	120	400	10	10	0.5	50	5	50	-	-	10	10		
KTC3467	KTA1070	200	100	1W	70	240	5	10	0.6	20	2	-	150	-	30	10		
KTC3207	-	300	100	1W	30	150	10	20	1	10	1	50	-	-	10	20		

■ Small Signal Strobe Flash Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)		
		VCEO (V)	IC (A)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (A)	IB (mA)	Typ.			VCE (V)	IC (mA)
KTA1243	-	-20	-5	625	100	320	-2	-500	-0.5	-3	-75	170	-2	-500	TO-92	
KTD1146	-	20	5	625	120	700	2	500	0.4	3	60	100	6	50		
KTA1241	-	-20	-5	1W	100	320	-2	-500	-0.5	-3	-75	170	-2	-500	TO-92L	
KTC3226	-	10	2	1W	140	600	1	500	0.5	2	50	150	1	500		
KTD1145	-	20	5	1W	140	600	2	500	0.5	3	60	120	10	50		

Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)			Cob(pf)		NF (dB)		Gpe (dB)		Package	Outline (Unit: mm)	
	VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	VCB (V)	Max.	f (MHz)			Min.
KTC3195	30	20	400	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100	18◇	TO-92M	
KTC3193	30	50	400	40	240	12	2	0.4	10	1	100	-	-	10	1	3.2	10	-	-	27		
KTC3191	30	100	400	40	240	12	2	0.4	10	1	80	120	-	10	2	-	-	3.5	1	-		
KTC2347	15	50	625	20	-	3	8	-	-	-	650	1100	-	10	8	1.5	10	-	-	-	TO-92	
KTC3197	25	50	625	20	200	12.5	12.5	0.2	15	1.5	300	-	-	12.5	12.5	2	10	-	-	28		
KTC3194	30	20	625	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100	15		
KTC3192	30	50	625	40	240	12	2	0.4	10	1	100	-	400	10	1	3.2	10	-	-	27		
KTC3190	30	100	625	40	240	12	2	0.4	10	1	80	120	-	10	2	-	-	3.5	1	-		
KTC9016	30	20	625	40	198	5	1	-	-	-	260	-	-	6	1	-	-	4	100k	15		
KTC9018	30	20	625	40	198	5	1	-	-	-	500	800	-	10	8	-	-	4	100k	15		
KTC9011	30	50	625	40	198	5	1	0.4	10	1	100	-	400	10	1	2.0◇	10	-	-	-		

Note) ◇: Typ.

Small Signal Switching Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)	ton (ns)	toff (ns)	td (ns)	tr (ns)	tstg (ns)	tf (ns)	Package	Outline (Unit: mm)			
		VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)										IB (mA)		
2N3906	2N3904	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	TO-92			
2N3906C	2N3904C	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75				
2N3904	2N3906	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50				
2N3904C	2N3906C	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50				
KTH2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-				
KTH2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-				
KTN2907	KTN2222	-40	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30				
KTN2907A	KTN2222A	-60	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30				
KTN2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-				
KTN2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-				
KTN2222	KTN2907	30	600	625	300	10	150	0.4	150	15	250	-	-	10	25	225	60				
KTN2222A	KTN2907A	40	600	625	300	10	150	0.3	150	15	300	-	-	10	25	225	60				
KTA1281	KTC3209	-50	-2A	1W	240	-2	-500	-0.5	-1A	-50	100◇	0.1◇	-	-	-	1.0◇	0.1◇			TO-92L	
KTB985	KTD1347	-50	-3A	1W	400	-2	-100	-0.7	-2A	-100	150◇	70◇	-	-	-	450◇	35◇				
KTC3209	KTA1281	50	2A	1W	240	2	500	0.5	1A	50	100◇	0.1◇	-	-	-	1.0◇	0.1◇				
KTD1347	KTB985	50	3A	1W	400	2	100	0.5	2A	100	150◇	70◇	-	-	-	650◇	35◇				

Note) ◇: Typ.



■ Switching Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)	ton (μs)		tstg (μs)		tf (μs)		Package	Outline (Unit: mm)
		VCE0 (V)	IC (A)	PC (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (A)	IB (mA)		Typ.	Max.	Typ.	Max.	Typ.	Max.		
KTA1718L	KTC2815L	-50	-2	10	70	240	-2	-500	-0.5	-1	-50	100	0.1	-	1.0	-	0.1	-	IPAK	
KTA1385L	KTC5103L	-60	-5	15	160	400	-1	-2A	-0.3	-2	-200	-	0.2	1	1.1	2.5	0.2	1		
KTA1204L	KTC1804L	-60	-8	20	100	400	-2	-500	-0.4	-4	-200	130	0.05	-	0.45	-	0.02	-		
KTA1862L	KTC3631L	-400	-2	10	56	180	-5	-100	-0.5	0.5	-100	18	0.2	-	1.8	-	0.4	-		
KTA1807L	-	-600	-1	20	40	120	-5	-100	-1.0	-0.3	-60	28	0.1	0.5	3.5	5.0	0.08	0.5		
KTC2815L	KTA1718L	50	2	10	70	240	2	500	0.5	1	50	100	0.1	-	1.0	-	0.1	-		
KTC5103L	KTA1385L	60	5	15	160	400	1	2A	0.3	2	200	-	0.2	1	1.1	2.5	0.2	1		
KTC1804L	KTA1204L	60	8	20	100	400	2	500	0.4	4	200	180	0.05	-	0.45	-	0.02	-		
KTC3631L	KTA1862L	400	2	10	56	180	5	100	0.5	0.5	100	18	0.2	-	1.8	-	0.4	-		
MJE13003	-	400	1.5	20	8	40	2	500	0.5	0.5	100	4◆	-	1.1	-	4	-	0.7	TO-126	
KTA1715	KTC2814	-50	-2	10	70	240	-2	-500	-0.5	-1	-50	100	-0.1	-	1	-	0.1	-		
KTC2814	KTA1715	50	2	10	70	240	2	500	0.5	1	50	100	0.1	-	1	-	0.1	-		
MJE13005F	-	400	4	30	19	36	5	1A	0.5	1	200	4◆	-	0.8	-	4	-	0.9	TO-220IS	
MJE13007F	-	400	8	40	19	36	5	2A	1	2	400	4◆	-	1.6	-	3	-	0.7		
KTC4419	-	400	5	30	10	40	4	1.5A	0.5	1.5	300	20	-	1	-	2.5	-	0.5		
KTC4520F	-	500	3	30	15	50	5	300	1	1.5	300	18	-	0.5	-	3	-	0.3		
KTC4521F	-	500	5	40	15	50	5	600	1	3	600	18	-	0.5	-	3	-	0.3		
KTC4527F	-	800	3	40	15	40	5	200	2	1.5	300	15	-	0.5	-	3	-	0.3		

Note) ◆: Min., ☆: Tc=25°C

■ High hFE Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)	ton (μs)	tstg (μs)	tf (μs)	Package	Outline (Unit: mm)		
		VCE0 (V)	IC (A)	PC ☆ (W)	Min.	Max.	VCE (V)	IC (A)	Max.	IC (A)	IB (mA)								
KTC3114	-	50	0.15	1.5	600	3600	6	2mA	0.25	0.1	10	250	-	-	-	TO-126			
KTD2092	-	80	3	25	500	1500	1	0.5	0.35	1	10	140	0.5	5	0.7			TO-220IS	
KTD2066	-	80	5	30	500	1500	1	1	0.35	3	30	130	0.6	3	0.8				
KTD1937	-	80	10	40	500	1500	1	1	0.35	5	50	70	0.6	6	1				

Note) ☆: Tc=25°C

■ Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			Package	Outline (Unit: mm)		
		VCEs (V)	IC (A)	PC ☆ (W)	Min.	Typ.	Max.	VCE (V)	IC (A)	IB (mA)				
MJD117L	MJD112L	-100	-2	20	1000	12000	-	-3	-2	-2	-2	-8	IPAK	
MJD112L	MJD117L	100	2	20	1000	12000	-	3	2	2	2	8		
KTD1411	-	60	4	15	3000	-	-	2	1	1.5	3	30	TO-126	
TIP117F	TIP112F	-100	-2	20	1000	-	-	-4	-1	-2.5	-2	-8		
TIP112F	TIP117F	100	2	20	1000	-	-	4	1	2.5	2	8	TO-220IS	
KTB1424	KTD2424	-60	-3	25	3000	-	-	-2	-1	-1.5	-3	-30		
KTB1423	-	-120	-5	30	1000	-	-	-3	-0.5	-2	-3	-12		
KTD2424	KTB1424	60	3	25	3000	-	-	2	1	1.5	3	30		
KTD1414	-	80	4	25	2000	-	-	2	1	1.5	3	6		
KTD1413	-	100	5	25	2000	6000	15000	2	3	1.5	3	3		
KTD1415	-	100	7	30	2000	-	15000	3	3	1.5	3	6	TO-3P(N)	
KTB2510	KTD1510	-150	-10	100	5000	-	-	-4	-7	-2.5	-7	-7		
KTD921	-	180	5	80	700	-	-	4	1	1.5	1.5	50		
KTD1510	KTB2510	150	10	100	5000	-	-	4	7	2.5	7	7		

Note) ☆: Tc=25°C

■ Junction Field Effect Transistors (SMD Type)

Type No.	Mark	Max. Ratings			Idss(mA)			Max.	NF (dB)				Package	Outline (Unit: mm)
		Vgdo (V)	Ig (mA)	Pd (mW)	Vds (V)	Vgs (V)	Vdd (V)		Id (mA)	Rg (kΩ)	f (kHz)			
KTK597V	F □	-20	10	100	100 ~ 480	5	0	-	-	-	-	-	VSM	
KTK597E	F □	-20	10	100	100 ~ 480	5	0	-	-	-	-	-	ESM	
KTK597	F □	-20	10	100	100 ~ 480	5	0	-	-	-	-	-	USM	
KTK596S	F □	-20	10	150	100 ~ 480	5	0	-	-	-	-	-	SOT-23	
KTK211	K □	-18	10	150	1 ~ 15	10	0	3.5	10	-	-	100MHz		

Note) | : Idss Grade

■ Junction Field Effect Transistors (Lead Type)

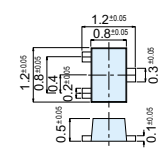
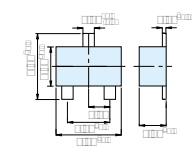
Type No.	Max. Ratings			Idss(mA)	Vds (V)	Vgs (V)	Max.	NF (dB)				Package	Outline (Unit: mm)
	Vgdo (V)	Ig (mA)	Pd (mW)					Vdd (V)	Id (mA)	Rg (kΩ)	f (kHz)		
KTK161	-18	10	400	1 ~ 15	10	0	3.5	10	-	-	100MHz	TO-92M	
KTK596	-20	10	400	100 ~ 480	5	0	-	-	-	-	-		

■ SMOS FETs (SMD Type)

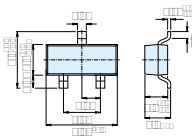
Type No.	Mark	Max. Ratings				Idss(μA)			Vth(V)				Rds(on) (Ω)			Package	Outline (Unit: mm)
		Vds (V)	Vgss (V)	Id (mA)	Pd (mW)	Max.	Vds (V)	Vgs (V)	Min.	Max.	Vds (V)	Id (mA)	Max.	Vgs (V)	Id (mA)		
KTK5131E	KA	30	±20	50	100	1	30	0	0.5	1.5	3	0.1	40	2.5	10	ESM	
KTK5132E	KB	30	±20	100	100	1	30	0	0.5	1.5	3	0.1	7	2.5	10		
KTK5131S	KA	30	±20	50	200	1	30	0	0.5	1.5	3	0.1	40	2.5	10	SOT-23	
KTK5132S	KB	30	±20	100	200	1	30	0	0.5	1.5	3	0.1	7	2.5	10		
KTK5133S	KC	30	±20	150	200	1	30	0	0.5	1.5	3	0.1	5.2	2.5	40		
KTK5134S	KD	30	±20	200	200	10	30	0	0.5	1.5	3	0.1	2	2.5	50		
KTK5162S	KF	60	±20	100	200	1	60	0	1	2.4	10	0.1	7.5	10	50		



Small Signal General Purpose BRTs

Type No.				Max. Ratings			hFE				VCE(sat) (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)
NPN		PNP		VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)				
Mark	Mark	Mark	Mark														
KRC401V	NA	KRA301V	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7	VSM	
KRC402V	NB	KRA302V	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403V	NC	KRA303V	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404V	ND	KRA304V	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405V	NE	KRA305V	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406V	NF	KRA306V	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407V	NH	KRA307V	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408V	NI	KRA308V	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC409V	NJ	KRA309V	PJ	50	100	100	70	140	5	10	0.3	10	0.5	47	22		
KRC410V	NK	KRA310V	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411V	NM	KRA311V	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC412V	NN	KRA312V	PN	50	100	100	120	-	5	1	0.3	10	0.5	100	-		
KRC413V	NO	KRA313V	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-		
KRC414V	NP	KRA314V	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416V	N2	KRA316V	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417V	N4	KRA317V	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418V	N5	KRA318V	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419V	N6	KRA319V	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		
KRC420V	N7	KRA320V	P7	50	100	100	24	-	5	10	0.3	10	0.5	10	4.7		
KRC421V	N8	KRA321V	P8	50	100	100	33	-	5	5	0.3	10	0.5	47	10		
KRC422V	N9	KRA322V	P9	50	100	100	62	-	5	5	0.3	5	0.25	100	100		
KRC401E	NA	KRA301E	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7	ESM	
KRC402E	NB	KRA302E	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403E	NC	KRA303E	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404E	ND	KRA304E	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405E	NE	KRA305E	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406E	NF	KRA306E	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407E	NH	KRA307E	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408E	NI	KRA308E	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC409E	NJ	KRA309E	PJ	50	100	100	70	140	5	10	0.3	10	0.5	47	22		
KRC410E	NK	KRA310E	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411E	NM	KRA311E	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC412E	NN	KRA312E	PN	50	100	100	120	-	5	1	0.3	10	0.5	100	-		
KRC413E	NO	KRA313E	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-		
KRC414E	NP	KRA314E	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416E	N2	KRA316E	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417E	N4	KRA317E	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418E	N5	KRA318E	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419E	N6	KRA319E	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		
KRC420E	N7	KRA320E	P7	50	100	100	24	-	5	10	0.3	10	0.5	10	4.7		
KRC421E	N8	KRA321E	P8	50	100	100	33	-	5	5	0.3	10	0.5	47	10		
KRC422E	N9	KRA322E	P9	50	100	100	62	-	5	5	0.3	5	0.25	100	100		

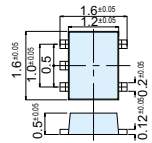
■ Small Signal General Purpose BRTs

Type No.				Max. Ratings			hFE				V <sub>CE(sat)</sub> (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)
NPN	Mark	PNP	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	P <sub>C</sub> (mW)	Min.	Typ.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	Max.	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)				
														KRC401	NA	KRA301	PA
KRC402	NB	KRA302	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403	NC	KRA303	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404	ND	KRA304	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405	NE	KRA305	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406	NF	KRA306	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407	NH	KRA307	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408	NI	KRA308	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC409	NJ	KRA309	PJ	50	100	100	70	140	5	10	0.3	10	0.5	47	22		
KRC410	NK	KRA310	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411	NM	KRA311	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC412	NN	KRA312	PN	50	100	100	120	-	5	1	0.3	10	0.5	100	-		
KRC413	NO	KRA313	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-		
KRC414	NP	KRA314	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416	N2	KRA316	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417	N4	KRA317	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418	N5	KRA318	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419	N6	KRA319	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		
KRC420	N7	KRA320	P7	50	100	100	24	-	5	10	0.3	10	0.5	10	4.7		
KRC421	N8	KRA321	P8	50	100	100	33	-	5	5	0.3	10	0.5	47	10		
KRC422	N9	KRA322	P9	50	100	100	62	-	5	5	0.3	5	0.25	100	100		
KRC101S	NA	KRA101S	PA	50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	SOT-23	
KRC102S	NB	KRA102S	PB	50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC103S	NC	KRA103S	PC	50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC104S	ND	KRA104S	PD	50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC105S	NE	KRA105S	PE	50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC106S	NF	KRA106S	PF	50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC107S	NH	KRA107S	PH	50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC108S	NI	KRA108S	PI	50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC109S	NJ	KRA109S	PJ	50	100	200	70	140	5	10	0.3	10	0.5	47	22		
KRC110S	NK	KRA110S	PK	50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC111S	NM	KRA111S	PM	50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC112S	NN	KRA112S	PN	50	100	200	120	-	5	1	0.3	10	0.5	100	-		
KRC113S	NO	KRA113S	PO	50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC114S	NP	KRA114S	PP	50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC116S	N2	KRA116S	P2	50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC117S	N4	KRA117S	P4	50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC118S	N5	KRA118S	P5	50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC119S	N6	KRA119S	P6	50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRC120S	N7	KRA120S	P7	50	100	200	24	-	5	10	0.3	10	0.5	10	4.7		
KRC121S	N8	KRA121S	P8	50	100	200	33	-	5	5	0.3	10	0.5	47	10		
KRC122S	N9	KRA122S	P9	50	100	200	62	-	5	5	0.3	5	0.25	100	100		

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)	
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	IB (mA)					
KRA551E	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	
KRA552E	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10	
KRA553E	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22	
KRA554E	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47	
KRA555E	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47	
KRA556E	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47	
KRA557E	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47	
KRA558E	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47	
KRA559E	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22	
KRA560E	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-	
KRA561E	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-	
KRA562E	PN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-	
KRA563E	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-	
KRA564E	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-	
KRA566E	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10	
KRA567E	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2	
KRA568E	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10	
KRA569E	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10	
KRA570E	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7	
KRA571E	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10	
KRA572E	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100	
KRC651E	NA			50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7
KRC652E	NB			50	100	200	50	80	5	10	0.3	10	0.5	10	10
KRC653E	NC	50		100	200	70	120	5	10	0.3	10	0.5	22	22	
KRC654E	ND	50		100	200	80	200	5	10	0.3	10	0.5	47	47	
KRC655E	NE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47	
KRC656E	NF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47	
KRC657E	NH	50		100	200	80	150	5	10	0.3	10	0.5	10	47	
KRC658E	NI	50		100	200	80	150	5	10	0.3	10	0.5	22	47	
KRC659E	NJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22	
KRC660E	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-	
KRC661E	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-	
KRC662E	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-	
KRC663E	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-	
KRC664E	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-	
KRC666E	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10	
KRC667E	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2	
KRC668E	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10	
KRC669E	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10	
KRC670E	N7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7	
KRC671E	N8		50	100	200	33	-	5	5	0.3	10	0.5	47	10	
KRC672E	N9		50	100	200	62	-	5	5	0.3	5	0.25	100	100	

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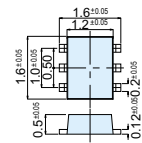


Note) Pd= Total Rating

■ Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.				
KRA721E	JA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA722E	JB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA723E	JC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA724E	JD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA725E	JE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA726E	JF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA727E	JH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA728E	JI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA729E	JJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA730E	JK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7
KRA731E	JM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA732E	JN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA733E	JO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA734E	JP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA736E	J2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA737E	J4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA738E	J5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA739E	J6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA740E	J7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA741E	J8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA742E	J9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC821E	YA			50	100	200	30	55	5	10	0.3	10	0.5	4.7
KRC822E	YB	50		100	200	50	80	5	10	0.3	10	0.5	10	10
KRC823E	YC	50		100	200	70	120	5	10	0.3	10	0.5	22	22
KRC824E	YD	50		100	200	80	200	5	10	0.3	10	0.5	47	47
KRC825E	YE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC826E	YF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC827E	YH	50		100	200	80	150	5	10	0.3	10	0.5	10	47
KRC828E	YI	50		100	200	80	150	5	10	0.3	10	0.5	22	47
KRC829E	YJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22
KRC830E	YK			50	100	200	120	-	5	1	0.3	10	0.5	4.7
KRC831E	YM		50	100	200	120	-	5	1	0.3	10	0.5	10	-
KRC832E	YN		50	100	200	120	-	5	1	0.3	10	0.5	100	-
KRC833E	YO		50	100	200	120	-	5	1	0.3	10	0.5	22	-
KRC834E	YP		50	100	200	120	-	5	1	0.3	10	0.5	47	-
KRC836E	Y2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC837E	Y4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC838E	Y5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC839E	Y6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC840E	Y7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC841E	Y8		50	100	200	33	-	5	5	0.3	10	0.5	47	10
KRC842E	Y9		50	100	200	62	-	5	5	0.3	5	0.25	100	100

TES6

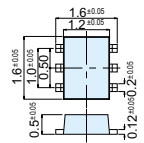


Note) Pd= Total Rating

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	IB (mA)				
KRA751E	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA752E	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA753E	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA754E	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA755E	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA756E	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA757E	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA758E	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA759E	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA760E	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-
KRA761E	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA762E	PN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA763E	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA764E	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA766E	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA767E	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA768E	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA769E	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA770E	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA771E	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA772E	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC851E	NA			50	100	200	30	55	5	10	0.3	10	0.5	4.7
KRC852E	NB	50		100	200	50	80	5	10	0.3	10	0.5	10	10
KRC853E	NC	50		100	200	70	120	5	10	0.3	10	0.5	22	22
KRC854E	ND	50		100	200	80	200	5	10	0.3	10	0.5	47	47
KRC855E	NE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC856E	NF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC857E	NH	50		100	200	80	150	5	10	0.3	10	0.5	10	47
KRC858E	NI	50		100	200	80	150	5	10	0.3	10	0.5	22	47
KRC859E	NJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22
KRC860E	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-
KRC861E	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-
KRC862E	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-
KRC863E	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-
KRC864E	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-
KRC866E	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC867E	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC868E	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC869E	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC870E	N7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC871E	N8		50	100	200	33	-	5	5	0.3	10	0.5	47	10
KRC872E	N9		50	100	200	62	-	5	5	0.3	5	0.25	100	100

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Note) Pd= Total Rating

■ Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE				VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)	
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)					
KRA551U	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	USV		
KRA552U	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10			
KRA553U	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22			
KRA554U	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47			
KRA555U	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47			
KRA556U	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47			
KRA557U	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47			
KRA558U	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47			
KRA559U	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22			
KRA560U	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-			
KRA561U	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-			
KRA562U	PN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-			
KRA563U	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-			
KRA564U	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-			
KRA566U	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10			
KRA567U	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2			
KRA568U	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10			
KRA569U	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10			
KRA570U	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7			
KRA571U	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10			
KRA572U	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100			
KRC651U	NA			50	100	200	30	55	5	10	0.3	10	0.5	4.7			4.7
KRC652U	NB			50	100	200	50	80	5	10	0.3	10	0.5	10			10
KRC653U	NC	50		100	200	70	120	5	10	0.3	10	0.5	22	22			
KRC654U	ND	50		100	200	80	200	5	10	0.3	10	0.5	47	47			
KRC655U	NE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47			
KRC656U	NF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47			
KRC657U	NH	50		100	200	80	150	5	10	0.3	10	0.5	10	47			
KRC658U	NI	50		100	200	80	150	5	10	0.3	10	0.5	22	47			
KRC659U	NJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22			
KRC660U	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-			
KRC661U	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-			
KRC662U	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-			
KRC663U	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-			
KRC664U	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-			
KRC666U	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10			
KRC667U	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2			
KRC668U	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10			
KRC669U	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10			
KRC670U	N7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7			
KRC671U	N8		50	100	200	33	-	5	5	0.3	10	0.5	47	10			
KRC672U	N9		50	100	200	62	-	5	5	0.3	5	0.25	100	100			

Note) Pd= Total Rating

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE				VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)				
KRA721U	JA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	US6	
KRA722U	JB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA723U	JC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA724U	JD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA725U	JE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA726U	JF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA727U	JH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA728U	JI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA729U	JJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22		
KRA730U	JK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7		
KRA731U	JM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA732U	JN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-		
KRA733U	JO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA734U	JP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA736U	J2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10		
KRA737U	J4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA738U	J5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA739U	J6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRA740U	J7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7		
KRA741U	J8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10		
KRA742U	J9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100		
KRC821U	YA			50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	
KRC822U	YB			50	100	200	50	80	5	10	0.3	10	0.5	10	10	
KRC823U	YC	50		100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC824U	YD	50		100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC825U	YE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC826U	YF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC827U	YH	50		100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC828U	YI	50		100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC829U	YJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22		
KRC830U	YK			50	100	200	120	-	5	1	0.3	10	0.5	4.7	-	
KRC831U	YM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC832U	YN		50	100	200	120	-	5	1	0.3	10	0.5	100	-		
KRC833U	YO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC834U	YP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC836U	Y2		50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC837U	Y4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC838U	Y5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC839U	Y6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRC840U	Y7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7		
KRC841U	Y8		50	100	200	33	-	5	5	0.3	10	0.5	47	10		
KRC842U	Y9		50	100	200	62	-	5	5	0.3	5	0.25	100	100		

Note) Pd= Total Rating

■ Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE				VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)				
KRA751U	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	US6	
KRA752U	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA753U	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA754U	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA755U	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA756U	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA757U	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA758U	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA759U	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22		
KRA760U	PK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7		
KRA761U	PM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA762U	PN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-		
KRA763U	PO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA764U	PP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA766U	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10		
KRA767U	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA768U	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA769U	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRA770U	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7		
KRA771U	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10		
KRA772U	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100		
KRC851U	NA			50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	
KRC852U	NB			50	100	200	50	80	5	10	0.3	10	0.5	10	10	
KRC853U	NC	50		100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC854U	ND	50		100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC855U	NE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC856U	NF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC857U	NH	50		100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC858U	NI	50		100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC859U	NJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22		
KRC860U	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC861U	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC862U	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-		
KRC863U	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC864U	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC866U	N2			50	100	200	33	-	5	5	0.3	10	0.5	1	10	
KRC867U	N4	50		100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC868U	N5	50		100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC869U	N6	50		100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRC870U	N7	50		100	200	24	-	5	10	0.3	10	0.5	10	4.7		
KRC871U	N8	50		100	200	33	-	5	5	0.3	10	0.5	47	10		
KRC872U	N9	50		100	200	62	-	5	5	0.3	5	0.25	100	100		

