

SILICON POWER TRANSISTOR 2SB548, 549/2SD414, 415

PNP/NPN SILICON EPITAXIAL TRANSISTOR FOR LOW-FREQUENCY POWER AMPLIFIERS

FEATURES

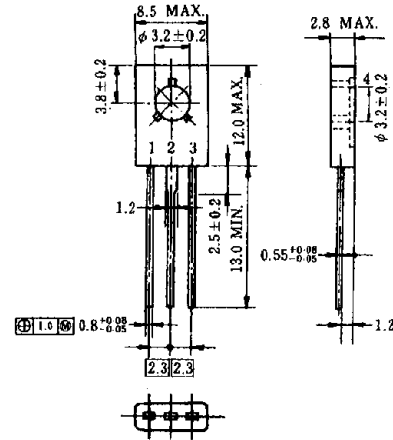
- