

# SURFACE-MOUNTED DEVICE MARKINGS

Because of their small size, it's not possible to show types/values on most surface-mounted components. The following tables show the code markings used to identify most common surface-mounted transistors and diodes. Note that the same code marking may be used for different devices, depending on the device encapsulation (SOT-23, SOT-89 etc.).

## European (Philips) Devices

Types in SOT-23, SOT-89 and SOT-143 encapsulations are marked as below. The actual type number and data code are shown on the packing. SOT-89 types usually have the type number marked in full on the encapsulation: the BZV49 series is an exception. Code markings followed by \* apply to SOT-23 devices, those followed by + apply to SOT-89 devices and those by # to SOT-323 devices.

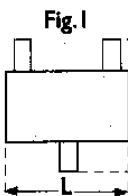
1A	BC846A	2BR	BC849BR	3J	BC858A	4FR	BC860BR	27Y	BZV49-C27	AR3	BSR42
1BR	BC846AR	2C	BC849C	3JR	BC858AR	4G	BC860C	30Y	BZV49-C30	AR4	BSR43
1E	BC847A	2CR	BC849CR	3K	BC858B	4GR	BC860CR	33Y	BZV49-C33	AS1	BST50
1ER	BC847AR	2F	BC850B	3KR	BC858BR	4Y3	BZV49-C4V3	36Y	BZV49-C36	AS2	BST51
1F	BC847B	2FR	BC850BR	3L	BC858C	4Y7	BZV49-C4V7	39Y	BZV49-C39	AS3	BST52
1FR	BC847BR	2G	BR850C	3LR	BC858CR	5A	BC807-16	43Y	BZV49-C43	AT1	BST39
1G	BC847C	2GR	BC850CR	3Y0	BZV49-C3V0	5AR	BC807-16R	47Y	BZV49-C47	AT2	BST40
1GR	BC847CR	2Y4	BZV49-C2V4	3Y3	BZV49-C3V3	5B	BC807-25	51Y	BZV49-C51	B2	BSV52
1J	BC848A	2Y7	BZV49-C2V7	3Y6	BZV49-C3V6	5BR	BC807-25R	56Y	BZV49-C56	B4	BSV52R
1JR	BC848AR	3A	BC856A	3Y9	BZV49-C3V9	5C	BC807-40	62Y	BZV49-C62	B5	BSR12
1K	BC848B	3AR	BC856AR	4A	BC859A	5CR	BC807-40R	68Y	BZV49-C68	B8	BSR12R
1KR	BC848BR	3B	BC856B	4AR	BC859AR	5E	BC808-16	75Y	BZY49-C75	BA*	BCW61A
1L	BC848C	3BR	BC856BR	4B	BC859B	5ER	BC808-16R	A1	BAW56	BA+	BCX54
1LR	BC848CR	3E	BC857A	4BR	BC859BR	5F	BC808-25	A2	BAT18	BB*	BCW61B
1V	BF820	3ER	BC857AR	4C	BC859C	5FR	BC808-25R	A3	BAT17	BB+	BCX54-6
1W	BF821	3F	BC857B	4CR	BC859CR	5G	BC808-40	A4	BAV70	BC*	BCW61C
1X	BF822	3FR	BC857BR	4E	BC860A	5GR	BC808-40R	A5	BRY61	BC+	BCX54-10
1Y	BF823	3G	BC857C	4ER	BC860AR	5Y1	BZV49-C5V1	A51	BRY62	BD*	BCW61D
2B	BC849B	3GR	BC857CR	4F	BC860B	5Y6	BZV49-C5V6	A6	BAS16	BD+	BCX54-16
						6A	BC817-16	A61	BAS28	BE	BCX55
						6AR	BC817-16R	A7	BAV99	BF	BCX55-6
						6B	BC817-25	A8	BAS19	BG*	BCX71G
						6BR	BC817-25R	A81	BAS20	BG+	BCX55-10
						6C	BC817-40	A82	BAS21	BH*	BCX71H
						6CR	BC817-40R	A91	BAS17	BH+	BCX56
						6E	BC818-16	AA*	BCW60A	BJ*	BCX71J
						6ER	BC818-16R	AA+	BCX51	BJ+	BCX56-6
						6F	BC818-25	AB*	BCW60B	BK*	BCX71K
						6FR	BC818-25R	AB+	BCX51-6	BK+	BCX56-10
						6G	BC818-40	AC*	BCW60C	BL	BCX56-16
						6GR	BC818-40R	AC+	BCX51-10	BM	BCX55-16
						6Y2	BZV49-C6V2	AD*	BCW60D	BR1	BSR30
						6Y8	BZV49-C6V8	AD+	BCX51-16	BR2	BSR31
						7Y5	BZV49-C7V5	AE	BCX52	BR3	BSR32
						8Y2	BZV49-C8V2	AF	BCX52-6	BR4	BSR33
						9Y1	BZV49-C9V1	AG	BCX70G	BS1	BST60
						10Y	BZV49-C10	AH*	BCX70H	BS2	BST61
						11Y	BZV49-C11	AH+	BCX53	BS3	BST62
						12Y	BZV49-C12	AJ*	BCX70J	BT1	BST15
						13Y	BZV49-C13	AJ+	BCX53-6	BT2	BST16
						15Y	BZV49-C15	AK*	BCX70K	C1	BCW29
						16Y	BZV49-C16	AK+	BCX53-10	C2	BCW30
						18Y	BZV49-C18	AL	BCX53-16	C4	BCW29R
						20Y	BZV49-C20	AM	BCX52-16	C5	BCW30R
						22Y	BZV49-C22	AR1	BSR40	C7	BCF29
						24Y	BZV49-C24	AR2	BSR41	C77	BCF29R