Note) Pd= Total Rating



Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE								VCE(sat) (V)								R1 (kΩ)		R2 (kΩ)		Package	Outline (Unit: mm)
			VCEO (V)		IC (mA)		Pd (mW)	Min.		Typ.		VCE (V)		IC (mA)		Max.		IC (mA)		IB (mA)		Q1	Q2	Q1	Q2		
			Q1	Q2	Q1	Q2		Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2								
KRX101E	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	TESV	
KRX102E	BM		50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47		
KRX103E	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX104E	BN		50	-50	100	-100	200	80	30	200	-	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	4.7	47	10		
KRX105E	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	TES6	
KRX201E	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10		
KRX202E	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX203E	BC		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	47		
KRX204E	BD		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	2.2	2.2	47	47		
KRX205E	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	USV	
KRX101U	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10		
KRX102U	BM		50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47		
KRX103U	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX104U	BN		50	-50	100	-100	200	80	30	200	-	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	4.7	47	10		
KRX105U	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	US6	
KRX201U	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10		
KRX202U	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22		
KRX203U	BC		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	47		
KRX204U	BD		50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	2.2	2.2	47	47		

Note) Pd= Total Rating

Small Signal Audio Muting BRTs

mType No.	NPN	Mark	Internal circuit (Top view)	Max. Ratings			hFE				VCE(sat) (V)			R1 (kΩ)	Ron (Ω)	Package	Outline (Unit: mm)
				VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.	Typ.		
KRC681T	MQ	□		20	300	900▲	200	1200	2	4	0.1	30	3	2.2	-	TSV	
KRC682T	MR	□		20	300	900▲	200	1200	2	4	0.1	30	3	4.7	-		
KRC683T	MS	□		20	300	900▲	200	1200	2	4	0.1	30	3	5.6	-		
KRC684T	MT	□		20	300	900▲	200	1200	2	4	0.1	30	3	6.8	-		
KRC685T	MU	□		20	300	900▲	200	1200	2	4	0.1	30	3	10	-		
KRC686T	MV	□		20	300	900▲	200	1200	2	4	0.1	30	3	22	-		
KRC881T	MQ	□		20	300	900▲	200	1200	2	4	0.1	30	3	2.2	-	TS6	
KRC882T	MR	□		20	300	900▲	200	1200	2	4	0.1	30	3	4.7	-		
KRC883T	MS	□		20	300	900▲	200	1200	2	4	0.1	30	3	5.6	-		
KRC884T	MT	□		20	300	900▲	200	1200	2	4	0.1	30	3	6.8	-		
KRC885T	MU	□		20	300	900▲	200	1200	2	4	0.1	30	3	10	-		
KRC886T	MV	□		20	300	900▲	200	1200	2	4	0.1	30	3	22	-		
KRC231S	NW		-	15	600	200	200	800	5	50	0.08	50	2.5	2.2	0.6	SOT-23	
KRC232S	NY		-	15	600	200	200	800	5	50	0.08	50	2.5	5.6	0.6		
KRC233S	NZ		-	15	600	200	200	800	5	50	0.08	50	2.5	10	0.6		
KRC234S	NNA		-	15	600	200	200	800	5	50	0.08	50	2.5	4.7	0.6		
KRC235S	NNB		-	15	600	200	200	800	5	50	0.08	50	2.5	6.8	0.6		
KRC281S	MQ	□		20	300	200	200	1200	2	4	0.1	30	3	2.2	1		
KRC282S	MR	□		20	300	200	200	1200	2	4	0.1	30	3	4.7	1		
KRC283S	MS	□		20	300	200	200	1200	2	4	0.1	30	3	5.6	1		
KRC284S	MT	□		20	300	200	200	1200	2	4	0.1	30	3	6.8	1		
KRC285S	MU	□		20	300	200	200	1200	2	4	0.1	30	3	10	1		
KRC286S	MV	□		20	300	200	200	1200	2	4	0.1	30	3	22	1		

Note) ▲ : Package Mounted on a Ceramic Board (600mm<sup>2</sup> × 0.8mm)

Small Signal High Current BRTs

Type No.		Internal circuit (Top view)	Max. Ratings			G1			Vo(ON) (V)			R1 (k $\Omega$ )	R2 (k $\Omega$ )	Package	Outline (Unit: mm)		
NPN	Mark		Vo (V)	Io (mA)	Pd (mW)	Min.	Vo (V)	Io (mA)	Max.	Io (mA)	Ii (mA)						
KRA521T	PA		-50	-800	900▲	33	-5	-50	-0.3	-50	-2.5	1	1	TSV			
KRA522T	PB		-50	-800	900▲	39	-5	-50	-0.3	-50	-2.5	2.2	2.2				
KRA523T	PC		-50	-800	900▲	47	-5	-50	-0.3	-50	-2.5	4.7	4.7				
KRA524T	PD		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	10	10				
KRA525T	PE		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	1	10				
KRA526T	PF		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	2.2	10				
KRC641T	NA		50	800	900▲	33	5	50	0.3	50	2.5	1	1			TS6	
KRC642T	NB		50	800	900▲	39	5	50	0.3	50	2.5	2.2	2.2				
KRC643T	NC		50	800	900▲	47	5	50	0.3	50	2.5	4.7	4.7				
KRC644T	ND		50	800	900▲	56	5	50	0.3	50	2.5	10	10				
KRC645T	NE		50	800	900▲	56	5	50	0.3	50	2.5	1	10				
KRC646T	NF		50	800	900▲	56	5	50	0.3	50	2.5	2.2	10				
KRA721T	PA		-50	-800	900▲	33	-5	-50	-0.3	-50	-2.5	1	1	TS6			
KRA722T	PB		-50	-800	900▲	39	-5	-50	-0.3	-50	-2.5	2.2	2.2				
KRA723T	PC		-50	-800	900▲	47	-5	-50	-0.3	-50	-2.5	4.7	4.7				
KRA724T	PD		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	10	10				
KRA725T	PE		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	1	10				
KRA726T	PF		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	2.2	10				
KRC841T	NA		50	800	900▲	33	5	50	0.3	50	2.5	1	1			TS6	
KRC842T	NB		50	800	900▲	39	5	50	0.3	50	2.5	2.2	2.2				
KRC843T	NC		50	800	900▲	47	5	50	0.3	50	2.5	4.7	4.7				
KRC844T	ND		50	800	900▲	56	5	50	0.3	50	2.5	10	10				
KRC845T	NE		50	800	900▲	56	5	50	0.3	50	2.5	1	10				
KRC846T	NF		50	800	900▲	56	5	50	0.3	50	2.5	2.2	10				

Note ▲ : Package Mounted on a Ceramic Board (600mm<sup>2</sup> × 0.8mm)

Type No.		PNP		Max. Ratings			G1			Vo(ON) (V)			R1 (k $\Omega$ )	R2 (k $\Omega$ )	Package	Outline (Unit: mm)
NPN	Mark	Mark	Vo (V)	Io (mA)	Pd (mW)	Min.	Vo (V)	Io (mA)	Max.	Io (mA)	Ii (mA)					
KRC241S	NQ	KRA221S	PQ	50	800	200	33	5	50	0.3	50	2.5	1	1		
KRC242S	NR	KRA222S	PR	50	800	200	39	5	50	0.3	50	2.5	2.2	2.2		
KRC243S	NS	KRA223S	PS	50	800	200	47	5	50	0.3	50	2.5	4.7	4.7		
KRC244S	NT	KRA224S	PT	50	800	200	56	5	50	0.3	50	2.5	10	10		
KRC245S	NU	KRA225S	PU	50	800	200	56	5	50	0.3	50	2.5	1	10		
KRC246S	NV	KRA226S	PV	50	800	200	56	5	50	0.3	50	2.5	2.2	10		

■ Small Signal General Purpose BRTs

Type No.		Max. Ratings			hFE				VCE(sat) (V)			R1	R2	Package	Outline (Unit: mm : Max.)
NPN	PNP	VCE0 (V)	IC (mA)	Pc (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	(kΩ)	(kΩ)		
KRC101M	KRA101M	50	100	400	30	55	5	10	0.3	10	0.5	4.7	4.7	TO-92M	
KRC102M	KRA102M	50	100	400	50	80	5	10	0.3	10	0.5	10	10		
KRC103M	KRA103M	50	100	400	70	120	5	10	0.3	10	0.5	22	22		
KRC104M	KRA104M	50	100	400	80	200	5	10	0.3	10	0.5	47	47		
KRC105M	KRA105M	50	100	400	80	200	5	10	0.3	10	0.5	2.2	47		
KRC106M	KRA106M	50	100	400	80	200	5	10	0.3	10	0.5	4.7	47		
KRC107M	KRA107M	50	100	400	80	150	5	10	0.3	10	0.5	10	47		
KRC108M	KRA108M	50	100	400	80	150	5	10	0.3	10	0.5	22	47		
KRC109M	KRA109M	50	100	400	70	140	5	10	0.3	10	0.5	47	22		
KRC110M	KRA110M	50	100	400	120	-	5	1	0.3	10	0.5	4.7	-		
KRC111M	KRA111M	50	100	400	120	-	5	1	0.3	10	0.5	10	-		
KRC112M	KRA112M	50	100	400	120	-	5	1	0.3	10	0.5	100	-		
KRC113M	KRA113M	50	100	400	120	-	5	1	0.3	10	0.5	22	-		
KRC114M	KRA114M	50	100	400	120	-	5	1	0.3	10	0.5	47	-		
KRC116M	KRA116M	50	100	400	33	-	5	5	0.3	10	0.5	1	10		
KRC117M	KRA117M	50	100	400	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC118M	KRA118M	50	100	400	33	-	5	10	0.3	10	0.5	2.2	10		
KRC119M	KRA119M	50	100	400	30	-	5	10	0.3	10	0.5	4.7	10		
KRC120M	KRA120M	50	100	400	24	-	5	10	0.3	10	0.5	10	4.7		
KRC121M	KRA121M	50	100	400	33	-	5	5	0.3	10	0.5	47	10		
KRC122M	KRA122M	50	100	400	62	-	5	5	0.3	5	0.25	100	100		


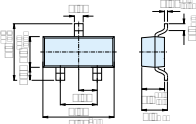
■ Small Signal Audio Muting BRTs

Type No.		Max. Ratings			hFE				VCE(sat) (V)			R1	Ron	Package	Outline (Unit: mm : Max.)
NPN	PNP	VCE0 (V)	IC (mA)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	(kΩ)	(Ω)		
KRC231M	-	15	600	400	200	800	5	50	0.08	50	2.5	2.2	0.6	TO-92M	
KRC232M	-	15	600	400	200	800	5	50	0.08	50	2.5	5.6	0.6		
KRC233M	-	15	600	400	200	800	5	50	0.08	50	2.5	10	0.6		
KRC234M	-	15	600	400	200	800	5	50	0.08	50	2.5	4.7	0.6		
KRC235M	-	15	600	400	200	800	5	50	0.08	50	2.5	6.8	0.6		
KRC281M	-	20	300	400	200	1200	2	4	0.1	30	3	2.2	1		
KRC282M	-	20	300	400	200	1200	2	4	0.1	30	3	4.7	1		
KRC283M	-	20	300	400	200	1200	2	4	0.1	30	3	5.6	1		
KRC284M	-	20	300	400	200	1200	2	4	0.1	30	3	6.8	1		
KRC285M	-	20	300	400	200	1200	2	4	0.1	30	3	10	1		
KRC286M	-	20	300	400	200	1200	2	4	0.1	30	3	22	1		

■ Small Signal High Current BRTs

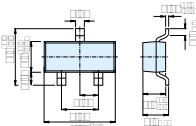
Type No.		Max. Ratings			hFE			VCE(sat) (V)			R1	Ron	Package	Outline (Unit: mm : Max.)
NPN	PNP	VCE0 (V)	IC (mA)	Pc (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	(kΩ)	(Ω)		
KRC241M	KRA221M	50	800	400	33	5	50	0.3	50	2.5	1	1	TO-92M	
KRC242M	KRA222M	50	800	400	39	5	50	0.3	50	2.5	2.2	2.2		
KRC243M	KRA223M	50	800	400	47	5	50	0.3	50	2.5	4.7	4.7		
KRC244M	KRA224M	50	800	400	56	5	50	0.3	50	2.5	10	10		
KRC245M	KRA225M	50	800	400	56	5	50	0.3	50	2.5	1	10		
KRC246M	KRA226M	50	800	400	56	5	50	0.3	50	2.5	2.2	10		

■ Small Signal General Purpose Transistors

Type No.	Mark	Complementary	Mark	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)
				VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)	IC (mA)		
BC858W	3□	BC848W	1□	-30	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	USM	
BC857W	3□	BC847W	1□	-45	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC856W	3□	BC846W	1□	-65	-100	100	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC848W	1□	BC858W	3□	30	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC847W	1□	BC857W	3□	45	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC846W	1□	BC856W	3□	65	100	100	110	450	5	2	0.25	10	0.5	-	300	5	10		
BCW29	C1	BCW31	D1	-20	-100	※350	110	220	-5	-2	-0.25	-10	-0.5	-	-	-	-	SOT-23	
BCW30	C2	BCW32	D2	-20	-100	※350	200	450	-5	-2	-0.25	-10	-0.5	-	-	-	-		
BC858	3□	BC848	1□	-30	-100	※350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC859	4□	BC849	2□	-30	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BCW69	H1	BCW71	K1	-45	-100	200	120	260	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BCW70	H2	BCW72	K2	-45	-100	200	215	500	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC857	3□	BC847	1□	-45	-100	※350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC860	4□	BC850	2□	-45	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC807	5□	BC817	6□	-45	-800	※350	100	630	-1	-100	-0.7	-500	-50	80	-	5	10		
BCW68	D□	-	-	-45	-800	※350	100	400	-1	-100	-0.3	-100	-10	100	-	-10	-80		
BCW89	H5	BCV71	K7	-60	-100	200	120	260	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BC856	3□	BC846	1□	-65	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10		
BCW31	D1	BCW29	C1	20	100	※350	110	220	5	2	0.25	10	0.5	-	-	-	-		
BCW32	D2	BCW30	C2	20	100	※350	200	450	5	2	0.25	10	0.5	-	-	-	-		
BC848	1□	BC858	3□	30	100	※350	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC849	2□	BC859	4□	30	100	※350	200	800	5	2	0.25	10	0.5	-	300	5	10		
BCW71	K1	BCW69	H1	45	100	200	110	220	5	2	0.25	10	0.5	-	300	5	10		
BCW72	K2	BCW70	H2	45	100	200	200	450	5	2	0.25	10	0.5	-	300	5	10		
BC847	1□	BC857	3□	45	100	※350	110	800	5	2	0.25	10	0.5	-	300	5	10		
BC850	2□	BC860	4□	45	100	※350	200	800	5	2	0.25	10	0.5	-	300	5	10		
BC817	6□	BC807	5□	45	800	※350	100	630	1	100	0.7	500	50	100	-	5	10		
BCX19	U1	-	-	45	500	200	100	600	1	100	0.62	500	50	-	200	5	10		
BCV71	K7	BCW89	H5	60	100	200	110	220	5	2	0.25	10	0.5	-	300	5	10		
BCV72	K8	-	-	60	100	200	200	450	5	2	0.25	10	0.5	-	300	5	10		
BC846	1□	BC856	3□	65	100	※350	110	450	5	2	0.25	10	0.5	-	300	5	10		
MMBTA55	AMX	MMBTA05	ACX	-60	-500	※350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100		
MMBTA56	ANX	MMBTA06	ADX	-80	-500	※350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100		
MMBTA05	ACX	MMBTA55	AMX	60	500	※350	100	-	1	10	0.25	100	10	80	-	1	10		
MMBTA06	ADX	MMBTA56	ANX	80	500	※350	100	-	1	10	0.25	100	10	100	-	2	10		
KN3905S	ZSA	KN3903S	ZRA	-40	-200	※350	30	-	-1	-0.1	-0.25	-10	-1	-	200	-20	-10		
KN3906S	ZAA	KN3904S	ZCA	-40	-200	※350	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10		
KN2907S	ZDA	KN2222S	ZBA	-40	-600	※350	35	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50		
KN4402S	ZVA	KN4400S	ZTA	-40	-600	※350	30	-	-1	-1	-0.4	-150	-15	200	-	-10	-20		
KN4403S	ZWA	KN4401S	ZUA	-40	-600	※350	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20		
KN2907AS	ZHA	KN2222AS	ZGA	-60	-600	※350	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50		
KN2222S	ZBA	KN2907S	ZDA	30	600	※350	35	-	10	0.1	0.4	150	15	250	-	20	20		
KN3903S	ZRA	KN3905S	ZSA	40	200	※350	20	-	1	0.1	0.2	10	1	-	300	20	10		
KN3904S	ZCA	KN3906S	ZAA	40	200	※350	40	-	1	0.1	0.2	10	1	-	300	20	10		
KN2222AS	ZGA	KN2907AS	ZHA	40	600	※350	35	-	10	0.1	0.3	150	15	300	-	20	20		
KN4400S	ZTA	KN4402S	ZVA	40	600	※350	20	-	1	1	0.4	150	15	200	-	10	20		
KN4401S	ZUA	KN4403S	ZWA	40	600	※350	20	-	1	0.1	0.4	150	15	250	-	10	20		

Note) ※ : Package Mounted on 99.5% Alumina 10 8 0.6mm, □ : hFE Grade

■ Small Signal Low Noise Transistors

Type No.	Mark	Complementary	Mark	Max. Ratings			hFE		VCE(sat) (V)			NF (dB)					Package	Outline (Unit: mm)	
				VCEO (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Max.	VCE (V)	IC (mA)	Rg (kΩ)			f (kHz)
BSS63	T6	-	-	-100	-100	200	30◆	-1	-10	-0.25	-25	-2.5	-	-	-	-	-	SOT-23	
BSS64	U6	-	-	80	100	200	60◇	1	1	0.15	4	0.4	-	-	-	-			

Note) ◆ : Min., ◇ : Typ

Small Signal Darlington Transistors

Type No.	Complementary		Max. Ratings			hFE				VCE(sat) (V)			fT (MHz)			Package	Outline (Unit: mm)
	Mark	Mark	VCE0 (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	VCE (V)	IC (mA)			
MMBTA63	AGX	-	-30△	-500	350	5000	-5	-10	-1.5	-100	-0.1	125	-5	-10	SOT-23		
MMBTA64	AFX	-	-30△	-500	350	10000	-5	-10	-1.5	-100	-0.1	125	-5	-10			
MMBTA517	UA	-	30	400	350	30000	2	100	1	100	1	220	2	100			
MMBTA13	AIX	-	30△	500	350	5000	5	10	1.5	100	0.1	125	5	10			
MMBTA14	AHX	-	30△	500	350	5000	5	10	1.5	100	0.1	125	5	10			

Note) △ : VCEs

Small Signal High Voltage Transistors

Type No.	Complementary		Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)	
	Mark	Mark	VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)			IC (mA)
2N5400S	ZN	-	-120	-600	※350	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10	SOT-23	
2N5401S	ZE	-	-150	-600	※350	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5550S	ZP	-	140	600	※350	60	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551S	ZF	-	160	600	※350	80	250	5	10	0.15	10	1	100	-	300	10	10		
MMBTA93	YW	MMBTA43	ABX	-200	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-20	-10		
MMBTA92	YV	MMBTA42	AAX	-300	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-20	-10		
MMBTA43	ABX	MMBTA93	YW	200	500	※350	40	-	10	10	0.5	20	2	50	-	20	10		
MMBTA42	AAX	MMBTA92	YV	300	500	※350	40	-	10	10	0.5	20	2	50	-	20	10		

Note) ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm, @ : Mounted on Ceramic Substrate (250mm×0.8)

Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)			Cob (pF)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm : Max.)		
	Mark	VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	f (MHz)			Min.	
BFQ31	S2	15	100	200	20	-	1	3	0.4	10	1	600	-	-	10	4	1.7	10	6	60	SOT-23	
BF599	G2	25	25	200	40	-	10	7	-	-	-	550	-	10	7	0.35◇	10	-	-	-		
BFS20	G1	25	25	200	40	-	10	7	-	-	-	275	550	-	10	7	0.35◇	10	-	-		

Note) ◇ : Typ.

Small Signal Switching Transistors

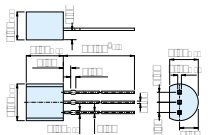
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	Mark	Mark	VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Max.	Max.	Max.	Max.	Max.	Max.			
2N3906U	ZA	2N3904U	ZC	-40	-200	100	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	USM	
2N3904U	ZC	2N3906U	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907U	ZD	KTN2222U	ZB	-40	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AU	ZH	KTN2222AU	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369AU	ZK	-	-	15	500	100	120	1	10	0.25	10	1	500	12	15	-	-	13	-		
KTN2369U	ZI	-	-	15	500	100	120	1	10	0.25	10	1	500	12	-	-	-	-	-		
KTN2222U	ZB	KTN2907U	ZD	30	600	100	300	10	150	0.3	150	15	300	-	-	10	25	225	60		
KTN2222AU	ZG	KTN2907AU	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
2N3906S	ZA	2N3904S	ZC	-40	-200	※350	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	35	225	75		
2N3904S	ZC	2N3906S	ZA	40	200	※350	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907S	ZD	KTN2222S	ZB	-40	-600	※350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AS	ZH	KTN2222AS	ZG	-60	-600	※350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369S	ZI	-	-	15	500	※350	120	1	10	0.25	10	1	-	12	-	-	-	-	-		
KTN2369AS	ZK	-	-	15	500	※350	120	1	10	0.25	10	1	-	12	15	-	-	13	-		
KTN2222S	ZB	KN2907S	ZDA	30	600	※350	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
KTN2222AS	ZG	KTN2907AS	ZH	40	600	※350	300	10	150	0.3	150	15	300	-	-	10	25	225	60		

Note) ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm

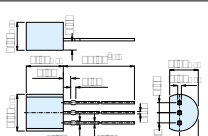
Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)
		VCE0 (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	VCE (V)	IC (mA)			
MJD117	MJD112	-100	-2A	20W	1000	-3	-2A	-2	-2A	-8	25	-10	-750	DPAK		
MJD112	MJD117	100	2A	20W	1000	3	2A	2	2A	8	25	10	750			

■ Small Signal General Purpose Transistors

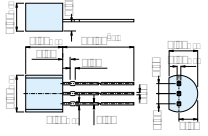
Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)	
		VCE0 (V)	Ic (mA)	Pc (mW)	Min.	Max.	VCE (V)	Ic (mA)	Ib (mA)	Max.	Ic (mA)	Ib (mA)	fr (MHz)		VCE (V)			Ic (mA)
													Min.	Typ.				
BC309	BC239	-20	-50	625	180	800	-5	-2	-0.2	-10	-0.5	-	200	-5	-10	TO-92		
BC308	BC238	-25	-100	625	120	800	-5	-2	-0.6	-100	-5	-	200	-5	-10			
BC328	BC338	-25	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10			
BC558	BC548	-30	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10			
BC559	BC549	-30	-100	625	110	800	-5	-2	-0.6	-100	-5	-	300	-5	-10			
BC307	BC237	-45	-100	625	120	460	-5	-2	-0.6	-100	-5	-	200	-5	-10			
BC557	BC547	-45	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10			
BC560	BC550	-45	-100	625	110	800	-5	-2	-0.6	-100	-5	-	300	-5	-10			
BC327	BC337	-45	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10			
BC638	BC637	-60	-500	625	40	160	-2	-150	-0.5	-500	-50	-	200	-2	-50			
BC556	BC546	-65	-100	625	110	450	-5	-2	-0.65	-100	-5	-	150	-5	-10			
BC239	BC309	20	50	625	180	800	5	2	0.2	10	0.5	150	250	5	10			
BC238	BC308	20	100	625	120	800	5	2	0.6	100	5	150	250	5	10			
BC338	BC328	25	800	625	100	630	1	100	0.7	500	50	-	100	5	10			
BC548	BC558	30	100	625	110	800	5	2	0.6	100	5	-	150	5	10			
BC549	BC559	30	100	625	110	800	5	2	0.6	100	5	-	300	5	10			
BC237	BC307	45	100	625	120	460	5	2	0.6	100	5	150	250	5	10			
BC547	BC557	45	100	625	110	800	5	2	0.6	100	5	-	150	5	10			
BC550	BC560	45	100	625	110	800	5	2	0.6	100	5	-	300	5	10			
BC337	BC327	45	800	625	100	630	1	100	0.7	500	50	-	100	5	10			
BC637	BC638	60	500	625	40	160	2	150	0.5	500	50	-	200	2	50			
BC546	BC556	65	100	625	110	450	5	2	0.6	100	5	-	150	5	10			
MPS8550	MPS8050	-25	-1.5A	625	85	300	-1	-100	-0.5	-800	-80	100	200	-10	-50			
MPSA55	MPSA05	-60	-500	625	100	-	-1	-10	-0.25	-100	-10	50	-	-1	-100			
MPS751	MPS651	-60	-1A	625	60	200	-2	-50	-0.7	-500	-50	-	150	-10	-50			
MPSA56	MPSA06	-80	-500	625	100	-	-1	-10	-0.25	-100	-10	50	-	-1	-100			
MPS8050	MPS8550	25	1.5A	625	85	300	1	100	0.5	800	80	100	190	10	50			
MPS651	MPS751	60	1A	625	100	320	2	50	0.5	500	50	-	150	10	50			
MPSA06	MPSA56	80	500	625	100	-	1	10	0.25	100	10	100	-	2	10			
MPSA05	MPSA55	60	500	625	100	-	1	10	0.25	100	10	80	-	1	10			
KN3905	KN3903	-40	-200	625	30	-	-1	-0.1	-0.25	-10	-1	-	200	-20	-10			
KN3906	KN3904	-40	-200	625	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10			
KN2907	KN2222	-40	-600	625	35	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50			
KN4402	KN4400	-40	-600	625	30	-	-1	-1	-0.4	-150	-15	200	-	-10	-20			
KN4403	KN4401	-40	-600	625	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20			
KN2907A	KN2222A	-60	-600	625	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50			
KN2222	KN2907	30	600	625	35	-	10	0.1	0.4	150	15	250	-	20	20			
KN3903	KN3905	40	200	625	20	-	1	0.1	0.2	10	1	-	300	20	10			
KN3904	KN3906	40	200	625	40	-	1	0.1	0.2	10	1	-	300	20	10			
KN2222A	KN2907A	40	600	625	35	-	10	0.1	0.3	150	15	300	-	20	20			
KN4400	KN4402	40	600	625	20	-	1	1	0.4	150	15	200	-	10	20			
KN4401	KN4403	40	600	625	20	-	1	0.1	0.4	150	15	250	-	10	20			
KTC9012	KTC9013	-30	-500	625	64	246	-1	-50	-0.25	-100	-10	150	-	-6	-20			
KTC8550	KTC8050	-30	-800	625	100	300	-1	-50	-0.5	-500	-50	-	120	-5	-10			
KTC9015	KTC9014	-50	-150	625	60	600	-5	-1	-0.3	-100	-10	60	-	-10	-1			
KTC9013	KTC9012	30	500	625	64	246	1	50	0.25	100	10	140	-	6	20			
KTC8050	KTC8550	30	800	625	100	300	1	50	0.5	500	20	-	120	5	10			
KTC9014	KTC9015	50	150	625	60	1000	5	1	0.25	100	10	60	-	10	1			

■ Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Cob( pF)		NF (dB)		Gp (dB)	Package	Outline (Unit: mm)	
	VCE0 (V)	Ic (mA)	Pc (mW)	Min.	Max.	VCE (V)	Ic (mA)	Ib (mA)	Max.	Ic (mA)	Ib (mA)	Min.	Typ.	Max.	VCE (V)	Ic (mA)	Max.	VCB (V)				f (MHz)
KTC9016	30	20	625	40	198	5	1	-	-	-	260	-	-	6	1	-	-	4	100k	15	TO-92	
KTC9018	30	20	625	40	198	5	1	-	-	-	500	800	-	10	8	-	-	4	100k	15		
KTC9011	30	50	625	40	198	5	1	0.4	10	1	100	-	400	10	1	2.0◇	10	-	-	-		

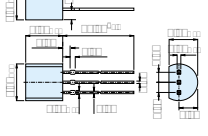
Note) ◇: Typ.

## Small Signal Darlington Transistors

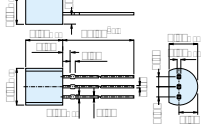
Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)
		VCE0 (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	VCE (V)	IC (mA)		
MPSA62	-	-20 $\Delta$	-500	625	20,000	-5	-10	-1	-10	-0.01	125	-5	-10	TO-92	
MPSA63	MPSA13	-30 $\Delta$	-500	625	5,000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA64	MPSA14	-30 $\Delta$	-500	625	10,000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA77	MPSA27	-60 $\Delta$	-500	625	10,000	-5	-100	-1.5	-100	-0.1	-	-	-		
MPSA13	MPSA63	30 $\Delta$	500	625	5,000	5	10	1.5	100	0.1	125	5	10		
BC517	-	30 $\Delta$	500	625	30k	2	100	1	100	1	220 $\diamond$	2	100		
MPSA14	MPSA64	30 $\Delta$	500	625	10,000	5	10	1.5	100	0.1	125	5	10		
MPSA27	MPSA77	60 $\Delta$	500	625	10,000	5	100	1.5	100	0.1	-	-	-		

Note)  $\Delta$ : VCEs,  $\diamond$ : Typ.

## Small Signal High Voltage Transistors

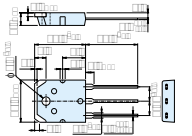
Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)		
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.			VCE (V)	IC (mA)
BF423	BF422	-250	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10	TO-92	
BF421	BF420	-300	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10		
BF422	BF423	250	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10		
BF420	BF421	300	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10		
MPSA93	MPSA43	-200	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MPSA92	MPSA42	-300	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MPSA94	MPSA44	-400	-300	625	50	200	-10	-10	-0.5	-10	-1	-	-	-	-			
MPSA43	MPSA93	200	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA42	MPSA92	300	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA45	-	350	300	625	50	200	10	10	0.5	10	1	-	-	-	-			
MPSA44	MPSA94	400	300	625	50	200	10	10	0.5	10	1	-	-	-	-			
2N5400	-	-120	-600	625	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10		
2N5401	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5401C	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5550	-	140	600	625	60	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551C	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		

## Small Signal Switching Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)	ton (ns)	toff (ns)	td (ns)	tr (ns)	tstg (ns)	tf (ns)	Package	Outline (Unit: mm)
		VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)									
2N3906	2N3904	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	TO-92	
2N3906C	2N3904C	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75		
2N3904	2N3906	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
2N3904C	2N3906C	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTH2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-		
KTH2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-		
KTN2907	KTN2222	-40	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907A	KTN2222A	-60	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-		
KTN2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-		
KTN2222	KTN2907	30	600	625	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
KTN2222A	KTN2907A	40	600	625	300	10	150	0.3	150	15	300	-	-	10	25	225	60		

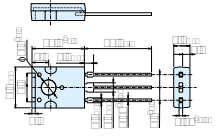
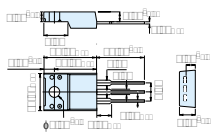
Note)  $\diamond$ : Typ.

## General Purpose Power Transistors

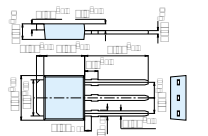
Type No.	Complementary	Max. Ratings				hFE			VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)		
		VCE0 (V)	IC (A)	PC $\star$ (W)	PC $\star\star$ (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)	IC (mA)
TIP34C	TIP33C	-100	-10	-	80	55	160	-4	-2A	-1	-4A	-400	-	20	-12	-500	TO-3P(N)	
TIP36C	TIP35C	-100	-25	-	125	55	160	-5	-1.5A	-1.8	-15A	-1.5A	3	-	-5	-1A		
TIP33C	TIP34C	100	10	-	80	55	160	4	2A	1	4A	400	-	20	12	500		
TIP35C	TIP36C	100	25	-	125	55	160	5	1.5A	1.8	15A	1.5A	3	-	5	1A		

Note)  $\star$ : Ta=25°C,  $\star\star$ : Tc=25°C

■ Switching Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)	ton (μs)		tstg (μs)		tf (μs)		Package	Outline (Unit: mm)
		VCE0 (V)	IC (A)	PC (W)	Min.	Max.	VCE (V)	IC (A)	Max.	IC (A)	IB (mA)		Min.	Typ.	Max.	Typ.	Max.	Typ.		
MJE13003	-	400	1.5	20	8	40	2	0.5	0.5	0.5	100	4	-	1.1	-	4	-	0.7	TO-126	
MJE13005F	-	400	4	30	19	36	5	1	0.5	1	200	4	-	0.8	-	4	-	0.9	TO-220IS	
MJE13007F	-	400	8	40	19	36	5	2	1	2	400	4	-	1.6	-	3	-	0.7		

■ Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			Package	Outline (Unit: mm)	
		VCEs (V)	IC (A)	PC <sub>☆</sub> (W)	Min.	Typ.	Max.	VCE (V)	IC (A)	Max.	IC (A)			IB (mA)
MJD117L	MJD112L	-100	-2	20	1000	12000	-	-3	-2	-2	-2	-8	IPAK	
MJD112L	MJD147117L	100	2	20	1000	12000	-	3	2	2	2	8		

Note) ☆ : Tc=25 °C















Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
UMA9N	Rohm	KRA552U	UMT2222A	Rohm	KTN2222AU	UN521N	Matsushita	KRC406	UN4215	Matsushita	KRC111M
UMA10N	Rohm	KRA566U	UMT2907A	Rohm	KTN2907AU	UN521T	Matsushita	KRC408	UN4216	Matsushita	KRC110M
UMA11N	Rohm	KRA556U	UMT3904	Rohm	2N3904U	UN2110	Matsushita	KRA114S	UN4217	Matsushita	KRC113M
UMB1N	Rohm	KRA753U	UMT3906	Rohm	2N3906U	UN2111	Matsushita	KRA102S	UN4221	Matsushita	KRA242M
UMB2N	Rohm	KRA754U	UMW1N	Rohm	KTC601U	UN2112	Matsushita	KRA103S	UN4222	Matsushita	KRA243M
UMB3N	Rohm	KRA760U	UMX1N	Rohm	KTC801U	UN2113	Matsushita	KRA104S	UN4223	Matsushita	KRA244M
UMB4N	Rohm	KRA761U	UMX2N	Rohm	KTC811U	UN2114	Matsushita	KRA107S	UN4224	Matsushita	KRA246M
UMB6N	Rohm	KRA724U	UMX3N	Rohm	KTC812U	UN2115	Matsushita	KRA111S	UN5110	Matsushita	KRA314
UMB8N	Rohm	KRA731U	UMX4N	Rohm	KTC813U	UN2116	Matsushita	KRA110S	UN5111	Matsushita	KRA302
UMB9N	Rohm	KRA757U	UMY1N	Rohm	KTX201U	UN2117	Matsushita	KRA113S	UN5112	Matsushita	KRA303
UMB10N	Rohm	KRA755U	UMZ1N	Rohm	KTX101U	UN2121	Matsushita	KRA222S	UN5113	Matsushita	KRA304
UMB11N	Rohm	KRA752U	UMZ2N	Rohm	KTX102U	UN2122	Matsushita	KRA223S	UN5114	Matsushita	KRA307
UMC1N	Rohm	KRX105U	UN211E	Matsushita	KRA109S	UN2123	Matsushita	KRA224S	UN5115	Matsushita	KRA311
UMC2N	Rohm	KRX103U	UN211F	Matsushita	KRA119S	UN2124	Matsushita	KRA226S	UN5116	Matsushita	KRA310
UMC3N	Rohm	KRX101U	UN211H	Matsushita	KRA118S	UN2210	Matsushita	KRC114S	UN5117	Matsushita	KRA313
UMC4N	Rohm	KRX102U	UN211L	Matsushita	KRA101S	UN2211	Matsushita	KRC102S	UN5210	Matsushita	KRC414
UMC5N	Rohm	KRX104U	UN211M	Matsushita	KRA105S	UN2212	Matsushita	KRC103S	UN5211	Matsushita	KRC402
UMG1N	Rohm	KRC653U	UN211N	Matsushita	KRA106S	UN2213	Matsushita	KRC104S	UN5212	Matsushita	KRC403
UMG2N	Rohm	KRC654U	UN221E	Matsushita	KRC109S	UN2214	Matsushita	KRC107S	UN5213	Matsushita	KRC404
UMG3N	Rohm	KRC660U	UN221F	Matsushita	KRC119S	UN2215	Matsushita	KRC111S	UN5214	Matsushita	KRC407
UMG4N	Rohm	KRC661U	UN221H	Matsushita	KRC118S	UN2216	Matsushita	KRC110S	UN5215	Matsushita	KRC411
UMG5N	Rohm	KRC657U	UN221L	Matsushita	KRC101S	UN2217	Matsushita	KRC113S	UN5216	Matsushita	KRC410
UMG6N	Rohm	KRC664U	UN221M	Matsushita	KRC105S	UN2221	Matsushita	KRC242S	UN5217	Matsushita	KRC413
UMG8N	Rohm	KRC669U	UN221N	Matsushita	KRC106S	UN2222	Matsushita	KRC243S	XP05501	Matsushita	KTC812U
UMG9N	Rohm	KRC652U	UN411E	Matsushita	KRA109M	UN2223	Matsushita	KRC244S	XP05601	Matsushita	KTX102U
UMG10N	Rohm	KRC666U	UN411L	Matsushita	KRA101M	UN2224	Matsushita	KRC246S	XP06111	Matsushita	KRA722U
UMG11N	Rohm	KRC655U	UN421E	Matsushita	KRC109M	UN4110	Matsushita	KRA114M	XP06112	Matsushita	KRA723U
UMH1N	Rohm	KRC853U	UN421F	Matsushita	KRC119M	UN4111	Matsushita	KRA102M	XP06113	Matsushita	KRA724U
UMH2N	Rohm	KRC854U	UN421H	Matsushita	KRC118M	UN4112	Matsushita	KRA103M	XP06114	Matsushita	KRA727U
UMH3N	Rohm	KRC860U	UN421L	Matsushita	KRC101M	UN4113	Matsushita	KRA104M	XP06115	Matsushita	KRA731U
UMH4N	Rohm	KRC861U	UN421M	Matsushita	KRC105M	UN4114	Matsushita	KRA107M	XP06116	Matsushita	KRA730U
UMH5N	Rohm	KRC823U	UN421N	Matsushita	KRC106M	UN4115	Matsushita	KRA111M	XP06210	Matsushita	KRC834U
UMH6N	Rohm	KRC824U	UN511E	Matsushita	KRA309	UN4116	Matsushita	KRA110M	XP06211	Matsushita	KRC822U
UMH7N	Rohm	KRC830U	UN511F	Matsushita	KRA319	UN4117	Matsushita	KRA113M	XP06212	Matsushita	KRC823U
UMH8N	Rohm	KRC831U	UN511H	Matsushita	KRA318	UN4117	Matsushita	KRA113M	XP06213	Matsushita	KRC824U
UMH9N	Rohm	KRC857U	UN511L	Matsushita	KRA301	UN4121	Matsushita	KRA222M	XP06214	Matsushita	KRC827U
UMH10N	Rohm	KRC855U	UN511M	Matsushita	KRA305	UN4122	Matsushita	KRA223M	XP06215	Matsushita	KRC831U
UMH11N	Rohm	KRC852U	UN511N	Matsushita	KRA306	UN4123	Matsushita	KRA224M	XP06216	Matsushita	KRC830U
UMH14N	Rohm	KRC834U	UN511T	Matsushita	KRA308	UN4124	Matsushita	KRA226M	XP06401	Matsushita	KTA711U
UML1N	Rohm	KTX301U	UN521E	Matsushita	KRC409	UN4210	Matsushita	KRC114M	XP06501	Matsushita	KTC811U
UML2N	Rohm	KTX401U	UN521F	Matsushita	KRC419	UN4211	Matsushita	KRC102M			
UMS1N	Rohm	KTA501U	UN521H	Matsushita	KRC418	UN4212	Matsushita	KRC103M			
UMT1N	Rohm	KTA701U	UN521L	Matsushita	KRC401	UN4213	Matsushita	KRC104M			
UMT2N	Rohm	KTA711U	UN521M	Matsushita	KRC405	UN4214	Matsushita	KRC107M			

■ Small Signal Switching Diodes

Type No.		Mark	Max. Ratings						VF (V)		VF2 (V)		VF3 (V)		IR (μA)		CT (pF)			trr (ns)		Package	Outline (Unit: mm)	
			V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>FM</sub> (mA)	I <sub>O</sub> (mA)	I <sub>FSM</sub> (A)	P <sub>D</sub> (mW)	Typ.	I <sub>F</sub> (mA)	Typ.	I <sub>F</sub> (mA)	Typ.	Max.	Max.	V <sub>R</sub> (V)	f (MHz)	Max.	V <sub>R</sub> (V)	f (MHz)	Max.			I <sub>F</sub> (mA)
KDS160E		UF	85	80	200	100	2	-	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	ESC	
KDS135		JA	300	250	300	100	2	150	-	-	-	-	1	1.2	100	0.2	250	3	0	1	100	30	USC	
KDS160		UF	85	80	300	100	2	-	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	USC	
KDS120V		A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	VSM	
KDS121V		B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	VSM	
KDS120E		A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	ESM	
KDS121E		B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	ESM	
KDS120		A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	USM	
KDS121		B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	USM	
KDS122		C3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	USM	
KDS135S		JA	300	250	300	100	2	150	-	-	-	-	1	1.2	100	0.2	250	3	0	1	100	30	SOT-23	
KDS181		A3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	SOT-23	
KDS184		B3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23	
KDS187		D3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	SOT-23	
KDS190		E3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	SOT-23	
KDS193		F3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23	
KDS196		G3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23	
KDS226		C3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23	

Note) ◇: Typ.

■ Small Signal Band Switch Diodes

Type No.		Mark	Max Ratings		VF (V)		IR (μA)		VR (V)		CT (pF)				rs (Ω)				Package	Outline (Unit: mm)
			V <sub>R</sub> (V)	I <sub>F</sub> (mA)	Max.	I <sub>F</sub> (mA)	Max.	V <sub>R</sub> (V)	Min.	I <sub>R</sub> (μA)	Min.	I <sub>R</sub> (μA)	Typ.	Max.	V <sub>R</sub> (V)	f (MHz)	Typ.	Max.		
KDS114E		UD	30	100	0.85	2	0.1	15	30	1	0.7	1.2	6	1	0.5	0.9	2	100	ESC	
KDS114		UD	30	100	0.85	2	0.1	15	30	1	0.7	1.2	6	1	0.5	0.9	2	100	USC	
KDS112V		BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	VSM	
KDS112E		BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	ESM	
KDS112		BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	
KDS113		T3	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	
KDS115		R3	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	



■ VHF/UHF Band Attenuator Diodes

Type No.	Mark	UE	Max. Ratings		VF(V)		VR(V)		CT(pf)			rs(Ω)			Package	Outline (Unit: mm)
			VR	IF	IF	IF	VR	IR	VR	f	IF	f	IF	f		
			(V)	(mA)	(mA)	(mA)	(V)	(μA)	(V)	(MHz)	(mA)	(MHz)	(mA)	(MHz)		
KDV175E		UE	50	50	0.95	50	50	10	0.25	50	1	7	10	100	ESC	
KDV175		UE	50	50	0.95	50	50	10	0.25	50	1	7	10	100	USC	
KDV174		M3	50	50	0.95	50	50	10	0.25	50	1	7	10	100	USM	
KDV173		M3	50	50	0.95	50	50	10	0.25	50	1	7	10	100	SOT-23	

■ AFC Application for FM (Varactor Diodes)

Type No.	Mark	J3	Max. Ratings		CT(pf)				K★		Q			Package	Outline (Unit: mm)
			VR(V)	Min.	Max.	VR(V)	f(MHz)	Min.	Max.	Min.	Typ.	VR(V)	f(MHz)		
			(V)			(V)	(MHz)					(V)	(MHz)		
KDS2236S		J3	15	7	14	4	1	0.21	0.5	70	120	4	50	SOT-23	

Note) ★:  $K = [CT(VR=2V, f=1MHz) - CT(VR=4V, f=1MHz)] / CT(VR=4V, f=1MHz)$

■ FM Tuning (Varactor Diodes)

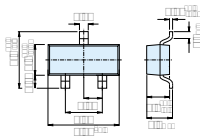
Type No.	Mark	UN <th colspan="2">Max. Ratings</th> <th colspan="4">CA(pf)</th> <th colspan="4">CB(pf)</th> <th colspan="2">CA/CB</th> <th colspan="4">rs(Ω)</th> <th rowspan="3">Package</th> <th rowspan="3">Outline (Unit: mm : Max.)</th>	Max. Ratings		CA(pf)				CB(pf)				CA/CB		rs(Ω)				Package	Outline (Unit: mm : Max.)		
			VR(V)	IR(μA)	Min.	Max.	VR(V)	f(MHz)	Min.	Max.	VR(V)	f(MHz)	Min.	Max.	Typ.	Max.	VR(V)	f(MHz)			C(pf)	
			(V)	(μA)			(V)	(MHz)			(V)	(MHz)					(V)	(MHz)			(pf)	
KDV1472		UN	16	16	10	30.16	40.99	1	1	6.2	9.2	4.5	1	5	-	0.8	1	1.5	100	-	USC	
KDV804S		K3	15	15	10	42	47.5	2	1	24	28.8	8	1	1.65	1.8	0.3	0.4	-	100	38	SOT-23	
KDV1430		L3	18	16	10	69.14	77.43	2	1	15.44	20.1	9	1	3.7	5	-	0.5	2	70	-		
KDV1470		S3	16	16	10	65.8	74.2	1	1	-	-	5	1	5	-	0.43	0.5	1.5	100	-		
KDV1471		W3	16	16	10	30.16	40.99	1	1	6.2	9.2	4.5	1	5	-	0.8	1	1.5	100	-		

■ TV Tuning (Varactor Diodes)

Type No.	Mark	UO <th colspan="2">Max. Ratings</th> <th colspan="4">CA(pf)</th> <th colspan="4">CB(pf)</th> <th colspan="2">CA/CB</th> <th colspan="4">rs(Ω)</th> <th rowspan="3">Package</th> <th rowspan="3">Outline (Unit: mm : Max.)</th>	Max. Ratings		CA(pf)				CB(pf)				CA/CB		rs(Ω)				Package	Outline (Unit: mm : Max.)		
			VR(V)	IR(μA)	Min.	Max.	VR(V)	f(MHz)	Min.	Max.	VR(V)	f(MHz)	Min.	Max.	Typ.	Max.	VR(V)	f(MHz)			C(pf)	
			(V)	(μA)			(V)	(MHz)			(V)	(MHz)					(V)	(MHz)			(pf)	
KDV214E		UO	30	30	1	14.16	16.25	2	1	2.11	2.43	25	1	5.9	7.15	0.4	0.55	5	470	-	ESC	
KDV262E		VQ	34	34	1	33	38	2	1	2.6	3	25	1	12	-	0.6	0.8	5	470	-		
KDV269E		VR	34	34	1	29	34	2	1	2.5	2.9	25	1	11	-	0.55	0.7	5	470	-		
KDV287E		UP	30	30	1	4.2	5.7	2	1	0.53	0.68	25	1	7.3	-	-	2.3	5	470	-		
KDV214		UO	30	30	1	14.16	16.25	2	1	2.11	2.43	25	1	5.9	7.15	0.4	0.55	5	470	-	USC	
KDV262		VQ	34	34	1	33	38	2	1	2.6	3	25	1	12	-	0.6	0.8	5	470	-		
KDV269		VR	34	34	1	29	34	2	1	2.5	2.9	25	1	11	-	0.55	0.7	5	470	-		
KDV287		UP	30	30	1	4.2	5.7	2	1	0.53	0.68	25	1	7.3	-	-	2.3	5	470	-		



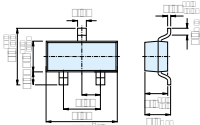
■ 200mW Zener Diodes

Type No.	Max. Ratings		Vz (V)			Zz(Ω)		Zzk(Ω)		Ir(μA)		Package	Outline (Unit: mm)	
	Grade	Mark	Pd (mW)	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.			VR (V)
Z02W2.0V	-	2A	200	1.85	2.15	5	100	5	1000	0.5	120	1	SOT-23	
	X	2AX		1.85	2.05	5	100	5	1000	0.5	120	1		
	Z	2AZ		1.95	2.15	5	100	5	1000	0.5	120	1		
Z02W2.2V	-	2B		2.05	2.38	5	100	5	1000	0.5	120	1		
	X	2BX		2.05	2.26	5	100	5	1000	0.5	120	1		
	Z	2BZ		2.16	2.38	5	100	5	1000	0.5	120	1		
Z02W2.4V	-	2C		2.28	2.6	5	100	5	1000	0.5	120	1		
	X	2CX		2.28	2.5	5	100	5	1000	0.5	120	1		
	Z	2CZ		2.4	2.6	5	100	5	1000	0.5	120	1		
Z02W2.7V	-	2D		2.5	2.9	5	110	5	1000	0.5	120	1		
	X	2DX		2.5	2.75	5	110	5	1000	0.5	120	1		
	Z	2DZ		2.65	2.9	5	110	5	1000	0.5	120	1		
Z02W3.0V	-	30		2.8	3.2	5	120	5	1000	0.5	50	1		
	X	30X		2.8	3.05	5	120	5	1000	0.5	50	1		
	Z	30Z		2.95	3.2	5	120	5	1000	0.5	50	1		
Z02W3.3V	-	33		3.1	3.5	5	130	5	1000	0.5	20	1		
	X	33X		3.1	3.35	5	130	5	1000	0.5	20	1		
	Z	33Z		3.25	3.5	5	130	5	1000	0.5	20	1		
Z02W3.6V	-	36		3.4	3.8	5	130	5	1000	0.5	10	1		
	X	36X		3.4	3.65	5	130	5	1000	0.5	10	1		
	Z	36Z	3.55	3.8	5	130	5	1000	0.5	10	1			
Z02W3.9V	-	39	3.7	4.1	5	130	5	1000	0.5	10	1			
	X	39X	3.7	3.97	5	130	5	1000	0.5	10	1			
	Z	39Z	3.87	4.1	5	130	5	1000	0.5	10	1			
Z02W4.3V	-	43	4	4.5	5	130	5	1000	0.5	5	1			
	X	43X	4	4.23	5	130	5	1000	0.5	5	1			
	Y	43Y	4.13	4.35	5	130	5	1000	0.5	5	1			
Z02W4.7V	-	47	4.25	4.5	5	130	5	1000	0.5	5	1			
	X	47X	4.4	4.9	5	120	5	1000	0.5	5	1			
	Y	47Y	4.4	4.63	5	120	5	1000	0.5	5	1			
Z02W5.1V	-	51	4.53	4.76	5	120	5	1000	0.5	5	1			
	X	51X	4.66	4.9	5	120	5	1000	0.5	5	1			
	Y	51Y	4.8	5.4	5	70	5	1000	0.5	1	1.5			
Z02W5.6V	-	56	4.97	5.24	5	70	5	1000	0.5	1	1.5			
	X	56X	5.14	5.4	5	70	5	1000	0.5	1	1.5			
	Y	56Y	5.3	6	5	40	5	900	0.5	1	2.5			
Z02W6.2V	-	62	5.3	5.63	5	40	5	900	0.5	1	2.5			
	X	62X	5.43	5.81	5	40	5	900	0.5	1	2.5			
	Y	62Y	5.61	6	5	40	5	900	0.5	1	2.5			
Z02W6.8V	-	62	5.8	6.6	5	30	5	500	0.5	1	3			
	X	62X	5.8	6.2	5	30	5	500	0.5	1	3			
	Y	62Y	6	6.39	5	30	5	500	0.5	1	3			
Z02W7.5V	-	68	6.19	6.6	5	30	5	500	0.5	1	3			
	X	68X	6.4	7.2	5	25	5	150	0.5	0.5	5			
	Y	68Y	6.4	6.8	5	25	5	150	0.5	0.5	5			
Z02W8.2V	-	75	6.6	7.02	5	25	5	150	0.5	0.5	5			
	X	75X	6.82	7.2	5	25	5	150	0.5	0.5	5			
	Y	75Y	7	7.9	5	23	5	120	0.5	0.5	6			
Z02W9.1V	-	82	7	7.43	5	23	5	120	0.5	0.5	6			
	X	82X	7.23	7.66	5	23	5	120	0.5	0.5	6			
	Y	82Y	7.46	7.9	5	23	5	120	0.5	0.5	6			
Z02W10V	-	82	7.7	8.7	5	20	5	120	0.5	0.5	6.5			
	X	82X	7.7	8.16	5	20	5	120	0.5	0.5	6.5			
	Y	82Y	7.96	8.43	5	20	5	120	0.5	0.5	6.5			
Z02W11V	-	91	8.23	8.7	5	20	5	120	0.5	0.5	6.5			
	X	91X	8.5	9.6	5	18	5	120	0.5	0.5	7			
	Y	91Y	8.5	9	5	18	5	120	0.5	0.5	7			
Z02W12V	-	10	8.8	9.3	5	18	5	120	0.5	0.5	7			
	X	10X	9.1	9.6	5	18	5	120	0.5	0.5	7			
	Y	10Y	9.4	10.6	5	15	5	120	0.5	0.5	8			
Z02W13V	-	11	9.4	9.93	5	15	5	120	0.5	0.5	8			
	X	11X	9.73	10.26	5	15	5	120	0.5	0.5	8			
	Y	11Y	10.06	10.6	5	15	5	120	0.5	0.5	8			
Z02W12V	-	12	10.4	11.6	5	15	5	120	0.5	0.5	8.5			
	X	12X	10.4	10.98	5	15	5	120	0.5	0.5	8.5			
	Y	12Y	10.73	11.26	5	15	5	120	0.5	0.5	8.5			
Z02W13V	-	12	11.06	11.6	5	15	5	120	0.5	0.5	8.5			
	X	12X	11.4	12.6	5	15	5	110	0.5	0.5	9			
	Y	12Y	11.4	11.93	5	15	5	110	0.5	0.5	9			
Z02W13V	-	13	11.73	12.26	5	15	5	110	0.5	0.5	9			
	X	13X	12.06	12.6	5	15	5	110	0.5	0.5	9			
	Y	13Y	12.4	14.1	5	15	5	110	0.5	0.5	10			
Z02W13V	-	13	12.4	13.08	5	15	5	110	0.5	0.5	10			
	X	13X	12.88	13.57	5	15	5	110	0.5	0.5	10			
	Z	13Z	13.37	14.1	5	15	5	110	0.5	0.5	10			