C8	BCF30	G2	BF550	M4	BSR56	P2#	BFR92AW	U2	BCX20	Y10	BZX84-C27
C9	BCF30R	G3	BF536	M5	BSR57	P4	BFR92R	U3	BSS64	Y11	BZX84-C30
C91	BCV62	G4	BFS20R	M6	BSR58	P5	BFR92AR	U4	BCX19R	Y12	BZX84-C33
CA	BCX68	G5	BF550R	M62	PBMF4391	R1	BFR93	U5	BCX20R	Y13	BZX84-C36
CAC	BC868	G6	BF569	M63	PBMF4392	R2	BFR93A	U6	BSS64R	Y14	BZX84-C39
CE	BCX69	G7	BF579	M64	PBMF4393	R4	BFR93R	U7	BSR13	Y15	BZX84-C42
CEC	BC869	G8	BF660	M65	BF545A	R5	BFR93AR	U8	BSR14	Y16	BZX84-C45
D1	BCW31	G81	BF660R	M66	BF545B	S1	BBY31	U81	BSR14R	Y17	BZX84-C51
D2	BCW32	G9	BF767	M67	BF545C	S2	BBY40	U9	BSR17	Y18	BZX84-C54
D3	BCW33	H1	BCW69	M74	BSS83	S6	BF510	U91	BSR17R	Y19	BZX84-C60
D4	BCW31R	H2	BCW70	M8	BSN20	S7	BF511	U92	BSR17A	Y20	BZX84-C63
D5	BCW32R	H3	BCW89	M84	BF556A	S8	BF512	U93	BSR17AR	Y21	BZX84-C70
D6	BCW33R	H31	BCW89R	M85*	BF556B	S9	BF513	V2	BFG67	Z1	BZX84-C41
D7	BCF32	H4	BCW69R	M86	BF556C	T1	BCX17	V3	BFG67	Z2	BZX84-C51
D77	BCF32R	H5	BCW70R	M87	BF990A	T2	BCX18	V4	BFT25R	Z3	BZX84-C51
D8	BCF33	H7	BCF70	M89	BF989	T3	BSS63	W1	BFT92	Z4	BZX84-C61
D81	BCF33R	H71	BCF70R	M90	BF990	T4	BCX17R	W4	BFT92R	Z5	BZX84-C61
D91	BCV61	K1	BCW71	M91	BF991	T5	BCX18R	X1	BFT93	Z6	BZX84-C71
DA	BF622	K2	BCW72	M92	BF992	T6	BSS63R	X4	BFT93R	Z7	BZX84-C81
DB	BF623	K3	BCW81	M94	BF994	T7	BSR15	Y1	BZX84-C11	Z8	BZX84-C91
DC	BF620	K31	BCW81R	M96	BF996	T71	BSR15R	Y2	BZX84-C12	Z9	BZX84-C11
DF	BF621	K4	BCW71R	M97	BFR101A	T8	BSR16	Y3	BZX84-C13	Z11	BZX84-C21
E1	BFS17	K5	BCW72R	M98	BFR101B	T81	BSR16R	Y4	BZX84-C15	Z12	BZX84-C21
E15	BF747	K7	BCV71	N1*	BFR53	T9	BSR18	Y5	BZX84-C16	Z13	BZX84-C31
E16	BF547	K71	BCV71R	N2	BFS520	T91	BSR18R	Y6	BZX84-C18	Z14	BZX84-C31
E2*	BFS17A	K8	BCV72	N28	BFR520	T92	BSR18A	Y7	BZX84-C20	Z15	BZX84-C31
E2#	BF547W	K81	BCV72R	N29	BFR540	T93	BSR18AR	Y8	BZX84-C22	Z16	BZX84-C31
E4	BFS17R	K9	BCF81	N3	BFG520W	U1	BCX19	Y9	BZX84-C24	Z17	BZX84-C41
E6	BFG17A	K91	BCF81R	N30	BFR505						
ED	BCV28	KM	BST80	N33	BFG505						
EE	BCV48	KN	BST84	N36	BFG520						
EF	BCV29	KO	BST66	N37	BFG540						
EG	BCV49	L20	BAS29	N38	BFG590						
F1	BFS18	L21	BAS31	N39	BFG505/X						
F2	BFS19	L22	BAS35	N4*	BFR53R						
F3	BF840	L30	BAV23	N4#	BFS540						
F31	BF841	L4	BAT54	N4	BFG520W/X						
F4	BFS18R	L41	BAT74	N6#	BFS25A						
F5	BFS19R	L51	BAS56	N70	BFG10						
F8	BF824	LM	BST120	N71	BFG10/X						
FA	BFQ17	LN	BST122	N72	BFG11						
FB	BFQ19	M1	BFR30	N73	BFG11/X						
FD	BCV26	M2	BFR32	NC	BF840						
FF*	BCV27	M3	BFT46	ND	BF841						
FF+	BFQ18A	M31	BSD20	O2	BST82						
G1	BFS20	M32	BSD22	P1*	BFR92						