■ 200mW Zener Diodes


Type No.	Max. Ratings		Vz (V)			Zz(Ω)		Zzk(Ω)		Ir(μA)		Package	Outline (Unit: mm)	
	Grade	Mark	Pd (mW)	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.			Vr (V)
Z02W15V	-	15	200	13.8	15.6	5	15	5	110	0.5	0.5	11		
	X	15X		13.8	14.63	5	15	5	110	0.5	0.5	11		
	Y	15Y		14.33	15.11	5	15	5	110	0.5	0.5	11		
	Z	15Z		14.81	15.6	5	15	5	110	0.5	0.5	11		
Z02W16V	-	16		15.3	17.1	5	18	5	150	0.5	0.5	12		
	X	16X		15.3	16.1	5	18	5	150	0.5	0.5	12		
	Y	16Y		15.8	16.6	5	18	5	150	0.5	0.5	12		
	Z	16Z		16.3	17.1	5	18	5	150	0.5	0.5	12		
Z02W18V	-	18		16.8	19.1	5	20	5	150	0.5	0.5	14		
	X	18X		16.8	17.76	5	20	5	150	0.5	0.5	14		
	Y	18Y		17.46	18.43	5	20	5	150	0.5	0.5	14		
	Z	18Z		18.13	19.1	5	20	5	150	0.5	0.5	14		
Z02W20V	-	20	18.8	21.2	5	25	5	200	0.5	0.5	15			
	X	20X	18.8	19.78	5	25	5	200	0.5	0.5	15			
	Y	20Y	19.48	20.46	5	25	5	200	0.5	0.5	15			
	Z	20Z	20.16	21.2	5	25	5	200	0.5	0.5	15			
Z02W22V	-	22	20.8	23.3	5	30	5	200	0.5	0.5	17			
	X	22X	20.8	21.88	5	30	5	200	0.5	0.5	17			
	Y	22Y	21.48	22.56	5	30	5	200	0.5	0.5	17			
	Z	22Z	22.16	23.3	5	30	5	200	0.5	0.5	17			
Z02W24V	-	24	22.8	25.6	5	40	5	200	0.5	0.5	19			
	X	24X	22.8	24.11	5	40	5	200	0.5	0.5	19			
	Y	24Y	23.61	24.92	5	40	5	200	0.5	0.5	19			
	Z	24Z	24.42	25.6	5	40	5	200	0.5	0.5	19			

■ 300mW Zener Diodes

Type No.	Mark	Pd(MAX) (mW) ※	Zener Voltage Vz (±5%)		Zz Iz=IzT Max (Ω)	Zzk Iz=0.25mA Max (Ω)	Max Ir(μA)		Package	Outline (Unit: mm)
			Nominal *	Test Current IzT (mA)				Vr(V)		
MMBZ5221B	18A	300	2.4	20	30	1200	100	1	SOT-23	
MMBZ5222B	18B		2.5	20	30	1250	100	1		
MMBZ5223B	18C		2.7	20	30	1300	75	1		
MMBZ5224B	18D		2.8	20	30	1400	75	1		
MMBZ5225B	18E		3	20	29	1600	50	1		
MMBZ5226B	8A		3.3	20	28	1600	25	1		
MMBZ5227B	8B		3.6	20	24	1700	15	1		
MMBZ5228B	8C		3.9	20	23	1900	10	1		
MMBZ5229B	8D		4.3	20	22	2000	5	1		
MMBZ5230B	8E		4.7	20	19	1900	5	2		
MMBZ5231B	8F		5.1	20	17	1600	5	2		
MMBZ5232B	8G		5.6	20	11	1600	5	3		
MMBZ5233B	8H		6	20	7	1600	5	3.5		
MMBZ5234B	8J		6.2	20	7	1000	5	4		
MMBZ5235B	8K		6.8	20	5	750	3	5		
MMBZ5236B	8L		7.5	20	6	500	3	6		
MMBZ5237B	8M		8.2	20	8	500	3	6.5		
MMBZ5238B	8N		8.7	20	8	600	3	6.5		
MMBZ5239B	8P		9.1	20	10	600	3	7		
MMBZ5240B	8Q		10	20	17	600	3	8		
MMBZ5241B	8R		11	20	22	600	2	8.4		
MMBZ5242B	8S		12	20	30	600	1	9.1		
MMBZ5243B	8T		13	9.5	13	600	0.5	9.9		
MMBZ5244B	8U		14	9	15	600	0.1	10		
MMBZ5245B	8V		15	8.5	16	600	0.1	11		
MMBZ5246B	8W		16	7.8	17	600	0.1	12		
MMBZ5247B	8X		17	7.4	19	600	0.1	13		
MMBZ5248B	8Y		18	7	21	600	0.1	14		
MMBZ5249B	8Z		19	6.6	23	600	0.1	14		
MMBZ5250B	81A		20	6.2	25	600	0.1	15		
MMBZ5251B	81B		22	5.6	29	600	0.1	17		
MMBZ5252B	81C		24	5.2	33	600	0.1	18		

Note) \* : Zener Voltage is measured with a pulse test current (Iz) applied at an ambient temperature of 25 °C, ※ : Package mounted on 99.5% alumina 10 × 8 × 0.6mm

■ 5W Zener Diodes(Surge Absorber)

Type No.	Max. Ratings Pd (W)	Vz (V)			Zz(Ω)		Ir(μA)		Package	Outline (Unit: mm)
		Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Vr (V)		
Z5W27V	5	24	30	10	30	10	10	22	DO-218	

■ Small Signal Schottky Barrier Diodes

Type No.	Mark	Max. Ratings						V <sub>F</sub> (V)		I <sub>r</sub> (μA)		C <sub>T</sub> (pF)			Package	Outline (Unit: mm)
		V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>FM</sub> (mA)	I <sub>O</sub> (mA)	I <sub>FSM</sub> (A)	P <sub>d</sub> (mW)	Max.	I <sub>r</sub> (mA)	Max.	V <sub>R</sub> (V)	Typ.	V <sub>R</sub> (V)	f(MHz)		
KDR367E	US	15	10	200	100	1	150 ☆	0.5	100	20	10	20	0	1	ESC	
KDR368E	U4	20	20	200	100	1	150 ☆	0.5	100	20	10	20	10	1		
KDR377E	UV	40	40	150	30	0.2	150 ☆	0.55	30	20	40	6	1	1		
KDR728E	UT	30	30	150	30	0.2	150 ☆	0.55	30	300	30	6.5	1	1		
KDR357	UL	45	40	200	100	1	200 ☆	0.55	100	5	40	30	0	1	USC	
KDR367	US	15	10	200	100	1	200 ☆	0.5	100	20	10	20	0	1		
KDR368	U4	20	20	200	100	1	150 ☆	0.5	100	20	10	20	10	1		
KDR377	UV	40	40	150	30	0.2	200 ☆	0.55	30	20	40	6	1	1		
KDR412	U3	40	20	-	0.5	3	-	0.5	500	30	10	20	10	1		
KDR728	UT	30	30	150	30	0.2	200 ☆	0.55	30	300	30	6.5	1	1		
KDR729	UM	30	30	300	200	1	200 ☆	0.55	200	50	30	50	0	1		
KDR784	UU	30	30	300	100	1	200 ☆	0.55	100	15	30	40	1	1		
KDR331V	UW	15	10	100	50	1	100	0.5	50	20	10	13	0	1	VSM	
KDR732V	UZ	-	30	-	70	2	-	0.55	70	5	15	3	10	1		
KDR331E	UW	15	10	100	50	1	100	0.5	50	20	10	13	0	1	ESM	
KDR378E	X3	-	10	-	100	1	100	0.5	100	20	10	14	0	1		
KDR732E	UZ	-	30	-	70	2	-	0.55	70	5	15	3	10	1		
KDR105	DL	-	50	-	100	2	-	0.55	100	10	25	7.7	10	1	USM	
KDR322	UL	45	40	300	100	-	100	0.6	100	5	40	18	0	1		
KDR331	UW	15	10	100	50	1	100	0.5	50	20	10	13	0	1		
KDR378	X3	-	10	-	100	1	100	0.5	100	20	10	14	0	1		
KDR393	R9	-	40	-	100	1	-	0.6	100	5	10	20	0	1		
KDR411	U3	40	20	-	500	3	-	0.5	500	30	10	20	10	1		
KDR731	UX	-	30	-	70	2	-	0.55	70	5	15	5	10	1		
KDR732	UZ	-	30	-	70	2	-	0.55	70	5	15	3	10	1		
KDR521T	T2	-	20	-	1A	3A	900 ▲	0.45	1000	200	20	-	-	-	TSM	
KDR105S	DL	-	50	-	100	2	-	0.55	100	10	25	7.7	10	1	SOT-23	
KDR393S	R9	-	40	-	100	1	-	0.6	100	5	40	20	0	1		
KDR400S	DJ	-	40	-	500	3	-	0.55	500	50	25	25	10	1		
KDR411S	U3	40	20	-	500	3	-	0.5	500	30	10	20	10	1		
KDR505S	DM	-	50	-	500	5	-	0.55	500	20	25	22	10	1		
KDR701S	DK	-	30	-	700	5	-	0.55	700	80	30	190	0	1		
KDR721S	MF	-	30	-	200	1	-	0.55	200	50	30	13	10	1		
KDR731S	UX	-	30	-	70	2	-	0.55	70	5	15	5	10	1		

Note) ☆ : Mounted on a glass epoxy circuit board of 20×20mm, ▲ : Mounted on a ceramic Board (600mm<sup>2</sup> × 0.8mm)

■ Ultra Fast Recovery Diodes

Type No.			Max. Ratings			VFM (V)		IRR (μA)		trr (ns)			Package	Outline (Unit: mm)
			VRRM (V)	IO (A)	IFSM (A) (60Hz)	Max.	IFM (A)	Max.	VR(V)	Max.	IF(mA)	IR (mA)		
SMAU1D		U1D	200	1	33	0.98	1	10	VR=VRRM	50	100	200	SMA	
SMAU2D		U2D	200	2	55	0.98	2	10	VR=VRRM	50	100	200		
* SMAU1G		U1G	400	1	33	1.3	1	10	VR=VRRM	50	100	200		
* SMAU2G		U2G	400	2	55	1.3	2	10	VR=VRRM	50	100	200		
* SMAU1J		U1J	600	1	33	1.7	1	10	VR=VRRM	75	100	200		
* SMAU2J		U2J	600	2	55	1.7	2	10	VR=VRRM	75	100	200		

Note) \* : Under development

■ Power Schottky Barrier Diodes

Type No.			Max. Ratings			VFM (V)		IRR (mA)		Package	Outline (Unit: mm)
			VRRM (V)	IO (A)	IFSM (A) (60Hz)	Max.	IFM (A)	Max.	VR(V)		
SMAB13		B13	30	1	40	0.42	1	1.0	VR=VRRM	SMA	
SMAB33		B33	30	3	70	0.45	3	2.0	VR=VRRM		
SMAB14		B14	40	1	40	0.5	1	1.0	VR=VRRM		
SMAB34		B34	40	3	70	0.52	3	2.0	VR=VRRM		
* SMAB16		B16	60	1	30	0.58	1	1.0	VR=VRRM		
* SMAB36		B36	60	3	70	0.6	1	2.0	VR=VRRM		

Note) \* : Under development

■ AFC Application for FM (Varactor Diodes)

Type No.	Max. Ratings VR (V)	CT (pF)				K *		Q				Package	Outline (Unit: mm)
		Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Min.	Typ.	VR (V)	f (MHz)		
KDS2236M	15	7	14	4	1	0.21	0.5	70	120	4	50	TO-92M	

Note) \* :  $K = [CT(VR=2V, f=1MHz) - CT(VR=4V, f=1MHz)] / CT(VR=4V, f=1MHz)$

■ AM Tuning (Varactor Diodes)

Type No.	Max. Ratings VR (V)	VR (V)	IR (μA)	C1v (pF)				C8v (pF)				C1v/C8v			Q		Package	Outline (Unit: mm)		
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Typ.	Max.	Min.	Typ.			VR (V)	f (MHz)
KDV149	15	15	10	435	540	1	1	21	30	8	1	16	19.5	22	200	450	1	1	TO-92M	

■ FM Tuning (Varactor Diodes)

Type No.	Max. Ratings VR (V)	VR (V)	IR (μA)	CA (pF)				CB (pF)				CA/CB		rs (Ω)			Package	Outline (Unit: mm)	
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Typ.	Max.	f (MHz)			C (pF)
KDV147	15	15	10	34	39.5	2	1	11.7	13.7	8	1	2.7	3.2	0.3	0.5	50	30	TO-92M	
KDV804M	15	15	10	42	47.5	2	1	24	28.8	8	1	1.65	1.8	0.3	0.4	100	38		

■ VCO for UHF Band Radio (Varactor Diodes)

Type No.	Max. Ratings VR (V)	VR (V)	IR (μA)	CA (pF)				CB (pF)				CA/CB		rs (Ω)			Package	Outline (Unit: mm)	
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Max.	VR (V)	f (MHz)			C (pF)
KDV251M	12	12	10	23	38	1.6	1	11	19	5	1	1.7	2.2	0.6	1	50		TO-92M	

■ Fast Recovery Diodes

Type No.	VRRM (V)	Max. Ratings			VFM (V)		trr (ns)			Rth(j-c) (°C/W)	Package	Outline (Unit: mm)
		Io (A)	IFSM (A) (50Hz)	IFSM (A) (60Hz)	Max.	IFM (A)	Max.	IF(A)	Ir (A)			
F1B2CAI	200	10	60	70	1.4	5	400	0.1	0.1	3.5	TO-220IS	
F1B2CCI	200	10	60	70	1.4	5	400	0.1	0.1	3.5		

■ Ultra Fast Recovery Rectifier Diodes

Type No.	Max. Ratings				VFM (V)		IRM (μA)		trr (ns)			Package	Outline (Unit: mm)
	VRM (V)	Io (A)	IFSM (A) (50Hz)	IFSM (A) (60Hz)	Max.	IFM (A)	Max.	VR(V)	Max.	IF(mA)	Ir (mA)		
* U5A2CI	200	5	50	60	0.98	5	10	VR=VRM	50	100	100	TO-220IS	
* U5A4CI	400	5	50	60	1.3	5	10	VR=VRM	50	100	100		
* U5A2CIC	200	5	25	30	0.98	2.5	10	VR=VRM	50	100	100	TO-220IS	
* U10A2CIC	200	10	50	60	0.98	5	10	VR=VRM	50	100	100		
* U5A4CIC	400	5	25	30	1.3	2.5	10	VR=VRM	50	100	100		
* U10A4CIC	400	10	50	60	1.3	5	10	VR=VRM	50	100	100		

Note) \* : Under development

■ Power Schottky Barrier Diodes

Type No.	Max. Ratings			V <sub>FM</sub> (V)		IRR <sub>M</sub> (mA) (V <sub>RRM</sub> =Rated)	trr(μs)			R <sub>th(c-f)</sub> (°C/W)	Package	Outline (Unit: mm : Max.)
	V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	I <sub>FSM</sub> (A)	Max. (T <sub>c</sub> =25 °C)	I <sub>FM</sub> (A)		Max.	I <sub>F</sub> (A)	di/dt(A/μs)			
	Max.											
B5A45VI		45	5	100	0.55	5	0.5	35	1	-20	4.5	
B5A60VI		60	5	100	0.55	5	0.5	35	1	-20	4.5	
B5A90VI		90	5	100	0.75	5	3	35	1	-20	4.5	
B10A45VI		45	10	150	0.58	10	0.5	35	1	-20	3	
B5A45VIC		45	5	70	0.55	2.5	0.5	35	1	-20	4	
B5A60VIC		60	5	70	0.55	2.5	0.5	35	1	-20	4	
B10A45VIC		45	10	100	0.55	5	0.5	35	1	-30	4	
B10A60VIC		60	10	100	0.58	5	0.5	35	1	-30	4	
B10A90VIC		90	10	100	0.75	5	3	35	1	-30	3.5	
B15A45VIC		45	15	150	0.58	7.5	0.5	35	1	-50	4	
B15A60VIC		60	15	150	0.58	7.5	0.5	35	1	-30	4	
B20A45VIC		45	20	250	0.58	10	2	35	1	-50	3.5	
B20A60VIC		60	20	250	0.58	10	2	35	1	-30	3.5	
B30A45VIC		45	30	350	0.6	15	3	35	1	-50	2.5	

■ Alternator Diodes

Type No.	Polarity	Max. Ratings					Package	Outline (Unit: mm : Max.)
		V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>FM</sub> (A)	R <sub>th</sub> (°C/W)	V <sub>FM</sub> (V)		
E30A2CS	+	200	30	350	1	1.2	MR	
E30A2CR	-	200	30	350	1	1.2		
E30A23VS	+	23 ±2	30	350	1	1.2		
E30A23VR	-	23 ±2	30	350	1	1.2		
E35A2CS	+	200	35	450	1	1.05		
E35A2CR	-	200	35	450	1	1.05		
E35A23VS	+	23 ±3	35	450	1	1.05		
E35A23VR	-	23 ±3	35	450	1	1.05		
E25A2CPS	+	200	25	250	1.13	1.18	H-PF	
E25A2CPR	-	200	25	250	1.13	1.18		
E30A2CPS	+	200	30	350	1	1.17		
E30A2CPR	-	200	30	350	1	1.17		
E30A23VPS	+	23 ±2	30	500	1	1.17		
E30A23VPR	-	23 ±2	30	500	1	1.17		
E30A37VPS	+	37 ±3	30	350	1	1.2		
E30A37VPR	-	37 ±3	30	350	1	1.2		
E30A27VS	+	27 ±3	30	350	1	1.17	B-PF	
E30A27VR	-	27 ±3	30	350	1	1.17		
E35A21VBS	+	21 ±2	35	300	0.8	1.1		
E35A21VBR	-	21 ±2	35	300	0.8	1.1		
E35A27VBS	+	27 ±3	35	300	0.8	1.1		
E35A27VBR	-	27 ±3	35	300	0.8	1.1		
E35A37VBS	+	37 ±3	35	300	0.8	1.15		
E35A37VBR	-	37 ±3	35	300	0.8	1.15		
E50A21VBS	+	21 ±2	50	380	0.6	1.05		
E50A21VBR	-	21 ±2	50	380	0.6	1.05		
E50A27VBS	+	27 ±3	50	380	0.6	1.05		
E50A27VBR	-	27 ±3	50	380	0.6	1.05		
E50A37VBS	+	37 ±3	50	380	0.6	1.1		
E50A37VBR	-	37 ±3	50	380	0.6	1.1		
E30A2CDS	+	200	30	300	1	1.2	PD	
E30A2CDR	-	200	30	300	1	1.2		
E35A2CDS	+	200	35	350	1	1.1		
E35A2CDR	-	200	35	350	1	1.1		
E35A23VDS	+	23 ±2	35	350	1	1.1		
E35A23VDR	-	23 ±2	35	350	1	1.1		



Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
02CZ2.0	Toshiba	Z02W2.0V	02DZ9.1	Toshiba	KDZ9.1V	DZD6.2	Sanyo	Z02W6.2V	MA3043	Matsushita	Z02W4.3V
02CZ2.2	Toshiba	Z02W2.2V	1S2836	NEC	KDS181	DZD6.8	Sanyo	Z02W6.8V	MA3047	Matsushita	Z02W4.7V
02CZ2.4	Toshiba	Z02W2.4V	1S2838	NEC	KDS184	DZD7.5	Sanyo	Z02W7.5V	MA3051	Matsushita	Z02W5.1V
02CZ2.7	Toshiba	Z02W2.7V	1SS123	NEC	KDS226	DZD8.2	Sanyo	Z02W8.2V	MA3056	Matsushita	Z02W5.6V
02CZ3.0	Toshiba	Z02W3.0V	1SS181	Toshiba	KDS181	DZD9.1	Sanyo	Z02W9.1V	MA3062	Matsushita	Z02W6.2V
02CZ3.3	Toshiba	Z02W3.3V	1SS184	Toshiba	KDS184	DZD10	Sanyo	Z02W10V	MA3068	Matsushita	Z02W6.8V
02CZ3.6	Toshiba	Z02W3.6V	1SS187	Toshiba	KDS187	DZD11	Sanyo	Z02W11V	MA3075	Matsushita	Z02W7.5V
02CZ3.9	Toshiba	Z02W3.9V	1SS190	Toshiba	KDS190	DZD12	Sanyo	Z02W12V	MA3082	Matsushita	Z02W8.2V
02CZ4.3	Toshiba	Z02W4.3V	1SS193	Toshiba	KDS193	DZD13	Sanyo	Z02W13V	MA3091	Matsushita	Z02W9.1V
02CZ4.7	Toshiba	Z02W4.7V	1SS196	Toshiba	KDS196	DZD15	Sanyo	Z02W15V	MA3100	Matsushita	Z02W10V
02CZ5.1	Toshiba	Z02W5.1V	1SS220	NEC	KDS193	DZD16	Sanyo	Z02W16V	MA3110	Matsushita	Z02W11V
02CZ5.6	Toshiba	Z02W5.6V	1SS222	NEC	KDS187	DZD18	Sanyo	Z02W18V	MA3120	Matsushita	Z02W12V
02CZ6.2	Toshiba	Z02W6.2V	1SS226	Toshiba	KDS226	DZD20	Sanyo	Z02W20V	MA3130	Matsushita	Z02W13V
02CZ6.8	Toshiba	Z02W6.8V	1SS300	Toshiba	KDS120	DZD22	Sanyo	Z02W22V	MA3150	Matsushita	Z02W15V
02CZ7.5	Toshiba	Z02W7.5V	1SS301	Toshiba	KDS121	DZD24	Sanyo	Z02W24V	MA3160	Matsushita	Z02W16V
02CZ8.2	Toshiba	Z02W8.2V	1SS312	Toshiba	KDS112	HSM123	Hitachi	KDS226	MA3180	Matsushita	Z02W18V
02CZ9.1	Toshiba	Z02W9.1V	1SS314	Toshiba	KDS114	HSM221	Hitachi	KDS193	MA3200	Matsushita	Z02W20V
02CZ10	Toshiba	Z02W10V	1SS318	Rohm	KDS114	HSM223	Hitachi	KDS187	MA3220	Matsushita	Z02W22V
02CZ11	Toshiba	Z02W11V	1SV147	Toshiba	KDV147	HSM2836	Hitachi	KDS181	MA3240	Matsushita	Z02W24V
02CZ12	Toshiba	Z02W12V	1SV149	Toshiba	KDV149	HSM2838	Hitachi	KDS184	MMBV432	Motorola	KDV804S
02CZ13	Toshiba	Z02W13V	1SV153	Toshiba	KDV153	HVM16	Hitachi	KDV804S	MMBZ5229B	Motorola	Z02W4.3V
02CZ15	Toshiba	Z02W15V	1SV160	Toshiba	KDS2236S	HZM5A	Hitachi	Z02W4.3V	MMBZ5230B	Motorola	Z02W4.7V
02CZ16	Toshiba	Z02W16V	1SV172	Rohm	KDV173	HZM5B	Hitachi	Z02W4.7V	MMBZ5231B	Motorola	Z02W5.1V
02CZ18	Toshiba	Z02W18V	BB804	SIMENS	KDV804S	HZM5C	Hitachi	Z02W5.1V	MMBZ5232B	Motorola	Z02W5.6V
02CZ20	Toshiba	Z02W20V	DA116	Rohm	KDS187	HZM6A	Hitachi	Z02W5.6V	MMBZ5234B	Motorola	Z02W6.2V
02CZ22	Toshiba	Z02W22V	DA119	Rohm	KDS196	HZM6C	Hitachi	Z02W6.2V	MMBZ5235B	Motorola	Z02W6.8V
02CZ24	Toshiba	Z02W24V	DA204K	Rohm	KDS226	HZM7A	Hitachi	Z02W6.8V	MMBZ5236B	Motorola	Z02W7.5V
02DZ2.0	Toshiba	KDZ2.0V	DAN202K	Rohm	KDS184	HZM7C	Hitachi	Z02W7.5V	MMBZ5237B	Motorola	Z02W8.2V
02DZ2.2	Toshiba	KDZ2.2V	DAN202U	Rohm	KDS121	HZM9A	Hitachi	Z02W8.2V	MMBZ5239B	Motorola	Z02W9.1V
02DZ2.4	Toshiba	KDZ2.4V	DAN209S	Rohm	KDS201	HZM9B	Hitachi	Z02W9.1V	MMBZ5240B	Motorola	Z02W10V
02DZ2.7	Toshiba	KDZ2.7V	DAP202K	Rohm	KDS181	HZM11A	Hitachi	Z02W10V	MMBZ5241B	Motorola	Z02W11V
02DZ3.0	Toshiba	KDZ3.0V	DAP202U	Rohm	KDS120	HZM11B	Hitachi	Z02W11V	MMBZ5242B	Motorola	Z02W12V
02DZ3.3	Toshiba	KDZ3.3V	DCA010	Sanyo	KDS181	HZM12A	Hitachi	Z02W12V	MMBZ5243B	Motorola	Z02W13V
02DZ3.6	Toshiba	KDZ3.6V	DCB010	Sanyo	KDS184	HZM12B	Hitachi	Z02W13V	MMBZ5245B	Motorola	Z02W15V
02DZ3.9	Toshiba	KDZ3.9V	DCC010	Sanyo	KDS226	HZM15	Hitachi	Z02W15V	MMBZ5246B	Motorola	Z02W16V
02DZ4.3	Toshiba	KDZ4.3V	DSA010	Sanyo	KDS187	HZM16	Hitachi	Z02W16V	MMBZ5248B	Motorola	Z02W18V
02DZ4.7	Toshiba	KDZ4.7V	DSB010	Sanyo	KDS193	HZM18	Hitachi	Z02W18V	MMBZ5250B	Motorola	Z02W20V
02DZ5.1	Toshiba	KDZ5.1V	DSC010	Sanyo	KDS190	HZM20	Hitachi	Z02W20V	MMBZ5251B	Motorola	Z02W22V
02DZ5.6	Toshiba	KDZ5.6V	DSD010	Sanyo	KDS196	HZM22	Hitachi	Z02W22V	MMBZ5252B	Motorola	Z02W24V
02DZ6.2	Toshiba	KDZ6.2V	DZD4.3	Sanyo	Z02W4.3V	HZM24	Hitachi	Z02W24V	SVC202SPA	Sanyo	KDV147
02DZ6.8	Toshiba	KDZ6.8V	DZD4.7	Sanyo	Z02W4.7V	MA151K	Matsushita	KDS193	SVC212	Sanyo	KDV804S
02DZ7.5	Toshiba	KDZ7.5V	DZD5.1	Sanyo	Z02W5.1V	MA151WA	Matsushita	KDS181	SVC251SPA	Sanyo	KDV251M
02DZ8.2	Toshiba	KDZ8.2V	DZD5.6	Sanyo	Z02W5.6V	MA151WK	Matsushita	KDS184	SVC321SPA	Sanyo	KDV149