## Japanese (ROHM) Types

Most Japanese device encapsulation descriptions and size differ from European or American ones. The same code marking may be used with different encapsulations, so it is first necessary to identify the encapsulation by its size. Refer to Fig. 1 and the following table, which includes reference to European SC70 and SOT-23 encapsulations.

Pack	Dim	UMT/SC70	SMT	SOT-23
Length	1.6	2	2.9	2.9
Width	1.6	2.1	2.8	2.5



There are also five- and six-leg encapsulations.

Some identification codes may be followed by a gain (hfe) marking.

**EM3 Pack**

A 2SC4618  
 AC 2SC4725  
 AD 2SC4726  
 B 2SC4617  
 BD 2SA1821  
 CA 2SA1885  
 CB 2SC4997  
 E11 DTA113ZE  
 E13 DTA143ZE  
 E21 DTC113ZE  
 E23 DTC143ZE  
 E32 DTA123JE  
 E42 DTC123JE  
 E56 DTA144VE  
 E66 DTC144VE  
 F 2SA1774  
 J 2SC4649  
 K3B DTA1D3RE  
 K4B DTC1D3RE  
 K19 DTA115GE  
 K29 DTC115GE  
 S 2SC4619  
 03 DTC143TE  
 04 DTC114TE  
 05 DTC124TE  
 06 DTC144TE  
 12 DTA123EE  
 13 DTA143EE  
 14 DTA114EE  
 15 DTA124EE  
 16 DTA144EE  
 19 DTA115EE  
 22 DTC123EE  
 23 DTC143EE  
 24 DTC114EE  
 25 DTC124EE  
 26 DTC144EE  
 29 DTC115EE  
 33 DTA143XE  
 35 DTA124XE  
 43 DTC143XE  
 45 DTC124XE  
 52 DTA123YE  
 53 DTA143YE  
 54 DTA114YE

62 DTC123YE  
 63 DTC143YE  
 64 DTC114YE  
 69 DTC115TE  
 74 DTA114WE  
 76 DTA144WE  
 84 DTC114WE  
 86 DTC144WE  
 91 DTA113TE  
 93 DTA143TE  
 94 DTA114TE  
 95 DTA124TE  
 96 DTA144TE  
 99 DTA115TE

**UMT Pack**

A 2SC4098  
 B 2SC4081  
 BD 2SA1808  
 BF 2SC4723  
 BH 2SC4700  
 BJ 2SD2351  
 BL 2SC4772  
 BM 2SC4774  
 C 2SC4097  
 CA 2SA1886  
 CB 2SC4998  
 F 2SA1576A  
 H 2SA1577  
 J 2SC4099  
 K14 DTA114GUA  
 K15 DTA124GUA  
 K16 DTA144GUA  
 K19 DTA115GUA  
 K24 DTC114GUA  
 K25 DTC124GUA  
 K26 DTC144GUA  
 K29 DTC115GUA  
 K3B DTA1D3RUA  
 K4B DTC1D3RUA  
 R 2SA1579  
 S 2SC4100  
 T 2SC4102  
 Y 2SD1949  
 0A DTC125TU  
 03 DTC143TUA