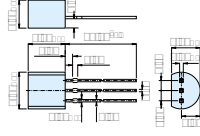
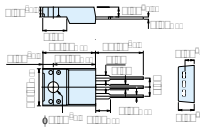
## ■ SBDs

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
1SS357	Toshiba	KDR357	D10SC6M	Shindengen	B10A60VIC	MBR1545CT	Motorola	B15A45VIC	SBL540	GI	B5A45VI
1SS367	Toshiba	KDR367	D15SCA4M	Shindengen	B15A45VIC	MBRA130LT3	Motorola	SMAB13	SFPA-53	Sanken	SMAB13
1SS378	Toshiba	KDR378	ERC62M-004	Fuji	B10A45VI	MBRA140LT3	Motorola	SMAB14	SFPA-73	Sanken	SMAB33
1SS385F	Toshiba	KDR378E	ESAD82-004	Fuji	B15A45VIC	MBRF1045	Motorola	B10A45VI	SFPB-54	Sanken	SMAB14
1SS392	Toshiba	KDR393	F10P048	IR	B10A45VIC	MBRF1545CT	Motorola	B15A45VIC	SFPJ-53	Sanken	SMAB13
1SS393	Toshiba	KDR322	FMB-24H	Sanken	B15A45VIC	PBYR1045	PHILIPS	B10A45VI	SFPJ-73	Sanken	SMAB33
1SS393	Toshiba	KDR393S	FMB-24L	Sanken	B10A45VIC	PBYR1545CT	PHILIPS	B15A45VIC	SPB-G34S	Sanken	SMAB34
10GWJ2CZ47C	Toshiba	B10A45VIC	FMB-36	Sanken	B15A60VIC	RB053L-30	Rohm	SMAB33	SS13	Fairchild	SMAB13
16GWJ2CZ47	Toshiba	B15A45VIC	FMB-G14L	Sanken	B5A45VI	RB060L-40	Rohm	SMAB34	SS13	GS	SMAB13
5GWJZ47	Toshiba	B5A45VI	FMB-G24H	Sanken	B10A45VI	RB160L-40	Rohm	SMAB14	SS14	Fairchild	SMAB14
B130	Liteon	SMAB13	KDR505S	Sanyo	KDR505S	RB160L-60	Rohm	SMAB16	SS14	GS	SMAB14
B130B	Liteon	SMAB13	MA2S728	Panasonic	KDR728E	RB400D	Rohm	KDR400S	SS16	Fairchild	SMAB16
B140	Liteon	SMAB14	MA721	Matsushita	KDR721S	RB411D	Rohm	KDR411	SS16	GS	SMAB16
B140B	Liteon	SMAB14	MA728	Matsushita	KDR728	RB751S-40	Rohm	KDR377E	STPS1045D	SGS-T	B10A45VI
B160	Liteon	SMAB16	MA729	Matsushita	KDR729	RB751V-40	Rohm	KDR377	STPS1045F	SGS-T	B10A45VI
B160B	Liteon	SMAB16	MB1545CT	Motorola	B15A45VIC	S15SCA4M	Shindengen	B15A45VIC	S1PS16L40CF	SGS-T	B15A45VIC
B330A	Liteon	SMAB33	MBR1045	GI	B10A45VI	SAC82-004	Fuji	B10A45VIC	S1PS16L40CT	SGS-T	B15A45VIC
B340A	Liteon	SMAB34	MBR1045	IR	B10A45VI	SB007T03Q	Sanyo	KDR731	U1FWJ44L	Toshiba	SMAB13
D1FH3	Shindengen	SMAB33	MBR1045	Motorola	B10A45VI	SB007W03Q	Sanyo	KDR732	U1FWJ44M	Toshiba	SMAB13
D5S4M	Shindengen	B5A45VI	MBR1545CT	GI	B15A45VIC	SB01-05CP	Sanyo	KDR105S	U1FWJ44N	Toshiba	SMAB13
D10SC4M	Shindengen	B10A45VIC	MBR1545CT	IR	B15A45VIC	SB01-05Q	Sanyo	KDR105	U1GWJ44	Toshiba	SMAB14

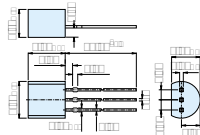
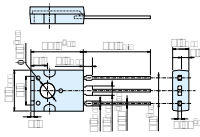
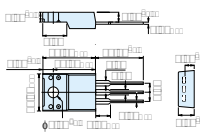
## ■ FRDs

10DL2CZ47A	Toshiba	U10A2CIC	ESAC25-02C	Fuji	F1B2CC	FML-G14S	Sanken	U5A4CI	SF10LC40U	Shindengen	U10A4CIC
1SR159-200	Rohm	SMAU1D	ESAC25-02N	Fuji	F1B2CA	FMN-G12S	Sanken	U5A2CI	SF5LC40U	Shindengen	U5A4CIC
1SR56-400	Rohm	SMAU1G	ESAC25M-02C	Fuji	F1B2CCI	FMN-G14S	Sanken	U5A4CI	SFPL-62	Sanken	SMAU1D
5DL2CZ47A	Toshiba	U5A2CIC	ESAC25M-02N	Fuji	F1B2CAI	FMP-G12S	Sanken	U5A2CI	U1DL44A	Toshiba	SMAU1D
5DLZ47A	Toshiba	U5A2CI	FMG-12S	Sanken	U5A2CIC	FMU-22R	Sanken	F1B2CAI	U1GU44	Toshiba	SMAU1G
5GL2CZ47A	Toshiba	U5A4CIC	FMG-14S	Sanken	U5A4CIC	FMU-22S	Sanken	F1B2CCI	US1D	Liteon	SMAU1D
5GLZ47A	Toshiba	U5A4CI	FMG-22S	Sanken	U10A2CIC	FMX-12S	Sanken	U5A2CIC	US1D	GS	SMAU1D
D1FL20U	Shindengen	SMAU1D	FML-12S	Sanken	U5A2CIC	FMX-22S	Sanken	U10A2CIC	US1G	Liteon	SMAU1G
D1FL40	Shindengen	SMAU1G	FML-14S	Sanken	U5A4CIC	FMX-G12S	Sanken	U5A2CI	US1G	GS	SMAU1G
D2FL20U	Shindengen	SMAU2D	FML-22S	Sanken	U10A2CIC	FMX-G14S	Sanken	U5A4CI	US1J	Liteon	SMAU1J
D2FL40	Shindengen	SMAU2G	FML-24S	Sanken	U10A4CIC	RS2GA	Liteon	SMAU2G	US1J	GS	SMAU1J
ES2DA	Liteon	SMAU2D	FML-G12S	Sanken	U5A2CI	SF10LC20U	Shindengen	U10A2CIC	US2JA	Liteon	SMAU2J

■ Triacs

Type No.	V <sub>DRM</sub> (V)	I <sub>T(RMS)</sub> (A)	I <sub>TSM</sub> (A)		I <sub>DRM</sub> (μA)	I <sub>GT</sub> (mA)			V <sub>GT</sub> (V)		V <sub>TM</sub> (V)		(dv/dt) <sub>C</sub> (V/μs)	Package	Outline (Unit: mm)
			50Hz	60Hz		I - II - III	IV	I - II - III	IV	Max.	I <sub>TM</sub> (A)				
												Max.			
T1A6C	600	1	9	10	10	5	10	2	2	1.6	1.5	2	TO-92		
T3A6CI	600	3	30	33	20	5	10	1.5	2	1.5	4.5	10	TO-220IS		
T6A6CI	600	6	54	60	20	15	-	1.5	-	1.5	9	10			
T8A6CI	600	8	80	88	20	30	-	1.5	-	1.5	12	10			
T10A6CI	600	10	90	100	20	30	-	1.5	-	1.5	15	10			
T12A6CI	600	12	120	132	20	30	-	1.5	-	1.5	17	10			
T16A6CI	600	16	150	165	20	30	-	1.5	-	1.5	25	10			

■ SCRs

Type No.	V <sub>DRM</sub> V <sub>VRRM</sub> (V)	I <sub>T(AV)</sub> (A)	I <sub>TSM</sub> (A)		I <sub>DRM</sub> I <sub>RRM</sub> (μA) ※	I <sub>GT</sub> (mA)	V <sub>GT</sub> (V)	Test Condition	V <sub>TM</sub> (V)		dv/dt (V/μs)	R <sub>th(j-c)</sub> (°C/W)	Package	Outline (Unit: mm)
			50Hz	60Hz					Max.	I <sub>TM</sub> (A)				
R05A4CS	400	0.5	7	8	10⊙	200 μA	0.8	V <sub>D</sub> =6V R <sub>L</sub> =100 Ω R <sub>GK</sub> =1 kΩ	1.5	1	-	125	TO-92	
R05A6CS	600	0.5	7	8	10⊙	200 μA	0.8		1.5	1	-	125		
R2A4CS	400	2	20	22	10⊙	200 μA	0.8		2	4	-	7	TO-126	
R2A6CS	600	2	20	22	10⊙	200 μA	0.8	2	4	-	7			
* R3A4CI	400	3	50	55	10	10	1	V <sub>D</sub> =6V R <sub>L</sub> =100 Ω	1.5	12	50	4.5	TO-220IS	
* R3A6CI	600	3	50	55	10	10	1		1.5	12	50	4.5		
* R5A4CI	400	5	80	88	10	10	1		1.5	15	50	4.2		
* R5A6CI	600	5	80	88	10	10	1		1.5	15	50	4.2		
* R8A4CI	400	8	120	132	10	10	1		1.5	25	50	3.7		
* R8A6CI	600	8	120	132	10	10	1		1.5	25	50	3.7		

Note) \*: Under development, ※ : V<sub>DRM</sub>=V<sub>VRRM</sub>=Rated, ⊙ : R<sub>GK</sub>=1 kΩ.

■ List of Equivalent Products ( Triac )

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
AC01DGM	NEC	T1A6C	BCR12PM-12	Mitsubishi	T12A6CI	MAC212-8	Motorola	T12A6CI
AC03FGM	NEC	T3A6CI	BCR16CM-12	Mitsubishi	T16A6CI	MAC212-8FP	Motorola	T12A6CI
AC03FSM	NEC	T3A6CI	BCR16PM-12	Mitsubishi	T16A6CI	MAC229-8	Motorola	T8A6CI
AC08FGM	NEC	T8A6CI	BTA06-600C	SGS-T	T6A6CI	SM1J43	Toshiba	T1A6C
AC08FSM	NEC	T8A6CI	BTA08-600C	SGS-T	T8A6CI	SM3J45	Toshiba	T3A6CI
AC10FGM	NEC	T10A6CI	BTA10-600C	SGS-T	T10A6CI	SM3JZ47	Toshiba	T3A6CI
AC10FSM	NEC	T10A6CI	BTA12-600C	SGS-T	T12A6CI	SM6J45	Toshiba	T6A6CI
AC12FGM	NEC	T12A6CI	BTA16-600BW	SGS-T	T16A6CI	SM6JZ47	Toshiba	T6A6CI
AC12FSM	NEC	T12A6CI	BTB06-600C	SGS-T	T6A6CI	SM8J45	Toshiba	T8A6CI
AC16FGM	NEC	T16A6CI	BTB08-600C	SGS-T	T8A6CI	SM8JZ47	Toshiba	T8A6CI
AC16FSM	NEC	T16A6CI	BTB10-600C	SGS-T	T10A6CI	SM12J45	Toshiba	T12A6CI
BCR1AM-12	Mitsubishi	T1A6C	BTB12-600C	SGS-T	T12A6CI	SM12JZ47	Toshiba	T12A6CI
BCR3AM-12	Mitsubishi	T3A6CI	BTB16-600BW	SGS-T	T16A6CI	SM16J45	Toshiba	T16A6CI
BCR8CM-12	Mitsubishi	T8A6CI	MAC15-8	Motorola	T16A6CI	SM16JZ47	Toshiba	T16A6CI
BCR8PM-12	Mitsubishi	T8A6CI	MAC15-8FP	Motorola	T16A6CI	T2323M	Motorola	T3A6CI
BCR10CM-12	Mitsubishi	T10A6CI	MAC97A8	Motorola	T1A6C	T2500M	Motorola	T5A6CI
BCR10PM-12	Mitsubishi	T10A6CI	MAC210-8	Motorola	T10A6CI			
BCR12CM-12	Mitsubishi	T12A6CI	MAC210-8FP	Motorola	T10A6CI			

■ List of Equivalent Products ( SCR )

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2P4M	NEC	R2A4CS	SF3GZ47	Toshiba	R3A4CI	SF8JZ47	Toshiba	R8A6CI
5P4M	NEC	R5A4CI	SF3JZ47	Toshiba	R3A6CI	TF361M	Sanken	R3A6CI
8P4M	NEC	R8A4CI	SF5GZ47	Toshiba	R5A4CI	TF561M	Sanken	R5A6CI
SF0R5G43	Toshiba	R05A4CS	SF5JZ47	Toshiba	R5A6CI			
SF0R5J43	Toshiba	R05A6CS	SF8GZ47	Toshiba	R8A4CI			

## ▶ SAW FILTER FOR 100MHz BAND PAGING SYSTEM

Part No.	$f_o$ (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss (dBmax)	Rejection Level (dBmin)	Package	Terminating Impedance
KF139/S	139	$f_o \pm 4.0$	6.0	50 @ $f_o-100 \sim f_o-38.8$ MHz 42 @ $f_o+38.8 \sim f_o+100$ MHz	F-11/SC-45	210 $\Omega$ //-11.9pF
KF147/S	147					210 $\Omega$ //-11.3pF
KF155/S	155					210 $\Omega$ //-10.7pF
KF163/S	163					210 $\Omega$ //-8.7pF
KF171/S	171					210 $\Omega$ //-12.7pF

## ▶ SAW FILTER FOR 280MHz, 300MHz BAND PAGING SYSTEM

Part No.	$f_o$ (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss (dBmax)	Ripple (dBmax)	Rejection Level (dBmin)	Package	Terminating Impedance
KF281/S	281	$f_o \pm 3.1$	4.0	2.0	50 @ $f_o-100 \sim f_o-39.5$ MHz 50 @ $f_o+39.5 \sim f_o+100$ MHz	F-11/SC-45	150 $\Omega$
KF282/S	282	$f_o \pm 4.0$					
KF284/S	284	$f_o \pm 3.1$					
KF319S	319.5	$f_o \pm 1.5$	3.0	1.5	55 @ $f_o-100 \sim f_o-39.5$ MHz 55 @ $f_o+39.5 \sim f_o+100$ MHz	SC-45	
KF325/S/V	325.3	$f_o \pm 3.3$	4.0	2.0	50 @ $f_o-100 \sim f_o-39.5$ MHz 50 @ $f_o+39.5 \sim f_o+100$ MHz	F-11/SC-45/SC-44	
KF325AS	325.3	$f_o \pm 3.3$	4.0	2.0		SC-45	50 $\Omega$

## ▶ SAW FILTER FOR 400MHz ~ 500MHz BAND ( 150 $\Omega$ Termination Impedance type )

Part No.	$f_o$ (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss (dBmax)	Ripple (dBmax)	Rejection Level (dBmin)	Package	Terminating Impedance
KF□□□B/BS/BV	□□□	$f_o \pm 2.0$	4.0	2.0	55 @ $f_o-100 \sim f_o-40.8$ MHz 55 @ $f_o+30 \sim f_o+100$ MHz	F-11/SC-45/SC-44	150 $\Omega$
KF448B/BS/BV	448	$f_o \pm 2.0$			50 @ $f_o-44.8 \sim f_o-40.8$ MHz 45 @ $f_o+40.8 \sim f_o+44.8$ MHz		
KF465A/AS/ AV/AU	465	$f_o \pm 3.0$			50 @ $f_o-45.8 \sim f_o-39.8$ MHz 45 @ $f_o+39.8 \sim f_o+45.8$ MHz	F-11/SC-45/ SC-44/SC-33	

Note) "□□□□"; 402, 406, 410, 414, 418, 422, 426, 430, 434, 438, 442, 446, 450, 454, 458, 462, 466, 470, 474, 478, 482, 486, 490, 494, 498, 502, 506, 510, 514, 518

## ▶ SAW FILTER FOR 400MHz ~500MHz BAND ( 50 Ω Termination Impedance type )

Part No.	f <sub>o</sub> (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss(dB <sub>max</sub> )	Ripple (dB <sub>max</sub> )	Rejection Level(dB <sub>min</sub> )	Package	Terminating Impedance
KF415/S	415	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45	50 Ω
KF422/S/V	422	f <sub>o</sub> ±2.0	4.0	2.0	50 @f <sub>o</sub> -44.8 ~f <sub>o</sub> -40.8MHz 45 @f <sub>o</sub> +40.8 ~f <sub>o</sub> +44.8MHz	F-11/SC-45/SC-44	
KF425/S	425	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45	
KF433/S/V	433.5	f <sub>o</sub> ±2.0	4.0	2.0	50 @f <sub>o</sub> -44.8 ~f <sub>o</sub> -40.8MHz 45 @f <sub>o</sub> +40.8 ~f <sub>o</sub> +44.8MHz	F-11/SC-45/SC-44	
KF435/S	435	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -100 ~f <sub>o</sub> -80MHz 45 @f <sub>o</sub> +80 ~f <sub>o</sub> +100MHz	F-11/SC-45	
KF440/S	440	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -100 ~f <sub>o</sub> -80MHz 45 @f <sub>o</sub> +80 ~f <sub>o</sub> +100MHz	F-11/SC-45	
KF444/S	444	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -100 ~f <sub>o</sub> -80MHz 45 @f <sub>o</sub> +80 ~f <sub>o</sub> +100MHz	F-11/SC-45	
KF446/S/V	446	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -100 ~f <sub>o</sub> -80MHz 45 @f <sub>o</sub> +80 ~f <sub>o</sub> +100MHz	F-11/SC-45/SC-44	
KF446A/AV	446	f <sub>o</sub> ±2.0	4.0	2.0	55 @f <sub>o</sub> -100 ~f <sub>o</sub> -80MHz 45 @f <sub>o</sub> +80 ~f <sub>o</sub> +100MHz	F-11/SC-44	
KF448/S/V	448	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45/SC-44	
KF448A/AS/AV	448	f <sub>o</sub> ±2.0	4.0	2.0	50 @f <sub>o</sub> -44.8 ~f <sub>o</sub> -40.8MHz 45 @f <sub>o</sub> +40.8 ~f <sub>o</sub> +44.8MHz	F-11/SC-45/SC-44	
KF455S	455	f <sub>o</sub> ±5.0	4.0	2.0	50 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	SC-45	
KF458/S/V	458	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45/SC-44	
KF465/S/V	465	f <sub>o</sub> ±3.0	4.0	2.0	50 @f <sub>o</sub> -45.8 ~f <sub>o</sub> -39.8MHz 45 @f <sub>o</sub> +39.8 ~f <sub>o</sub> +45.8MHz	F-11/SC-45/SC-44	
KF465B/BS	465	f <sub>o</sub> ±5.0	4.0	2.0	50 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45	
KF468/S/V	468	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45/SC-44	
KF477/S/V	477	f <sub>o</sub> ±2.0	4.0	2.0	50 @f <sub>o</sub> -44.8 ~f <sub>o</sub> -40.8MHz 45 @f <sub>o</sub> +40.8 ~f <sub>o</sub> +44.8MHz	F-11/SC-45/SC-44	
KF478/S/V	478	f <sub>o</sub> ±5.0	4.0	2.0	55 @f <sub>o</sub> -47.8 ~f <sub>o</sub> -37.8MHz 45 @f <sub>o</sub> +37.8 ~f <sub>o</sub> +47.8MHz	F-11/SC-45/SC-44	

## ▶ SAW FILTER FOR 930MHz BAND PAGING SYSTEM

Part No.	f <sub>o</sub> (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss(dB <sub>max</sub> )	Ripple (dB <sub>max</sub> )	Rejection Level(dB <sub>min</sub> )	Package	Terminating Impedance
KF924V	924	f <sub>o</sub> ±1.0	3.5	1.5	45 @f <sub>o</sub> -400 ~f <sub>o</sub> -39.5MHz 45 @f <sub>o</sub> +50 ~f <sub>o</sub> +400MHz	SC-44	50 Ω+10nH
KF930/S/V	930.5	f <sub>o</sub> ±2.0	4.0	2.0	45 @f <sub>o</sub> -400 ~f <sub>o</sub> -40.8MHz 45 @f <sub>o</sub> +50 ~f <sub>o</sub> +400MHz	F-11/SC-45/SC-44	50 Ω+10nH
KF930A/AS/AV	930.5	f <sub>o</sub> ±2.0	4.0	2.0	40 @f <sub>o</sub> -400 ~f <sub>o</sub> -40.8MHz 40 @f <sub>o</sub> +50 ~f <sub>o</sub> +400MHz	F-11/SC-45/SC-44	50 Ω

## ▶ SAW FILTER FOR WIRELESS DATA COMMUNICATION

Part No.	$f_0$ (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss(dB <sub>max</sub> )	Ripple (dB <sub>max</sub> )	Rejection Level(dB <sub>min</sub> )	Package	Terminating Impedance
KF899V	899	$f_0 \pm 2.0$	4.0	1.5	45 @ $f_0 - 200 \sim f_0 - 40$ MHz 45 @ $f_0 + 50 \sim f_0 + 200$ MHz	SC-44	50 $\Omega$ + 10nH
KF939V	939	$f_0 \pm 2.0$	4.0	1.5	45 @ $f_0 - 200 \sim f_0 - 40$ MHz 45 @ $f_0 + 50 \sim f_0 + 200$ MHz	SC-44	50 $\Omega$ + 10nH

## ▶ SAW FILTER FOR CORDLESS PHONE

Part No.	$f_0$ (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss(dB <sub>max</sub> )	Ripple (dB <sub>max</sub> )	Rejection Level(dB <sub>min</sub> )	Package	Terminating Impedance	Remarks
KF823/V	823.5	$f_0 \pm 1.0$	4.0	1.5	45 @ $f_0 - 45 \sim f_0 - 40$ MHz 35 @ $f_0 + 40 \sim f_0 + 45$ MHz	F-11/SC-44	50 $\Omega$ + 10nH	
KF920/V	920.5							
KF886/V	886	$f_0 \pm 1.0$	4.0	1.5	45 @ $f_0 - 45 \sim f_0 - 40$ MHz 35 @ $f_0 + 40 \sim f_0 + 45$ MHz	F-11/SC-44	50 $\Omega$ + 10nH	CT-1+
KF931/V	931							
KF914/V	914.5	$f_0 \pm 1.0$	4.0	1.5	45 @ $f_0 - 45 \sim f_0 - 40$ MHz 35 @ $f_0 + 40 \sim f_0 + 45$ MHz	F-11/SC-44	50 $\Omega$ + 10nH	CT-1
KF959/V	959.5							
KF903A/AV	903	$f_0 \pm 1.2$	4.5	1.5	45 @ $f_0 - 45 \sim f_0 - 40$ MHz 20 @ $f_0 + 23 \sim f_0 + 25$ MHz 40 @ $f_0 + 40 \sim f_0 + 45$ MHz	F-11/SC-44	50 $\Omega$	ISM
KF927A/AV	927		5.0		45 @ $f_0 - 45 \sim f_0 - 40$ MHz 35 @ $f_0 - 25 \sim f_0 - 23$ MHz 40 @ $f_0 + 40 \sim f_0 + 45$ MHz			

## ▶ SAW DUPLEXER FOR CORDLESS PHONE

Part No.	$f_0$ (MHz)	BW <sub>3dB</sub> (MHz)	Insertion Loss(dB <sub>max</sub> )	Ripple (dB <sub>max</sub> )	Rejection Level(dB <sub>min</sub> )	Package	Terminating Impedance	Remarks
KFX0327T KFX2703T	903.75 926.25	$f_0 \pm 1.0$	4.5	2.0	38 @ 924.15 ~ 927.25 MHz	TO-39	50 $\Omega$	ISM
					30 @ 882.45 ~ 904.75 MHz			
KFX1459T KFX5914T	914.5 959.5	$f_0 \pm 0.5$	4.0	1.5	37 @ 959 ~ 1000 MHz	TO-39	50 $\Omega$	CT-1
					37 @ 850 ~ 917.2 MHz			
KFX8631T KFX3186T	886 931	$f_0 \pm 1.0$	4.0	1.5	39 @ 930 ~ 932 MHz	TO-39	50 $\Omega$	CT-1+
					40 @ 885 ~ 889 MHz			
KFX1404T KFX0414T	814.5 904.5	$f_0 \pm 0.5$	4.0	1.5	37 @ 858.8 ~ 1000 MHz	TO-39	50 $\Omega$	CIS
					37 @ 795 ~ 861.7 MHz			

## ► SAW FILTER FOR CELLULAR PHONE (RF)

Part No.	f <sub>0</sub> (MHz)	BW3dB (MHz)	Insertion Loss(dBmax)	Ripple (dBmax)	Rejection Level(dBmin)	VSWR (MAX)	Package Type	Terminating Impedance	Applications
KF836FU	836.5	f <sub>0</sub> ±12.5	3.5	2.0	35 @869 ~894MHz	2.2	SC-33	50 Ω	CDMA
KF881FU	881.5	f <sub>0</sub> ±12.5	3.5	2.0	35 @800 ~849MHz	2.2	SC-33		
*KF836FX	836.5	f <sub>0</sub> ±12.5	3.5	2.0	40 @869 ~894MHz	2.0	SC-23		
*KF881FX	881.5	f <sub>0</sub> ±12.5	2.5	1.5	30 @824 ~849MHz	2.5	SC-23		
*KF836U	836.5	f <sub>0</sub> ±12.5	3.5	1.6	28 @869 ~1049MHz	2.0	SC-33		
*KF881U	881.5	f <sub>0</sub> ±12.5	3.5	1.6	45 @779 ~849MHz	2.0	SC-33		
*KF902FU	902.5	f <sub>0</sub> ±12.5	3.5	2.0	20 @935 ~980MHz	2.7	SC-33		GSM
*KF947FU	947.5	f <sub>0</sub> ±12.5	3.5	2.0	20 @890 ~915MHz	2.7	SC-33		
*KF942FU	942.5	f <sub>0</sub> ±17.5	3.5	2.0	** 16 @905 ~915MHz	2.7	SC-33		EGSM

note) \* : Underdevelopment

\*\* : dB(typ.)