04 DTC114TUA  
 05 DTC124TUA  
 06 DTC144TUA  
 09 DTC115TUA  
 1C 2SC4082  
 1D 2SC4083  
 1E 2SC4084  
 1L 2SC4103  
 1M 2SC4128  
 1T 2SC4773  
 12 DTA123EUA  
 13 DTA143EUA  
 14 DTA114EUA  
 15 DTA124EUA  
 16 DTA144EUA  
 19 DTA115EUA  
 22 DTC123EUA  
 23 DTC143EUA  
 24 DTC114EUA  
 25 DTC124EUA  
 26 DTC144EUA  
 29 DTC115EUA  
 33 DTA143XUA  
 35 DTA124XUA  
 43 DTC143XUA  
 45 DTC124XUA  
 52 DTA123YUA  
 53 DTA143YUA  
 54 DTA114YUA  
 62 DTC123YUA  
 63 DTC143YUA  
 64 DTC114YUA  
 74 DTA114WUA  
 76 DTA144WUA  
 84 DTC114WUA  
 86 DTC144WUA  
 9A DTA125TUA  
 91 DTA113TUA  
 93 DTA143TUA  
 94 DTA114TUA  
 95 DTA124TUA  
 96 DTA144TUA  
 99 DTA115TUA  
 111 DTA113ZUA  
 113 DTA143ZUA  
 121 DTC113ZUA

123 DTC143ZUA  
 132 DTA123JUA  
 142 DTC123JUA  
 156 DTA144VUA  
 166 DTC144VUA  
 179 DAT115UU  
 183 DTC115UU

**SMT Pack**

A 2SC2413K  
 AA 2SD1757K  
 AC 2SC3837K  
 AD 2SC3838K  
 AE 2SC3839K  
 AF 2SD1781K  
 AH 2SB1197K  
 AJ 2SD1782K  
 AK 2SB1198K  
 AL 2SC3802K  
 AM 2SC4018K  
 AN 2SC4061K  
 AP 2SC4074K  
 AQ 2SB0151K  
 AT 2SC4326K  
 B 2SC2412K  
 BB 2SD2114K  
 BD 2SA1733K  
 BF 2SC4642K  
 BH 2SC4699K  
 BJ 2SD2226K  
 BL 2SC4771K  
 BM 2SC4713K  
 C 2SC2411K  
 D 2SA1037AKLN  
 E11 DTA113ZKA  
 E13 DTA143ZKA  
 E21 DTC113ZKA  
 E23 DTC143ZKA  
 E32 DTA123JKA  
 E42 DTC123JKA  
 E56 DTA144VKA  
 E66 DTC144VKA  
 E79 DTA115UK  
 E89 DTC115UK  
 E92 DTB123TK

E93 DTB142TK  
 E94 DTB114TK  
 E97 DTB163TK  
 F 2SA1037AK  
 F02 DTD123TK  
 F03 DTB143TK  
 F04 DTD114TK  
 F07 DTD163TK  
 F11 DTB113EK  
 F12 DTB123EK  
 F13 DTB143EK  
 F14 DTB114EK  
 F21 DTD113EK  
 F22 DTD123EK  
 F23 DTD143EK  
 F24 DTD114EK  
 F52 DTB123YK  
 F62 DTD123YK  
 G 2SA1455K  
 G08 DTD133HK  
 G11 DTB113ZK  
 G21 DTD113ZK  
 G3C DTB122JK  
 G4C DTD122JK  
 G98 DTB133HK  
 H 2SA1036K  
 H02 DTC323TK  
 H03 DTC343TK  
 H04 DTC314TK  
 H07 DTC363TK  
 H27 DTC363EK  
 I 2SC3722K  
 J 2SC2059K  
 K14 DTA114GKA  
 K15 DTA124GKA  
 K16 DTA144GKA  
 K19 DTA115GKA  
 K24 DTC114GKA  
 K25 DTC124GKA  
 K26 DTC144GKA  
 K29 DTC115GKA  
 K3B DTA1D3RKA  
 K4B DTC1D3RKA  
 L 2SC2412KLN  
 L14 DTB114GK  
 L24 DTD114GK

R 2SA1514K  
 S 2SC3082K  
 T 2SC3906K  
 U 2SB852K  
 W 2SD1383K  
 Y 2SD1484K  
 ZA RU101  
 0A DTC125TK  
 03 DTC143TK  
 04 DTC114TK  
 05 DTC124TK  
 06 DTC144TK  
 09 DTC115TK  
 12 DTA123EK  
 13 DTA143EK  
 14 DTA114EK  
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 29 DTC115EK  
 33 DTA143XK  
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 43 DTC143XK  
 45 DTC124XK  
 52 DTA123YK  
 53 DTA143YK  
 54 DTA114YK  
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