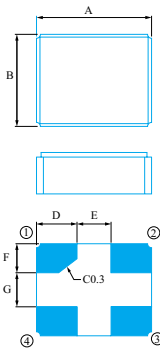
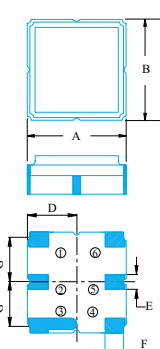
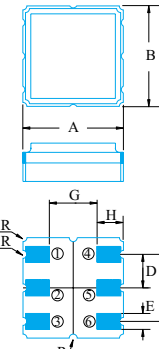
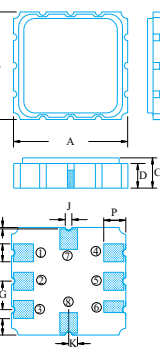
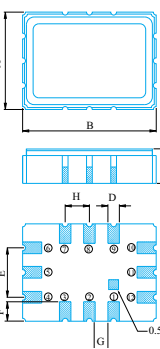
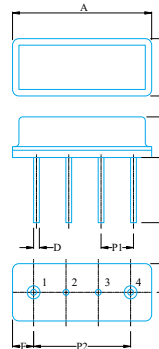
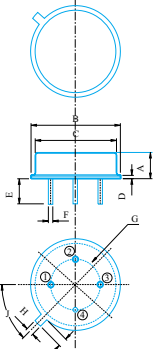
## ► SAW FILTER FOR IF

Part No.	f <sub>0</sub> (MHz)	BW (MHz)	Insertion Loss(dBtyp)	Modes of Operation	Package Type	Applications
KFM85M	85.38	1.26	10.7	Single-Ended or Balanced	*SC-713	CDMA
KFM110	110.592	0.8	3.0	Single-Ended	F-11	DECT
KFM210M	210.38	1.26	7.8	Single-Ended or Balanced	SC-57	US PCS
KFM220M	220.38	1.26	7.2	Single-Ended or Balanced	SC-57	KOREA PCS

note) \* : Underdevelopment

▣ Please feel free to ask us on center frequencies except above mentioned product list, also on SAW filters for other applications.

## ► Package Dimension (Unit : mm)

 <table border="1" data-bbox="343 369 478 504"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>2.5±0.1</td></tr> <tr><td>B</td><td>2.0±0.1</td></tr> <tr><td>C</td><td>0.9±0.1</td></tr> <tr><td>D</td><td>0.88 TYP.</td></tr> <tr><td>E</td><td>0.74 TYP.</td></tr> <tr><td>F</td><td>0.63 TYP.</td></tr> <tr><td>G</td><td>0.74 TYP.</td></tr> </tbody> </table> <table border="1" data-bbox="343 504 478 593"> <thead> <tr> <th>PIN NO.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr><td>①</td><td>INPUT</td></tr> <tr><td>②</td><td>GROUND</td></tr> <tr><td>③</td><td>OUTPUT</td></tr> <tr><td>④</td><td>GROUND</td></tr> </tbody> </table>	DIM	MILLIMETERS	A	2.5±0.1	B	2.0±0.1	C	0.9±0.1	D	0.88 TYP.	E	0.74 TYP.	F	0.63 TYP.	G	0.74 TYP.	PIN NO.	FUNCTION	①	INPUT	②	GROUND	③	OUTPUT	④	GROUND	 <table border="1" data-bbox="837 302 973 448"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>3.0±0.1</td></tr> <tr><td>B</td><td>3.0±0.1</td></tr> <tr><td>C</td><td>1.15±0.12</td></tr> <tr><td>D</td><td>1.50 TYP.</td></tr> <tr><td>E</td><td>0.60 TYP.</td></tr> <tr><td>F</td><td>0.85 TYP.</td></tr> <tr><td>G</td><td>1.20 TYP.</td></tr> </tbody> </table> <table border="1" data-bbox="837 470 973 560"> <thead> <tr> <th>PIN NO.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr><td>① ②</td><td>GROUND</td></tr> <tr><td>③ ④</td><td>SIGNAL</td></tr> <tr><td>⑤</td><td>SIGNAL</td></tr> </tbody> </table>	DIM	MILLIMETERS	A	3.0±0.1	B	3.0±0.1	C	1.15±0.12	D	1.50 TYP.	E	0.60 TYP.	F	0.85 TYP.	G	1.20 TYP.	PIN NO.	FUNCTION	① ②	GROUND	③ ④	SIGNAL	⑤	SIGNAL	 <table border="1" data-bbox="1300 280 1436 448"> <thead> <tr> <th>DIM</th> <th>MILLIMETERS</th> </tr> </thead> <tbody> <tr><td>A</td><td>3.8±0.15</td></tr> <tr><td>B</td><td>3.8±0.15</td></tr> <tr><td>C</td><td>1.35±0.23</td></tr> <tr><td>D</td><td>1.27 TYP.</td></tr> <tr><td>E</td><td>0.6 TYP.</td></tr> <tr><td>F</td><td>2.54 TYP.</td></tr> <tr><td>G</td><td>1.80 TYP.</td></tr> <tr><td>H</td><td>1.00 TYP.</td></tr> <tr><td>R</td><td>R0.15 TYP.</td></tr> </tbody> </table> <table border="1" data-bbox="1300 459 1436 548"> <thead> <tr> <th>PIN NO.</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr><td>① ②</td><td>GROUND</td></tr> <tr><td>③</td><td>SIGNAL</td></tr> <tr><td>④</td><td>SIGNAL</td></tr> </tbody> </table>	DIM	MILLIMETERS	A	3.8±0.15	B	3.8±0.15	C	1.35±0.23	D	1.27 TYP.	E	0.6 TYP.	F	2.54 TYP.	G	1.80 TYP.	H	1.00 TYP.	R	R0.15 TYP.	PIN NO.	FUNCTION	① ②	GROUND	③	SIGNAL	④	SIGNAL
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## ► List of Marking SC-44 / SC-33 Package

## SC-44 Package

Mark	Part No.	Mark	Part No.	Mark	Part No.	Mark	Part No.	Mark	Part No.
BA	KF325V	CE	KF914V	EE	KF418BV	EY	KF446AV	FL	KF490BV
BE	KF930V	CF	KF959V	EF	KF422BV	FA	KF450BV	FM	KF494BV
BF	KF930AV	CO	KF903AV	EG	KF426BV	FB	KF454BV	FN	KF498BV
BK	KF448V	CP	KF927AV	EH	KF430BV	FC	KF458BV	GA	KF502BV
BL	KF458V	CW	KF899V	EI	KF434BV	FD	KF462BV	GB	KF506BV
BM	KF468V	CX	KF939V	EJ	KF438BV	FE	KF465AV	GC	KF510BV
BN	KF478V	CY	KF823V	EK	KF442BV	FF	KF466BV	GD	KF514BV
BQ	KF465V	CZ	KF920V	EL	KF446BV	FG	KF470BV	GE	KF518BV
BR	KF433V	EA	KF402BV	EM	KF448AV	FH	KF474BV	GG	KF924V
BS	KF447V	EB	KF406BV	EN	KF448BV	FI	KF478BV		
CC	KF886V	EC	KF410BV	EP	KF422V	FJ	KF482BV		
CD	KF931V	ED	KF414BV	EX	KF446V	FK	KF486BV		

## SC-33 Package

Mark	Part No.	Mark	Part No.	Mark	Part No.	Mark	Part No.
FE	KF465AU	HD	KF881U	HN	KF881FU	HQ	KF947FU
HC	KF836U	HL	KF836FU	HP	KF902FU	HS	KF942FU

## ► Part Numbering System of Dielectric Device

No.	<b>KH B 0914 A01</b> 1 2 3 4	<b>KH X 36 81 B01</b> 1 2 3 3* 4	<b>KH R 0975 C01</b> 1 2 3 4			
1	KEC HIGH FREQUENCY DEVICE					
2	B	BPF	X	DUPLEXER	R	DR
3	CENTER FREQUENCY	0914 : 914.5MHz 1890 : 1890 MHz	3 : TX	36 : 836.5 MHz	RESONANT FREQUENCY	0975 : 9.75 GHz
				65 : 1765 MHz		
			3* : RX	81 : 881.5 MHz		
				55 : 1855 MHz		
4	VERSION : A01 ~Z99					

## ► Dielectric Band Pass Filter

Part No.	Application	Freq (MHz)	Band Width (MHz)	Insertion Loss (dB)	Attenuation (dB)	Dimension (mm)
KHB0914A01	CT1	914.5	$f_0 \pm 1$	3.5	869.5MHz : 35	3 × 6 × 7.71
					959.5MHz : 25	
KHB0959A01	CT1	959.5	$f_0 \pm 1$	3.5	914.5MHz : 35	3 × 6 × 7.31
					1004.5MHz : 25	
KHB1795A01	TD-SCDMA	1795	$f_0 \pm 10$	2.0	2000MHz : 30	1.9 × 3.8 × 4.4
KHB1890B01	DECT	1890	$f_0 \pm 10$	1.5	1660 ~ 1680MHz : 30	2.4 × 4.4 × 3.8
					1770 ~ 1790MHz : 10	
					3760 ~ 3800MHz : 10	
					5640 ~ 5700MHz : 10	
KHB1890C01	DECT	1890	$f_0 \pm 10$	2.0	1660 ~ 1680MHz : 45	2 × 4 × 5.6
					1770 ~ 1790MHz : 15	
					3760 ~ 3800MHz : 35	
					5640 ~ 5700MHz : 10	
KHB1906A01	PHS	1906.5	$f_0 \pm 12.5$	1.9	1415 ~ 1400MHz : 10	2 × 4 × 4
					1655 ~ 1680MHz : 40	
KHB2442A01	US-C/P	2442	$f_0 \pm 52.5$	2.0	1942MHz : 35	2 × 4 × 4.4
					2192MHz : 16	
					2692MHz : 12	
					2942MHz : 25	
KHB2403A01	US-C/P	2404.5	$f_0 \pm 1$	3.5	Fo+21.4MHz:10	7.3 × 3.6 × 6.9
KHB2403B01	US-C/P	2404.5	$f_0 \pm 1$	3.5	Fo+21.4MHz:23	5.9 × 3.6 × 6.8
KHB2475A01	US-C/P	2475.95	$f_0 \pm 1$	3.5	Fo-21.4MHz:10	7.3 × 3.6 × 6.7
KHB2475B01	US-C/P	2475.95	$f_0 \pm 1$	3.5	Fo-21.4MHz:23	5.9 × 3.6 × 6.6
KHB2450A01	Bluetooth	2450	$f_0 \pm 50$	2.0	1950MHz : 40	2 × 4 × 4.4
					2200MHz : 15	
					2700MHz : 12	
					2950MHz : 25	

## ► Dielectric Duplexer

Part No.	Application	Freq (MHz)	Band Width (MHz)	Insertion Loss (dB)	Attenuation (dB)	Dimension (mm)
KHX3681A01	CDMA	Tx : 836.5	$f_0 \pm 12.5$	2.8	869 ~ 894MHz : 43	3.8 × 21.5 × 9.7
		Rx : 881.5	$f_0 \pm 12.5$	3.3	824 ~ 849MHz : 56	
KHX3681B02	CDMA	Tx : 836.5	$f_0 \pm 12.5$	3.2	869 ~ 894MHz : 40	3.3 × 15.7 × 9.5
		Rx : 881.5	$f_0 \pm 12.5$	4.0	824 ~ 849MHz : 55	
KHX3681C01	CDMA	Tx : 836.5	$f_0 \pm 12.5$	3.2	869 ~ 894MHz : 40	2.8 × 14.2 × 9.5
		Rx : 881.5	$f_0 \pm 12.5$	4.0	824 ~ 849MHz : 55	
KHX6555A02	K-PCS	Tx : 1765	$f_0 \pm 15$	2.7	1840 ~ 1870MHz : 40	2.25 × 13.4 × 7.45
		Rx : 1855	$f_0 \pm 15$	3.4	1750 ~ 1780MHz : 55	
KHX6555B01	K-PCS	Tx : 1765	$f_0 \pm 15$	2.7	1840 ~ 1870MHz : 40	2.0 × 11 × 7.45
		Rx : 1855	$f_0 \pm 15$	3.4	1750 ~ 1780MHz : 55	
KHX8060A01	US-PCS	TX:1880	$f_0 \pm 30$	3.6	1930 ~ 1990MHz : 40	4.1 × 26.5 × 6.5
		RX:1960	$f_0 \pm 30$	4.2	1850 ~ 1910MHz : 55	
*KHX8060B01	US-PCS	TX:1880	$f_0 \pm 30$	3.8	1930 ~ 1990MHz : 40	4.0 × 18.2 × 6.5
		RX:1960	$f_0 \pm 30$	4.5	1850 ~ 1910MHz : 55	
*KHX5040A01	IMT2000	Tx : 1950	$f_0 \pm 30$	3.0	2110 ~ 2170MHz : 42	2.6 × 15.5 × 6.7
		Rx : 2140	$f_0 \pm 30$	3.5	1850 ~ 1910MHz : 55	

Note) \* : Under development

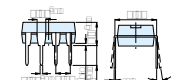

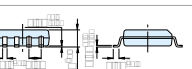






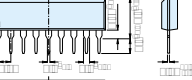
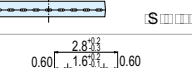
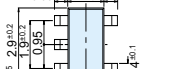

## ► Dielectric Resonator

Part No.	Dielectric Resonator		Support		Resonant Frequency Range (GHz)
	Diameter (mm)	Thickness (mm)	Diameter (mm)	Thickness (mm)	
KHR0515A01	10.80	4.10	7.40	2.00	5.00 ~ 5.50
KHR0575A01	10.80	2.80	7.40	2.60	5.50 ~ 6.00
KHR0975A01	5.60	2.00	3.80	1.40	9.35 ~ 9.85
KHR1060A01	4.70	2.20	3.20	1.00	10.20 ~ 10.80
KHR1075A01	4.70	2.00	3.20	1.00	10.50 ~ 11.00
KHR1130A01	4.70	1.70	3.20	1.00	11.00 ~ 11.50

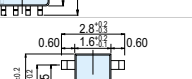
# Integrated Circuit

## Industrial & General Purpose ICs

### OP Amp.

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA324F	Quad OP Amp.	$\pm 18$ or 36	FLP-14	
KIA324P	Quad OP Amp.	$\pm 18$ or 36	DIP-14	
KIA358F	Dual OP Amp.	$\pm 18$ or 36	FLP-8	
KIA75S358F	Single OP Amp.	$\pm 18$ or 36	TSV	
KIA358P	Dual OP Amp.	$\pm 18$ or 36	DIP-8	
KIA358S	Dual OP Amp.	$\pm 18$ or 36	SIP-9	
KIA4558F	Dual Low Noise OP Amp.	$\pm 18$ or 36	FLP-8	
KIA75S558F	Single Low Noise OP Amp.	$\pm 18$ or 36	TSV	
KIA4558P	Dual Low Noise OP Amp.	$\pm 18$ or 36	DIP-8	
KIA4558S	Dual Low Noise OP Amp.	$\pm 18$ or 36	SIP-9	
KIA4559F	Dual Low Noise OP Amp.	$\pm 18$ or 36	FLP-8	
KIA4559P	Dual Low Noise OP Amp.	$\pm 18$ or 36	DIP-8	
KIA4559S	Dual Low Noise OP Amp.	$\pm 18$ or 36	SIP-9	

### Comparator

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA339F	Quad Voltage Comparator	$\pm 18$ or 36	FLP-14	
KIA339P	Quad Voltage Comparator	$\pm 18$ or 36	DIP-14	
KIA393F	Dual Voltage Comparator	$\pm 18$ or 36	FLP-8	
KIA75S393F	Single Voltage Comparator	$\pm 18$ or 36	TSV	
KIA393P	Dual Voltage Comparator	$\pm 18$ or 36	DIP-8	
KIA393S	Dual Voltage Comparator	$\pm 18$ or 36	SIP-9	

■ Voltage Stabilizer

Type No.	Mark	Function	Voltage Reference Tolerance (%)	Operating Voltage(V)	Package	Outline (Unit: mm )
* KIA431B	-	Shunt Regulator	0.5	2.5 ~36	TO-92	
* KIA431BF	3C	Shunt Regulator	0.5	2.5 ~36	SOT-89	
* KIA2431BP	-	Shunt Regulator	0.5	2.5 ~36	TO-92	
* KIA2431BS	24C	Shunt Regulator	0.5	2.5 ~36	TSM	
* KIA2431BT	24C	Shunt Regulator	0.5	2.5 ~36	TSV	
KIA431A	-	Shunt Regulator	1	2.5 ~36	TO-92	
KIA431AF	3B	Shunt Regulator	1	2.5 ~36	SOT-89	
* KIA2431AP	-	Shunt Regulator	1	2.5 ~36	TO-92	
* KIA2431AS	24B	Shunt Regulator	1	2.5 ~36	TSM	
* KIA2431AT	24B	Shunt Regulator	1	2.5 ~36	TSV	
* KIA2431P	-	Shunt Regulator	1.5	2.5 ~36	TO-92	
* KIA2431S	24A	Shunt Regulator	1.5	2.5 ~36	TSM	
* KIA2431T	24A	Shunt Regulator	1.5	2.5 ~36	TSV	
KIA431	-	Shunt Regulator	2.2	2.5 ~36	TO-92	
KIA431F	3A	Shunt Regulator	2.2	2.5 ~36	SOT-89	

Note) \* : Under development

## ■ Voltage Detector (Active Low)

Type No.	Mark	Max. Ratings		Detecting Volts. Vs (V)			Low-Level Output Volts. Vol (V)	Hysteresis Volts. ΔVs (mV)			Circuit Current at on. IccH(μA)		Circuit Current at off. IccH(μA)		Package	Outline (Unit: mm)
		VCC (V)	Pd (mW)	( $R_L=200\Omega, Vol \leq 0.4V$ )			$R_L=200\Omega$	$R_L=200\Omega$			VCC=VsmIn-0.05V		VCC=5.25V			
				Min.	Typ.	Max.	Max.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.		
KIA7019AF	6A	-0.3 ~ +15.0	500	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	SOT-89	
KIA7021AF	6B	-0.3 ~ +15.0	500	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50		
KIA7023AF	6C	-0.3 ~ +15.0	500	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50		
KIA7025AF	6D	-0.3 ~ +15.0	500	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50		
KIA7027AF	6E	-0.3 ~ +15.0	500	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50		
KIA7029AF	6F	-0.3 ~ +15.0	500	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50		
KIA7031AF	6G	-0.3 ~ +15.0	500	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50		
KIA7032AF	6H	-0.3 ~ +15.0	500	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50		
KIA7033AF	6J	-0.3 ~ +15.0	500	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50		
KIA7034AF	6K	-0.3 ~ +15.0	500	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50		
KIA7035AF	6L	-0.3 ~ +15.0	500	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50		
KIA7036AF	6M	-0.3 ~ +15.0	500	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50		
KIA7039AF	6N	-0.3 ~ +15.0	500	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50		
KIA7042AF	6P	-0.3 ~ +15.0	500	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50		
KIA7045AF	6R	-0.3 ~ +15.0	500	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50		
KIA7019AP	-	-0.3 ~ +15.0	400	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50		
KIA7021AP	-	-0.3 ~ +15.0	400	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50		
KIA7023AP	-	-0.3 ~ +15.0	400	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50		
KIA7025AP	-	-0.3 ~ +15.0	400	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50		
KIA7027AP	-	-0.3 ~ +15.0	400	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50		
KIA7029AP	-	-0.3 ~ +15.0	400	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50		
KIA7031AP	-	-0.3 ~ +15.0	400	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50		
KIA7032AP	-	-0.3 ~ +15.0	400	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50		
KIA7033AP	-	-0.3 ~ +15.0	400	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50		
KIA7034AP	-	-0.3 ~ +15.0	400	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50		
KIA7035AP	-	-0.3 ~ +15.0	400	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50		
KIA7036AP	-	-0.3 ~ +15.0	400	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50		
KIA7039AP	-	-0.3 ~ +15.0	400	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50		
KIA7042AP	-	-0.3 ~ +15.0	400	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50		
KIA7045AP	-	-0.3 ~ +15.0	400	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50		

## ■ Voltage Detector (Active High)

Type No.	Mark	Max. Ratings		Detecting Volts. Vs (V)			Low-Level Output Volts. Vol (V)	Hysteresis Volts. ΔVs (mV)			Circuit Current at on. IccH(μA)		Circuit Current at off. IccL(μA)		Package	Outline (Unit: mm)
		VCC (V)	Pd (mW)	( $R_L=4.7k\Omega, Vol \geq 0.4V$ )			$R_L=4.7k\Omega$	$R_L=4.7k\Omega$			VCC=VsmIn-0.05V		VCC=5.25V			
				Min.	Typ.	Max.	Min.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.		
KIA7419F	4A	-0.3 ~ +7.5	500	1.75	1.9	2.05	Vcc-0.4	20	50	100	300	500	30	70	SOT-89	
KIA7421F	4B	-0.3 ~ +7.5	500	1.95	2.1	2.25	Vcc-0.4	20	50	100	300	500	30	70		
KIA7423F	4C	-0.3 ~ +7.5	500	2.15	2.3	2.45	Vcc-0.4	20	50	100	300	500	30	70		
KIA7425F	4D	-0.3 ~ +7.5	500	2.35	2.5	2.65	Vcc-0.4	30	50	100	300	500	30	50		
KIA7427F	4E	-0.3 ~ +7.5	500	2.55	2.7	2.85	Vcc-0.4	30	50	100	300	500	30	50		
KIA7429F	4F	-0.3 ~ +7.5	500	2.75	2.9	3.05	Vcc-0.4	30	50	100	300	500	30	50		
KIA7431F	4G	-0.3 ~ +7.5	500	2.95	3.1	3.25	Vcc-0.4	30	50	100	300	500	30	50		
KIA7432F	4H	-0.3 ~ +7.5	500	3.05	3.2	3.35	Vcc-0.4	30	50	100	300	500	30	50		
KIA7433F	4J	-0.3 ~ +7.5	500	3.15	3.3	3.45	Vcc-0.4	30	50	100	300	500	30	50		
KIA7434F	4K	-0.3 ~ +7.5	500	3.25	3.4	3.55	Vcc-0.4	30	50	100	300	500	30	50		
KIA7435F	4L	-0.3 ~ +7.5	500	3.35	3.5	3.65	Vcc-0.4	30	50	100	300	500	30	50		
KIA7436F	4M	-0.3 ~ +7.5	500	3.45	3.6	3.75	Vcc-0.4	30	50	100	300	500	30	50		
KIA7439F	4N	-0.3 ~ +7.5	500	3.7	3.9	4.1	Vcc-0.4	30	50	100	300	500	30	50		
KIA7442F	4P	-0.3 ~ +7.5	500	4	4.2	4.4	Vcc-0.4	30	50	100	300	500	30	50		
KIA7445F	4R	-0.3 ~ +7.5	500	4.3	4.5	4.7	Vcc-0.4	30	50	100	300	500	30	50		
KIA7419P	-	-0.3 ~ +7.5	400	1.75	1.9	2.05	Vcc-0.4	20	50	100	300	500	30	70		
KIA7421P	-	-0.3 ~ +7.5	400	1.95	2.1	2.25	Vcc-0.4	20	50	100	300	500	30	70		
KIA7423P	-	-0.3 ~ +7.5	400	2.15	2.3	2.45	Vcc-0.4	20	50	100	300	500	30	70		
KIA7425P	-	-0.3 ~ +7.5	400	2.35	2.5	2.65	Vcc-0.4	30	50	100	300	500	30	50		
KIA7427P	-	-0.3 ~ +7.5	400	2.55	2.7	2.85	Vcc-0.4	30	50	100	300	500	30	50		
KIA7429P	-	-0.3 ~ +7.5	400	2.75	2.9	3.05	Vcc-0.4	30	50	100	300	500	30	50		
KIA7431P	-	-0.3 ~ +7.5	400	2.95	3.1	3.25	Vcc-0.4	30	50	100	300	500	30	50		
KIA7432P	-	-0.3 ~ +7.5	400	3.05	3.2	3.35	Vcc-0.4	30	50	100	300	500	30	50		
KIA7433P	-	-0.3 ~ +7.5	400	3.15	3.3	3.45	Vcc-0.4	30	50	100	300	500	30	50		
KIA7434P	-	-0.3 ~ +7.5	400	3.25	3.4	3.55	Vcc-0.4	30	50	100	300	500	30	50		
KIA7435P	-	-0.3 ~ +7.5	400	3.35	3.5	3.65	Vcc-0.4	30	50	100	300	500	30	50		
KIA7436P	-	-0.3 ~ +7.5	400	3.45	3.6	3.75	Vcc-0.4	30	50	100	300	500	30	50		
KIA7439P	-	-0.3 ~ +7.5	400	3.7	3.9	4.1	Vcc-0.4	30	50	100	300	500	30	50		
KIA7442P	-	-0.3 ~ +7.5	400	4	4.2	4.4	Vcc-0.4	30	50	100	300	500	30	50		
KIA7445P	-	-0.3 ~ +7.5	400	4.3	4.5	4.7	Vcc-0.4	30	50	100	300	500	30	50		

■ 1.25V Adjustable Voltage Detector (Active Low)

Type No.	Max. Ratings			Detecting Volts. Vs (V)			Supply Voltage Range VCC			Hysteresis Volts. $\Delta$ Vs (mV)			Circuit Current at On. IccL( $\mu$ A)				Circuit Current at Off. IccH( $\mu$ A)				Package	Outline (Unit: mm)
	VCC (V)	ISINK (mA)	Pd (mW)	Min.	Typ.	Max.	Ta=-40 ~ +85 °C			VCC=5V			VCC=5V, VIN=1.2V		VCC=5V, VIN=1.5V							
							Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.						
KIA7125F	18	6	240	1.2	1.25	1.3	2	-	17	9	15	23	B	360	B	540	B	360	B	540	FLP-8	
KIA7125P	18	6	500	1.2	1.25	1.3	2	-	17	9	15	23	B	360	B	540	B	360	B	540	DIP-8	

Note) B Type: Open collector type.

■ 30mA 3-Terminal Low Drop Voltage Regulators (Positive)

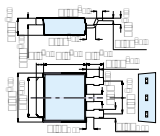
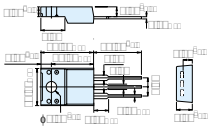
Type No.	Mark	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDR0P(V)		Package	Outline (Unit: mm)		
		VIN (V)	Io (mA)	Pp(mW) (Ta=25 °C)	(Tj=25 °C)			(Tj=25 °C)			(Tj=25 °C)			IOUT(mA)	Iout (mA)				
					Min.	Typ.	Max.	Min.	Max.	Max.	Min.	Max.	Max.					Min.	Max.
* KIA78DS05BF	8M	29	30	500	4.75	5	5.25	5.35	26	10	9	16	50	5	30	0.1	5	SOT-89	
KIA78DS05BP	-	29	30	600	4.75	5	5.25	5.35	26	10	9	16	50	5	30	0.1	5	TO-92	

Note) \*: Under development

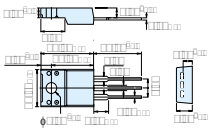
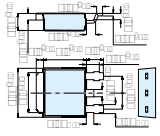
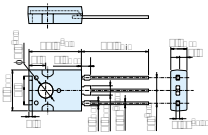
■ 0.15A 3-Terminal Voltage Regulators (Positive)

Type No.	Mark	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDR0P(V)		Package	Outline (Unit: mm)	
		VIN (V)	Io (A)	Pp(mW) (Ta=25 °C)	(Tj=25 °C)			(Tj=25 °C)			(Tj=25 °C)			IOUT(mA)	Iout (mA)			
					Min.	Typ.	Max.	Min.	Max.	Max.	Min.	Max.	Max.					Min.
KIA78L05F	8A	35	0.15	500	4.75	5	5.25	10	150	7	20	60	1	100	1.7	40	SOT-89	
KIA78L06F	8B	35	0.15	500	5.7	6	6.3	11	150	8.1	21	70	1	100	1.7	40		
KIA78L08F	8D	35	0.15	500	7.6	8	8.4	14	175	10.5	23	80	1	100	1.7	40		
KIA78L09F	8E	35	0.15	500	8.55	9	9.45	15	200	11.4	24	90	1	100	1.7	40		
KIA78L10F	8F	35	0.15	500	9.5	10	10.5	16	230	12.5	25	90	1	100	1.7	40		
KIA78L12F	8G	35	0.15	500	11.4	12	12.6	19	250	14.5	27	100	1	100	1.7	40		
KIA78L15F	8I	35	0.15	500	14.25	15	15.75	23	300	17.5	30	150	1	100	1.7	40		
KIA78L18F	8J	40	0.15	500	7.1	18	18.9	27	325	21.4	33	170	1	100	1.7	40		
KIA78L20F	8K	40	0.15	500	19	20	21	29	330	23.5	35	180	1	100	1.7	40		
KIA78L24F	8L	40	0.15	500	22.8	24	25.2	33	350	27.5	38	200	1	100	1.7	40		
KIA78S05P	-	35	0.15	600	4.8	5	5.2	10	150	7	20	60	1	100	1.7	40	TO-92	
KIA78S06P	-	35	0.15	600	5.76	6	6.24	11	150	8.1	21	70	1	100	1.7	40		
KIA78S08P	-	35	0.15	600	7.7	8	8.3	14	175	10.5	23	80	1	100	1.7	40		
KIA78S09P	-	35	0.15	600	8.64	9	9.36	15	200	11.4	24	90	1	100	1.7	40		
KIA78S10P	-	35	0.15	600	9.6	10	10.4	16	230	12.5	25	90	1	100	1.7	40		
KIA78S12P	-	35	0.15	600	11.5	12	12.5	19	250	14.5	27	100	1	100	1.7	40		
KIA78S15P	-	35	0.15	600	14.4	15	15.6	23	300	17.5	30	150	1	100	1.7	40		
KIA78S18P	-	40	0.15	600	17.3	18	18.7	27	325	21.4	33	170	1	100	1.7	40		
KIA78S20P	-	40	0.15	600	19.2	20	20.8	29	330	23.5	35	180	1	100	1.7	40		
KIA78S24P	-	40	0.15	600	23	24	25	33	350	27.5	38	200	1	100	1.7	40		
KIA78L05BP	-	35	0.15	800	4.8	5	5.2	10	150	7	20	60	1	100	1.7	40	TO-92L	
KIA78L06BP	-	35	0.15	800	5.76	6	6.24	11	150	8.1	21	70	1	100	1.7	40		
KIA78L08BP	-	35	0.15	800	7.7	8	8.3	14	175	10.5	23	80	1	100	1.7	40		
KIA78L09BP	-	35	0.15	800	8.64	9	9.36	15	200	11.4	24	90	1	100	1.7	40		
KIA78L10BP	-	35	0.15	800	9.6	10	10.4	16	230	12.5	25	90	1	100	1.7	40		
KIA78L12BP	-	35	0.15	800	11.5	12	12.5	19	250	14.5	27	100	1	100	1.7	40		
KIA78L15BP	-	35	0.15	800	14.4	15	15.6	23	300	17.5	30	150	1	100	1.7	40		
KIA78L18BP	-	40	0.15	800	17.3	18	18.7	27	325	21.4	33	170	1	100	1.7	40		
KIA78L20BP	-	40	0.15	800	19.2	20	20.8	29	330	23.5	35	180	1	100	1.7	40		
KIA78L24BP	-	40	0.15	800	23	24	25	33	350	27.5	38	200	1	100	1.7	40		

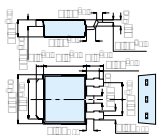
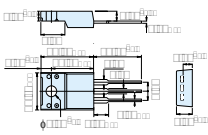
## ■0.25A 3-Terminal Low Drop Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)	
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Ta=-40~85°C)			VIN(V)	(Tj=25°C)		VIN(V)	(Tj=25°C)		IOUT(mA)	IOUT (mA)				
				Min.	Typ.	Max.		Max.	Min.		Max.	Typ.						
KIA78DL05F	29	0.25	12	4.5	5	5.5	5.35	26	30	6	26	50	10	200	0.3	50	DPAK	
KIA78DL06F	29	0.25	12	5.4	6	6.6	6.35	26	36	7	26	60	10	200	0.3	50		
KIA78DL08F	29	0.25	12	7.2	8	8.8	8.35	26	45	9	26	80	10	200	0.3	50		
KIA78DL09F	29	0.25	12	8.1	9	9.9	9.35	26	50	10	26	90	10	200	0.3	50		
KIA78DL10F	29	0.25	12	9	10	11	10.35	26	60	11	26	100	10	200	0.3	50		
KIA78DL12F	29	0.25	12	10.8	12	13.2	12.35	26	70	13	26	120	10	200	0.3	50		
KIA78DL15F	29	0.25	12	13.5	15	16.5	15.35	26	80	16	26	150	10	200	0.3	50		
KIA78DL05PI	29	0.25	20	4.5	5	5.5	5.35	26	30	6	26	50	10	200	0.3	50	TO-220IS	
KIA78DL06PI	29	0.25	20	5.4	6	6.6	6.35	26	36	7	26	60	10	200	0.3	50		
KIA78DL08PI	29	0.25	20	7.2	8	8.8	8.35	26	45	9	26	80	10	200	0.3	50		
KIA78DL09PI	29	0.25	20	8.1	9	9.9	9.35	26	50	10	26	90	10	200	0.3	50		
KIA78DL10PI	29	0.25	20	9	10	11	10.35	26	60	11	26	100	10	200	0.3	50		
KIA78DL12PI	29	0.25	20	10.8	12	13.2	12.35	26	70	13	26	120	10	200	0.3	50		
KIA78DL15PI	29	0.25	20	13.5	15	16.5	15.35	26	80	16	26	150	10	200	0.3	50		

## ■0.5A 3-Terminal Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd (W) (Ta=25°C)	(Tj=25°C)			VIN (V)	(Tj=25°C)		VIN(V)	(Tj=25°C)		IOUT(mA)	IOUT (mA)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.			Min.		
KIA78M05PI	35	0.5	20.8	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	TO-220IS	
KIA78M08PI	35	0.5	20.8	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500		
KIA78M12PI	35	0.5	20.8	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500		
KIA78M15PI	35	0.5	20.8	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500		
KIA78M05F	35	0.5	1.3	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	DPAK	
KIA78M08F	35	0.5	1.3	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500		
KIA78M12F	35	0.5	1.3	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500		
KIA78M15F	35	0.5	1.3	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500		
KIA78M05T	35	0.5	1.5	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	TO-126	
KIA78M08T	35	0.5	1.5	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500		
KIA78M12T	35	0.5	1.5	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500		
KIA78M15T	35	0.5	1.5	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500		

## ■1A 3-Terminal Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Tj=25°C)			VIN (V)	(Tj=25°C)		VIN(V)	(Tj=25°C)		IOUT(mA)	IOUT (A)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.			Min.(mA)		
KIA7805AF	35	1	12	4.8	5	5.2	10	100	7	25	100	5	1.4	2	1	DPAK	
KIA7806AF	35	1	12	5.75	6	6.25	11	120	8	25	120	5	1.4	2	1		
KIA7808AF	35	1	12	7.7	8	8.3	14	160	10.5	25	160	5	1.4	2	1		
KIA7809AF	35	1	12	8.64	9	9.36	15	180	11.5	26	180	5	1.4	2	1		
KIA7810AF	35	1	12	9.6	10	10.4	16	200	12.5	27	200	5	1.4	2	1		
KIA7812AF	35	1	12	11.5	12	12.5	19	240	14.5	30	240	5	1.4	2	1		
KIA7815AF	35	1	12	14.4	15	15.6	23	300	17.5	30	300	5	1.4	2	1		
KIA7818AF	40	1	12	17.3	18	18.7	27	360	21	33	360	5	1.4	2	1		
KIA7820AF	40	1	12	19.2	20	20.8	29	400	23	35	400	5	1.4	2	1		
KIA7824AF	40	1	12	23	24	25	33	480	27	38	480	5	1.4	2	1		
KIA7805API	35	1	20.8	4.8	5	5.2	10	100	7	25	100	5	1.4	2	1	TO-220IS	
KIA7806API	35	1	20.8	5.75	6	6.25	11	120	8	25	120	5	1.4	2	1		
KIA7808API	35	1	20.8	7.7	8	8.3	14	160	10.5	25	160	5	1.4	2	1		
KIA7809API	35	1	20.8	8.64	9	9.36	15	180	11.5	26	180	5	1.4	2	1		
KIA7810API	35	1	20.8	9.6	10	10.4	16	200	12.5	27	200	5	1.4	2	1		
KIA7812API	35	1	20.8	11.5	12	12.5	19	240	14.5	30	240	5	1.4	2	1		
KIA7815API	35	1	20.8	14.4	15	15.6	23	300	17.5	30	300	5	1.4	2	1		
KIA7818API	40	1	20.8	17.3	18	18.7	27	360	21	33	360	5	1.4	2	1		
KIA7820API	40	1	20.8	19.2	20	20.8	29	400	23	35	400	5	1.4	2	1		
KIA7824API	40	1	20.8	23	24	25	33	480	27	38	480	5	1.4	2	1		



■1A SMD Type Low Drop Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)		VIN(V)	(Ta=25℃)		VIN (V)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.(mA)		Max.(A)		
* KIA78D25F	15	1	1.3	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
* KIA78D30F	15	1	1.3	2.925	3	3.075	4.7	2.5	3.7	10	2	5	1	0.5	0.95Vo	
KIA78D33F	15	1	1.3	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
* KIA78D35F	15	1	1.3	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
* KIA78D37F	15	1	1.3	3.608	3.7	3.792	5.4	2.5	4.4	10	2	5	1	0.5	0.95Vo	
KIA78D05F	35	1	1.3	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78D06F	35	1	1.3	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78D08F	35	1	1.3	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78D09F	35	1	1.3	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78D10F	35	1	1.3	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78D12F	35	1	1.3	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78D15F	35	1	1.3	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	

Note) \* : Under development

■1A 3-Terminal Adjustable Voltage Regulator (Positive)

Type No.	Max. Ratings			Reg. Line (%/V)(Ta=25℃)			Reg. Load (%)			Adjustable Pin Current Iadj (μA)			Current Limit IO(MAX) (A) (VIN-VOUT) ≤15V, P ≤P <sub>MAX</sub>			Package	Outline (Unit: mm)
	VIN-VOUT (V)	IO (A)	Pd (W)	IO=10(mA)			(Ta=25℃)			Min.	Typ.	Max.	Min.	Typ.	Max.		
				Max.	Min.	Max.	Max.	Min.	Max.								
KIA317PI	40	1.5	Internally Limited	0.04	3	40	0.5	10	I <sub>MAX</sub>	-	50	100	1.5	2.2	3.4	TO-220IS	

■1A 4-Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

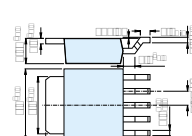
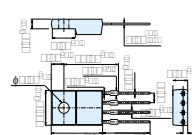
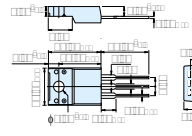
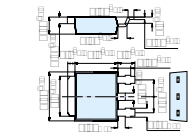
Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)		VIN(V)	(Ta=25℃)		VIN (V)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.(mA)		Max.(A)		
* KIA78R25API	15	1	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
* KIA78R30API	15	1	15	2.925	3	3.075	4.7	2.5	3.7	10	2	5	1	0.5	0.95Vo	
KIA78R33API	15	1	15	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
* KIA78R35API	15	1	15	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
* KIA78R37API	15	1	15	3.608	3.7	3.792	5.4	2.5	4.4	10	2	5	1	0.5	0.95Vo	
KIA78R05API	35	1	15	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78R06API	35	1	15	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78R08API	35	1	15	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78R09API	35	1	15	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78R10API	35	1	15	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78R12API	35	1	15	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78R15API	35	1	15	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	

Note) \* : Under development

■1A 5-Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)		VIN(V)	(Ta=25℃)		VIN (V)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.(mA)		Max.(A)		
* KIA78R25F	15	1	8	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
* KIA78R30F	15	1	8	2.925	3	3.075	4.7	2.5	3.7	10	2	5	1	0.5	0.95Vo	
KIA78R33F	15	1	8	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
* KIA78R35F	15	1	8	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
* KIA78R37F	15	1	8	3.608	3.7	3.792	5.4	2.5	4.4	10	2	5	1	0.5	0.95Vo	
KIA78R05F	35	1	8	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78R06F	35	1	8	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78R08F	35	1	8	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78R09F	35	1	8	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78R10F	35	1	8	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78R12F	35	1	8	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78R15F	35	1	8	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	

Note) \* : Under development



## ■2A 4-Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN(V)	(Ta=25℃)	VIN(V)	(Ta=25℃)	IOUT		(Ta=25℃)	VIN (V)		
				Min.	Typ.	Max.					Max.	Min.(mA)				
* KIA278R25PI	15	2	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	2	0.5	0.95Vo	
* KIA278R30PI	15	2	15	2.925	3	3.075	4.7	2.5	3.7	10	2	5	2	0.5	0.95Vo	
KIA278R33PI	15	2	15	3.22	3.3	3.38	5	2.5	4	10	2	5	2	0.5	0.95Vo	
* KIA278R35PI	15	2	15	3.143	3.5	3.587	5.2	2.5	4.2	10	2	5	2	0.5	0.95Vo	
* KIA278R37PI	15	2	15	3.608	3.7	3.792	5.4	2.5	4.4	10	2	5	2	0.5	0.95Vo	
KIA278R05PI	35	2	15	4.88	5	5.12	7	2.5	6	12	2	5	2	0.5	0.95Vo	
KIA278R06PI	35	2	15	5.85	6	6.15	8	2.5	7	15	2	5	2	0.5	0.95Vo	
KIA278R08PI	35	2	15	7.8	8	8.2	10	2.5	9	25	2	5	2	0.5	0.95Vo	
KIA278R09PI	35	2	15	8.78	9	9.22	15	2.5	10	25	2	5	2	0.5	0.95Vo	
KIA278R10PI	35	2	15	9.75	10	10.25	16	2.5	11	26	2	5	2	0.5	0.95Vo	
KIA278R12PI	35	2	15	11.7	12	12.3	18	2.5	13	29	2	5	2	0.5	0.95Vo	
KIA278R15PI	35	2	15	14.7	15	15.3	21	2.5	16	32	2	5	2	0.5	0.95Vo	

(Note) \* : Under development

## ■3A Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)	VIN(V)	(Ta=25℃)	IOUT		(Ta=25℃)	VIN (V)		
				Min.	Typ.	Max.					Max.	Min.(mA)				
* KIA378R25PI	15	3	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	3	0.5	0.95Vo	
* KIA378R30PI	15	3	15	2.925	3	3.075	4.7	2.5	3.7	10	2	5	3	0.5	0.95Vo	
KIA378R33PI	15	3	15	3.22	3.3	3.38	5	2.5	4	10	2	5	3	0.5	0.95Vo	
* KIA378R35PI	15	3	15	3.143	3.5	3.587	5.2	2.5	4.2	10	2	5	3	0.5	0.95Vo	
* KIA378R37PI	15	3	15	3.608	3.7	3.792	5.4	2.5	4.4	10	2	5	3	0.5	0.95Vo	
KIA378R05PI	35	3	15	4.88	5	5.12	7	2.5	6	12	2	5	3	0.5	0.95Vo	
KIA378R06PI	35	3	15	5.85	6	6.15	8	2.5	7	15	2	5	3	0.5	0.95Vo	
KIA378R08PI	35	3	15	7.8	8	8.2	10	2.5	9	25	2	5	3	0.5	0.95Vo	
KIA378R09PI	35	3	15	8.78	9	9.22	15	2.5	10	25	2	5	3	0.5	0.95Vo	
KIA378R10PI	35	3	15	9.75	10	10.25	16	2.5	11	26	2	5	3	0.5	0.95Vo	
KIA378R12PI	35	3	15	11.7	12	12.3	18	2.5	13	29	2	5	3	0.5	0.95Vo	
KIA378R15PI	35	3	15	14.7	15	15.3	21	2.5	16	32	2	5	3	0.5	0.95Vo	

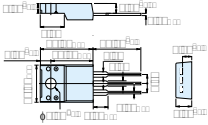
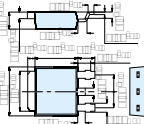
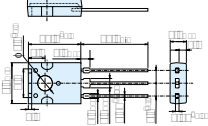
(Note) \* : Under development

## ■0.15A 3-Terminal Voltage Regulators (Negative)

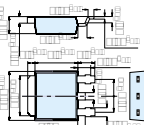
Type No.	Mark	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
		VIN (V)	IO (A)	Pd(mW) (Ta=25℃)	(Tj=25℃)			VIN (V)	(Tj=25℃)		(Tj=25℃)		(Tj=25℃)	IOUT (mA)			
				Min.	Typ.	Max.	Max.		Min.	Max.	Max.	Min.	Max.	Typ.	Max.		
KIA79L05F	9A	-35	0.15	500	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	
KIA79L06F	9B	-35	0.15	500	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40	
KIA79L08F	9C	-35	0.15	500	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40	
KIA79L09F	9D	-35	0.15	500	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40	
KIA79L10F	9E	-35	0.15	500	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40	
KIA79L12F	9F	-35	0.15	500	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40	
* KIA79L15F	9G	-35	0.15	500	-15.6	-15	-14.4	-23	300	-30	-17.5	150	1	100	1.7	40	
* KIA79L18F	9H	-40	0.15	500	-18.7	-18	-17.3	-27	325	-33	-20.7	170	1	100	1.7	40	
* KIA79L20F	9I	-40	0.15	500	-20.8	-20	-19.2	-29	330	-35	-23.5	180	1	100	1.7	40	
* KIA79L24F	9J	-40	0.15	500	-25	-24	-23	-33	350	-38	-27	200	1	100	1.7	40	
KIA79S05P	-	-35	0.15	600	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	
KIA79S06P	-	-35	0.15	600	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40	
KIA79S08P	-	-35	0.15	600	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40	
KIA79S09P	-	-35	0.15	600	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40	
KIA79S10P	-	-35	0.15	600	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40	
KIA79S12P	-	-35	0.15	600	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40	
* KIA79S15P	-	-35	0.15	600	-15.6	-15	-14.4	-23	300	-30	-17.5	150	1	100	1.7	40	
* KIA79S18P	-	-40	0.15	600	-18.7	-18	-17.3	-27	325	-33	-20.7	170	1	100	1.7	40	
* KIA79S20P	-	-40	0.15	600	-20.8	-20	-19.2	-29	330	-35	-23.5	180	1	100	1.7	40	
* KIA79S24P	-	-40	0.15	600	-25	-24	-23	-33	350	-38	-27	200	1	100	1.7	40	
KIA79L05BP	-	-35	0.15	800	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	
KIA79L06BP	-	-35	0.15	800	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40	
KIA79L08BP	-	-35	0.15	800	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40	
KIA79L09BP	-	-35	0.15	800	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40	
KIA79L10BP	-	-35	0.15	800	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40	
KIA79L12BP	-	-35	0.15	800	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40	
* KIA79L15BP	-	-35	0.15	800	-15.6	-15	-14.4	-23	300	-30	-17.5	150	1	100	1.7	40	
* KIA79L18BP	-	-40	0.15	800	-18.7	-18	-17.3	-27	325	-33	-20.7	170	1	100	1.7	40	
* KIA79L20BP	-	-40	0.15	800	-20.8	-20	-19.2	-29	330	-35	-23.5	180	1	100	1.7	40	
* KIA79L24BP	-	-40	0.15	800	-25	-24	-23	-33	350	-38	-27	200	1	100	1.7	40	

(Note) \* : Under development

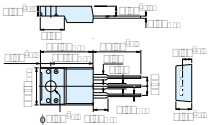
■0.5A 3-Terminal Voltage Regulators (Negative)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	Io (A)	Pd (W) (Ta=25°C)	(Tj=25°C)			VIN (V)	(Tj=25°C)		VIN(V)	(Tj=25°C)	IOUT(mA)		(Tj=25°C)	IOUT (mA)		
				Min.	Typ.	Max.		Max.	Min.			Max.	Typ.				
KIA79M05PI	-35	0.5	20.8	-4.8	-5	-5.2	-10	50	-7	-25	100	5	500	1.1	500	TO-220IS	
KIA79M08PI	-35	0.5	20.8	-7.7	-8.0	-8.3	-14	80	-10	-25	160	5	500	1.1	500		
KIA79M12PI	-35	0.5	20.8	-11.5	-12	-12.5	-19	80	-14.5	-30	240	5	500	1.1	500		
KIA79M15PI	-35	0.5	20.8	-14.4	-15	-15.6	-23	80	-17.5	-30	240	5	500	1.1	500		
KIA79M05F	-35	0.5	1.3	-4.8	-5	-5.2	-10	50	-7	-25	100	5	500	1.1	500	DPAK	
KIA79M08F	-35	0.5	1.3	-7.7	-8.0	-8.3	-14	80	-10	-25	160	5	500	1.1	500		
KIA79M12F	-35	0.5	1.3	-11.5	-12	-12.5	-19	80	-14.5	-30	240	5	500	1.1	500		
KIA79M15F	-35	0.5	1.3	-14.4	-15	-15.6	-23	80	-17.5	-30	240	5	500	1.1	500		
KIA79M05T	-35	0.5	1.5	-4.8	-5	-5.2	-10	50	-7	-25	100	5	500	1.1	500	TO-126	
KIA79M08T	-35	0.5	1.5	-7.7	-8.0	-8.3	-14	80	-10	-25	160	5	500	1.1	500		
KIA79M12T	-35	0.5	1.5	-11.5	-12	-12.5	-19	80	-14.5	-30	240	5	500	1.1	500		
KIA79M15T	-35	0.5	1.5	-14.4	-15	-15.6	-23	80	-17.5	-30	240	5	500	1.1	500		

■1A 3-Terminal Voltage Regulators (Negative)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	Io (A)	Pd(W) (Ta=25°C)	(Tj=25°C)			VIN (V)	(Tj=25°C)		VIN(V)	(Tj=25°C)	IOUT		(Tj=25°C)	IOUT (A)		
				Min.	Typ.	Max.		Max.	Min.			Max.	Max.				
KIA7905F	-35	1	12	-5.2	-5	-4.8	-10	50	-12	-8	100	5	1.5	2	1	DPAK	
KIA7906F	-35	1	12	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1		
KIA7908F	-35	1	12	-8.3	-8	-7.7	-14	80	-17	-11	160	5	1.5	2	1		
KIA7909F	-35	1	12	-9.3	-9	-8.7	-15	90	-19	-13	150	5	1.5	2	1		
KIA7910F	-35	1	12	-10.4	-10	-9.6	-16	100	-20	-14	180	5	1.5	2	1		
KIA7912F	-35	1	12	-12.5	-12	-11.5	-18	120	-22	-16	240	5	1.5	2	1		
KIA7915F	-35	1	12	-15.6	-15	-14.4	-23	150	-26	-20	300	5	1.5	2	1		
KIA7918F	-40	1	12	-18.7	-18	-17.3	-27	180	-30	-24	360	5	1.5	2	1		
KIA7920F	-40	1	12	-20.8	-20	-19.2	-30	180	-32	-26	360	5	1.5	2	1		
KIA7924F	-40	1	12	-25	-24	-23	-33	240	-36	-30	480	5	1.5	2	1		

■1A 3-Terminal Voltage Regulators (Negative)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	Io (A)	Pd(W) (Ta=25°C)	(Tj=25°C)			VIN (V)	(Tj=25°C)		VIN(V)	(Tj=25°C)	IOUT		(Tj=25°C)	IOUT (A)		
				Min.	Typ.	Max.		Max.	Min.			Max.	Max.				
KIA7905PI	-35	1	20.8	-5.2	-5	-4.8	-10	50	-12	-8	100	5	1.5	2	1	TO-220IS	
KIA7906PI	-35	1	20.8	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1		
KIA7908PI	-35	1	20.8	-8.3	-8	-7.7	-14	80	-17	-11	160	5	1.5	2	1		
KIA7909PI	-35	1	20.8	-9.3	-9	-8.7	-15	90	-19	-13	150	5	1.5	2	1		
KIA7910PI	-35	1	20.8	-10.4	-10	-9.6	-16	100	-20	-14	180	5	1.5	2	1		
KIA7912PI	-35	1	20.8	-12.5	-12	-11.5	-18	120	-22	-16	240	5	1.5	2	1		
KIA7915PI	-35	1	20.8	-15.6	-15	-14.4	-23	150	-26	-20	300	5	1.5	2	1		
KIA7918PI	-40	1	20.8	-18.7	-18	-17.3	-27	180	-30	-24	360	5	1.5	2	1		
KIA7920PI	-40	1	20.8	-20.8	-20	-19.2	-30	180	-32	-26	360	5	1.5	2	1		
KIA7924PI	-40	1	20.8	-25	-24	-23	-33	240	-36	-30	480	5	1.5	2	1		

# Integrated Circuit

## ■ Transistor Array & Interface Driver ICs

Type No.	Function	Unit	Clamp Diode	VOUT(V)	IOUT(mA)	System VCC(V)	Package	Outline (Unit: mm)
KID65001AF	Darlington Driver	7	●	50	500	Free	FLP-16	
KID65002AF	Darlington Driver	7	●	50	500	14 ~ 25		
KID65003AF	Darlington Driver	7	●	50	500	5		
KID65004AF	Darlington Driver	7	●	50	500	6 ~ 15		
KID65001AP	Darlington Driver	7	●	50	500	Free	DIP-16	
KID65002AP	Darlington Driver	7	●	50	500	14 ~ 25		
KID65003AP	Darlington Driver	7	●	50	500	5		
KID65004AP	Darlington Driver	7	●	50	500	6 ~ 15		
KID65083AF	Darlington Driver	8	●	50	500	5	FLP-20	
KID65084AF	Darlington Driver	8	●	50	500	6 ~ 15		
KID65083AP	Darlington Driver	8	●	50	500	5	DIP-18	
KID65084AP	Darlington Driver	8	●	50	500	6 ~ 15		
KID65501F	Single Driver (Common Emitter)	7		35	200	Free	FLP-16	
KID65502F	Single Driver (Common Emitter)	7		35	200	14 ~ 25		
KID65503F	Single Driver (Common Emitter)	7		35	200	5		
KID65504F	Single Driver (Common Emitter)	7		35	200	6 ~ 15		
KID65505F	Single Driver (Common Collector)	7		35	200	Free		
KID65506F	Single Driver (Common Collector)	7		35	200	5		
KID65507F	Single Driver (Isolated)	5		35	200	Free		
KID65501P	Single Driver (Common Emitter)	7		35	200	Free	DIP-16	
KID65502P	Single Driver (Common Emitter)	7		35	200	14 ~ 25		
KID65503P	Single Driver (Common Emitter)	7		35	200	5		
KID65504P	Single Driver (Common Emitter)	7		35	200	6 ~ 15		
KID65505P	Single Driver (Common Collector)	7		35	200	Free		
KID65506P	Single Driver (Common Collector)	7		35	200	5		
KID65507P	Single Driver (Isolated)	5		35	200	Free		
KID65551S	Single Driver (Common Emitter)	4		25	150	Free	SIP-9	
KID65553S	Single Driver (Common Emitter)	4		25	150	5		
KID65554S	Single Driver (Common Emitter)	4		25	150	6 ~ 15		
KID65555S	Single Driver (Common Emitter)	4		25	150	14 ~ 20		
KID65783AF	High Voltage Source Driver	8	●	50	500	5	FLP-20	
KID65783AP	High Voltage Source Driver	8	●	50	500	5	DIP-18	

## ■ Telecommunication ICs

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm : Max.)
KIA6401F	Tone Ringer	~29	FLP-8	
KIA6402F	Tone Ringer	~29	FLP-8	
KIA6401P	Tone Ringer	~29	DIP-8	
KIA6402P	Tone Ringer	~29	DIP-8	
KIA6419F	55 mW AF Power Amplifier	2~16	FLP-8	
KIA6419P	55 mW AF Power Amplifier	2~16	DIP-8	

Automobiles ICs

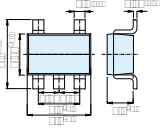
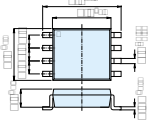
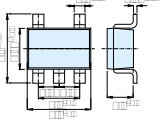
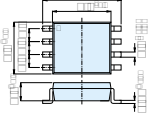
Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA4210SV	Lamp Fail Indicator	8.0 ~24	SIP-9	
KIA7125PV	1.25V Adjustable Voltage Detector (Active Low Type Delay Time Controllable)	2 ~ 17	DIP-8	
KIA7125FV	1.25V Adjustable Voltage Detector (Active Low Type Delay Time Controllable)	2 ~ 17	FLP-8	
KIA78DS05BPV	5V/30mA Low Drop Regulator	~29	TO-92	
* KIA78L05BPV	5V/0.15A Regulator	~35	TO-92L	
* KIA78L06BPV	6V/0.15A Regulator			
* KIA78L08BPV	8V/0.15A Regulator			
* KIA78L09BPV	9V/0.15A Regulator			
* KIA78L10BPV	10V/0.15A Regulator			
* KIA78L12BPV	12V/0.15A Regulator			
* KIA78L15BPV	15V/0.15A Regulator			
* KIA78L18BPV	18V/0.15A Regulator			
* KIA78L20BPV	20V/0.15A Regulator			
* KIA78L24BPV	24V/0.15A Regulator			
* KID65001AFV	Darlington TR Array(7-Circuit)	~50	FLP-16	
* KID65002AFV				
* KID65003AFV				
* KID65004AFV				
* KID65001APV	Darlington TR Array(7-Circuit)	~50	DIP-16	
* KID65002APV				
KID65003APV				
KID65004APV				

Note) \*: Under development

Power Supply Controllers

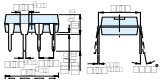






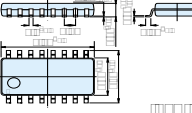
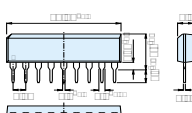

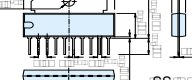
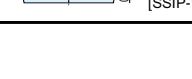
Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA494AF	Voltage Mode PWM Controller	7.0 ~40	FLP-16	
KIA494AP	Voltage Mode PWM Controller	7.0 ~40	DIP-16	
KIA3842F	Current Mode PWM Controller	8.5 ~30	FLP-14	
KIA3842P	Current Mode PWM Controller	8.5 ~30	DIP-8	
KIA34063A	DC/DC Converter	3.0 ~40	DIP-8	
KIA34063AF	DC/DC Converter	3.0 ~40	FLP-8	

## Logic MOS ICs

Type No.	Mark	Max. Ratings					Function	Package	Outline (Unit: mm)
		Supply Voltage Vcc (V)	DC Input Voltage VIN (V)	DC Output Voltage VOUT (V)	DC Output Current IOUT (mA)	Power Dissipation Pd (mW)			
KIC7S00FU	SP	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	2 Input NAND Gate	USV	
KIC7S02FU	SQ	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	2 Input NOR Gate		
KIC7S04FU	SR	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	Inverter Gate		
KIC7S08FU	ST	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	2 Input AND Gate		
KIC7S14FU	SU	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	Schmitt Trigger Inverter		
KIC7S32FU	SV	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	2 Input OR Gate		
KIC7S66FU	SW	-0.5 ~ 10	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	Analog Switch		
KIC7S86FU	SX	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	Exclusive OR Gate		
KIC7SH04FU	VR	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Inverter		
KIC7SH08FU	VT	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	2 Input AND Gate		
KIC7SU04FU	SS	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±12.5	200	Inverter Gate (Unbuffer)		
KIC7W00FK	00	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Dual 2 Input NAND Gate	US8	
KIC7W04FK	04	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Triple Inverter Gate		
KIC7W08FK	08	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Dual 2 Input AND Gate		
KIC7W14FK	14	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Triple Schmitt Trigger Inverter		
KIC7W32FK	32	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Dual 2 Input OR Gate		
KIC7W53FK	53	-0.5 ~ 10	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	2 Channel Multiplexer		
KIC7W66FK	66	-0.5 ~ 10	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Dual Analog Switch		
KIC7W74FK	74	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	D Flip Flop		
KIC7W125FK	125	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±35	200	Dual 3 State Buffer		
KIC7W126FK	126	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±35	200	Dual 3 State Buffer		
KIC7W241FK	241	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±35	200	Dual 3 State Buffer		
KIC7WU04FK	U04	-0.5 ~ 7	-0.5 ~ Vcc+0.5	-0.5 ~ Vcc+0.5	±25	200	Triple Inverter Gate (Unbuffer)		
* KIC7SZ00FU	TA	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	2 Input NAND Gate	USV	
* KIC7SZ02FU	TB	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	2 Input NOR Gate		
* KIC7SZ04FU	TC	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Inverter Gate		
* KIC7SZ05FU	TD	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Open-drain Inverter Gate		
* KIC7SZ08FU	TE	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	2 Input AND Gate		
* KIC7SZ14FU	TF	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Schmitt Trigger Inverter		
* KIC7SZ32FU	TG	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	2 Input OR Gate		
* KIC7SZ66FU	TH	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Analog Switch		
* KIC7SZ86FU	TJ	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Exclusive OR Gate		
* KIC7SZ125FU	TK	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	3-State Buffer		
* KIC7SZ126FU	TL	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	3-State Buffer		
* KIC7SZ241FU	TM	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	3-State Buffer		
* KIC7SZU04FU	TN	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Inverter Gate (Unbuffer)		
* KIC7SZ38FU	TN	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Open-drain AND Gate		
* KIC7WZ00FK	Z00	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 2 Input NAND Gate	US8	
* KIC7WZ08FK	Z08	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 2 Input AND Gate		
* KIC7WZ38FK	Z38	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual Open-drain AND Gate		
* KIC7WZ02FK	Z02	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 2 Input NOR Gate		
* KIC7WZ32FK	Z32	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 2 Input OR Gate		
* KIC7WZ04FK	Z04	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Triple Inverter Gate		
* KIC7WZU04FK	ZU04	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Triple Inverter Gate (Unbuffer)		
* KIC7WZ05FK	Z05	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual Open-drain Inverter Gate		
* KIC7WZ14FK	Z14	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Triple Schmitt Trigger Inverter		
* KIC7WZ34FK	Z34	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Triple MON Inverter Gate		
* KIC7WZ74FK	Z74	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	D Flip Flop		
* KIC7WZ125FK	Z125	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 3 State Buffer		
* KIC7WZ126FK	Z126	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 3 State Buffer		
* KIC7WZ86FK	Z86	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual Exclusive OR Gate		
* KIC7WZ240FK	Z240	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 3 State Inverting Buffer		
* KIC7WZ241FK	Z241	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Dual 3 State Buffer		
* KIC7WZ245FK	Z245	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Bus Transceiver		
* KIC7WZ123FK	Z123	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Monostable multivibrator		
* KIC7WZ157FK	Z157	-0.5 ~ 6	-0.5 ~ 6	-0.5 ~ 6	±50	200	Digital multiplexer		

Note) \* : Under development

Others

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA555F	Single Timer	4.5 ~16	FLP-8	
KIA555P	Single Timer	4.5 ~16	DIP-8	
* KIA2951P	Micro Power Voltage Regulator	30	DIP-8	
* KIA2951F	Micro Power Voltage Regulator	30	FLP-8	
KIA6801K	Bi-directional DC Motor driver	6.0 ~18	SSIP-10	
KIA6901F	DC Motor Speed Controller	1.8 ~8	FLP-8	
KIA6901P			DIP-8	
KIA6903P		3.5 ~18		
KIA6987P	Rx Demodulator	3.5 ~12	DIP-16	
KIA6988P	CDI Controllers	8.8	DIP-14	
* KIA7102AP	SYSTEM IC (Dual OP-Amp + Dual Comparator+ Shunt Regulator)	36	DIP-16	
* KIA7102AF	SYSTEM IC (Dual OP-Amp + Dual Comparator+ Shunt Regulator)	36	FLP-16	
KIA8000S	5V Voltage Regulator with Watchdog Timer	6.0 ~40	SIP-9	

Note) \*: Under development

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
AN1324	Matsushita	KIA324P/F	LM358	Motorola	KIA358P/S/F	TA78xxF	Toshiba	KIA78xxAF
AN1393/S	Matsushita	KIA393P/S/F	LM393/N	N/S	KIA393P/S/F	TA78DL05 ~15S	Toshiba	KIA78DL05 ~15PI
AN1431T	Matsushita	KIA431	LM555/CN	Mitsubishi	KIA555P/F	TA78DLxxAF	Toshiba	KIA78DLxxF
AN4558/S	Matsushita	KIA4558P/S/F	LM7900CT	N/S	KIA7900PI	TA78DS05BP	Toshiba	KIA78DS05BP
AN6553/S	Matsushita	KIA4559P/S/F	LP2951N/M	N/S	KIA2951P/F	TA78L005 ~24AP/F	Toshiba	KIA78L05 ~24BP/F
AN6612/S	Matsushita	KIA6901P/F	M51943	Mitsubishi	KIA7042AP/AF	TA78L05 ~24S	Toshiba	KIA78S05 ~24P
AN6650/S	Matsushita	KIA6901P/F	M51944	Mitsubishi	KIA7442P/F	TA78M05 ~24S/SB	Toshiba	KIA78M05 ~24PI
AN6651	Matsushita	KIA6903P	M51957B	Mitsubishi	KIA7125F/FV	TA79005 ~24S/SB	Toshiba	KIA7905 ~24PI
AN6912/S	Matsushita	KIA339P/F	M54523P	Mitsubishi	KID65003AP	TA79L05 ~24P/F	Toshiba	KIA79L05 ~24BP/F
AN7805-24	Matsushita	KIA7805-24API	M54563P	Mitsubishi	KID65783AP	TA79M05 ~24S/SB	Toshiba	KIA79M05 ~24PI
AN78L05-24	Matsushita	KIA78S05-24P	M5F7900	Mitsubishi	KIA7900PI	TA8000S	Toshiba	KIA8000S
AN7900F	Matsushita	KIA7900PI	MB4210	Fujitsu	KIA4210S/SV	TC7S**FU	Toshiba	KIC7S**FU
AS431LAN/AMI	Alpha	KIA431BP/BF	MB4213	Shindengen	KIA6988P	TC7SZ**FU	Toshiba	KIC7SZ**FU
BA033 ~15FP	Rohm	KIA78D33 ~15F	MC1455/D	Motorola	KIA555P/F	TC7WZ**FK	Toshiba	KIC7WZ**FK
BA222	Rohm	KIA555P/F	MC34063AP/AD	Motorola	KIA34063A/AF	TC7SH04FU	Toshiba	KIC7SH04FU
BA223	Rohm	KIA555P/F	MC34119P/D	Motorola	KIA6419P/F	TC7SH08FU	Toshiba	KIC7SH08FU
BA4558/F/N	Rohm	KIA4558P/F/S	MC4558C	Motorola	KIA4558P/S/F	TC7W**FK	Toshiba	KIC7W**FK
BA6220	Rohm	KIA6903P	MC7805-24CT	Motorola	KIA7805 ~24API	TD62001 ~4P/AP	Toshiba	KID65001 ~4AP
BA6235/F	Rohm	KIA6901P/F	MC78L05-24AC/C	Motorola	KIA78S05 ~24P	TD62083AP/AF	Toshiba	KID65083AP/AF
BA6209N	Rohm	KIA6801K	MC7900CT	Motorola	KIA7900PI	TD62084AP/AF	Toshiba	KID65084AP/AF
BA10324/F	Rohm	KIA324P/F	MJM2901D/M	JRC	KIA339P/F	TD62501 ~7P	Toshiba	KID65501 ~7P
BA10339/F	Rohm	KIA339P/F	MN1280	Matsushita	KIA7019 ~45AP/AF	TD62551 ~5S	Toshiba	KID65551 ~5S
BA10358/F/N	Rohm	KIA358P/F/S	NC7S04P5X	Fairchild	KIC7SH04FU	TD62783AP/AF	Toshiba	KID65783AP/AF
BA10393/F/N	Rohm	KIA393P/F/S	NC7S08P5X	Fairchild	KIC7SH08FU	TL431	Motorola	KIA431/F/A/AF
HA17431P/UA	Hitachi	KIA431/F	NJM431L/U	JRC	KIA431/F/A/AF	TL431	TI	KIA431/F/A/AF
KA278R**	Fairchild	KIA278R**PI	NJM555D/M	JRC	KIA555P/F	TL494	Motorola	KIA494AP/AF
KA34063A/AD	Fairchild	KIA34063A/AF	NJM22360AD/AM	NJRC	KIA34063A/AF	TLV431LP	TI	KIA2431P/AP/BP
KA8602F	Fairchild	KIA6419F	NJM2614D	NJRC	KIA6987P	TLV431DBV	TI	KIA2431T/AT/BT
KA78R**	Fairchild	KIA78R**API	NJM2902D	JRC	KIA324P/F	TSM102AM/AD	SGS-T	KIA7102AP/AF
L5431	Sanyo	KIA431	NJM2903D/M	JRC	KIA393P/S/F	UDN2981A	Sprague	KID65783AP
L78M00T	Sanyo	KIA78M00PI	NJM4558D/S/M	JRC	KIA4558P/S/F	ULN2001 ~4A	Motorola	KID65001 ~4AP
L79M00T	Sanyo	KIA79M00PI	NJM4559D/S/M	JRC	KIA4559P/S/F	ULN2803/4	Motorola	KID65083/84AP
LA5527	Sanyo	KIA6901P	NJM78xxDLA	NJRC	KIA78xxAF	XC74UL04AA	Torex	KIC7SH04FU
LA5528	Sanyo	KIA6901P	NJM7900A/FA	JRC	KIA7900PI	XC74UL08AA	Torex	KIC7SH08FU
LA6324N/NM	Sanyo	KIA324P/F	PQ3RD13	Sharp	KIA78R33API	$\mu$ A431	NEC	KIA431/F/A/AF
LA6339/M	Sanyo	KIA339P/F	PQ3RD23	Sharp	KIA278R33PI	$\mu$ A7805 ~24	NEC	KIA7805 ~24API
LA6358N/NM	Sanyo	KIA358P/F	PQ3RF23	Sharp	KIA278R33PI	$\mu$ A7900C	NEC	KIA7900PI
LA6393D/M	Sanyo	KIA393P/F	PQ**RF11	Sharp	KIA78R05 ~15API	$\mu$ A7900CKC	NEC	KIA7900PI
LA6458/D/M	Sanyo	KIA4558P/S/F	PQ**RF21	Sharp	KIA278R**PI	$\mu$ PA2981C	NEC	KID65783AP
LA8501	Sanyo	KIA6401P/F	PST523	Mitsumi	KIA7019 ~45AP/AF	$\mu$ PC324C	NEC	KIA324P/F
LB1211	Sanyo	KID65501P	PST524	Mitsumi	KIA7019 ~45AP/AF	$\mu$ PC339C/G	NEC	KIA393P/F
LB1212	Sanyo	KID65502P	SN74AHC74**	TI	KIC7S**FU	$\mu$ PC393C/G	NEC	KIA393P/F
LB1213/M	Sanyo	KID65503P/F	TA31001P/F	Toshiba	KIA6401P/F	$\mu$ PC494/C	NEC	KIA494AP/AF
LB1214	Sanyo	KID65504P	TA31002P/F	Toshiba	KIA6402P/F	$\mu$ PC1093J/T	NEC	KIA431/F/A/AF
LB1215	Sanyo	KID65505P	TA75339P	Toshiba	KIA339P	$\mu$ PC1555C	NEC	KIA555P/F
LB1216	Sanyo	KID65506P	TA75393P	Toshiba	KIA393P	$\mu$ PC4558C/G	NEC	KIA4558P/F
LB1217	Sanyo	KID65507P	TA75558P	Toshiba	KIA4558P/S/F	$\mu$ PC4559C/G	NEC	KIA4559P/F
LB1231	Sanyo	KID65001AP	TA75559P	Toshiba	KIA4559P/S/F	$\mu$ PC7805 ~24A	NEC	KIA7805 ~24API
LB1232	Sanyo	KID65002AP	TA7555P/F	Toshiba	KIA555P/F	$\mu$ PC78L05 ~15J	NEC	KIA78L05 ~15F
LB1233	Sanyo	KID65003AP	TA75S01F	Toshiba	KIA75S358F	$\mu$ PC78M05 ~24A	NEC	KIA78M05 ~24PI
LB1234	Sanyo	KID65004AP	TA75S393F	Toshiba	KIA75S393F	$\mu$ PC7900A	NEC	KIA7900PI
LB8555D/M	Sanyo	KIA555P/F	TA75S558F	Toshiba	KIA75S558F	BA**SFP	Rohm	KIA78R**F
LM324/N	Motorola	KIA324P/F	TA76431S/F	Toshiba	KIA431/F	PQ**TZ*1	Sharp	KIA78R**F
LM336	N/S	KIA431/F/A/AF	TA76494P	Toshiba	KIA494AP/AF	PQ**RF33	Sharp	KIA378R**PI
LM339/N	N/S	KIA339P/F	TA7805 ~24S/SB	Toshiba	KIA7805 ~24API	KIA378R**	Fairchild	KIA378R**PI



■ Audio Analog ICs

■ RF, IF, MPX System ICs

Type No.	Function	Recommended Application					Operating Voltage (V)	Package
		Car Stereo	Portable Cassette	Walkman	TV	Universal		
KIA6035P	AM Tuner (ETR)	●					7.5 ~12	DIP-20
KIA6040P	AM/FM IF		●				3.0 ~8.0	DIP-16
KIA6043S	FM Stereo MPX.	●	●				3.5 ~12	SIP-9
KIA6058F	FM Front End, Very Low Spurious Radiation		●	●			1.6 ~6.0	FLP-8
KIA6058S/AS	FM Front End, Very Low Spurious Radiation		●	●			1.6 ~6.0	SIP-9

■ Pre-Amp, Power Amp ICs

Type No.	Function	Recommended Application					Operating Voltage (V)	Package
		Car Stereo	Portable Cassette	Walkman	TV	Universal		
KIA6225P/S	Pre-Amp.	●	●				6.0 ~16	DIP-8 / SIP-9
KIA6259P/S	Dual Pre-Amp., Very Low Noise	●	●			●	±1.5 ~ ±1.8	DIP-8 / SIP-9
KIA6268P	Dual Pre-Amp. with Built-in ALC		●				6.0 ~15	DIP-16
KIA6213S	0.5W Single Power Amp		●		●		4.0 ~14	SIP-9
KIA6278P/S/F	1W Single Power Amp.		●	●	●	●	2.0 ~10	DIP-8 / SIP-9 / FLP-8
KIA6269P	1.2W Dual Power Amp		●		●		4.5 ~9.0	DIP-16
KIA6282K	4.6W Dual Power Amp.		●				6.0 ~15	SSIP-12
KIA6283K	4.6W Dual Power Amp.		●				6.0 ~15	SSIP-12
KIA7217AP	5.8W Single Power Amp.		●			●	9.0 ~18	SSIP-10
KIA6240K	6W Dual Power Amp.				●	●	8 ~26	SSIP-10

■ Motor Driver ICs

Type No.	Function	Operating Voltage (V)	Package
KIA6801K	Bidirectional Motor Driver With Brake (1Motor)	6.0 ~18	SSIP-10

■ Miscellaneous ICs

Type No.	Function	Operating Voltage (V)	Package
KIA6901P/F	DC Motor Speed Controller	1.8 ~8.0	DIP-8 / FLP-8
KIA6903P	DC Motor Speed Controller	3.5 ~18.0	DIP-8
KIA6924S	Muting	-	SIP-9
KIA6966S	5 Dot LED Level Meter Driver	4.0 ~12	SIP-9

## (주) 케이이씨

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FAX : 66-53-581-416/422

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FAX : 86-755-3679515

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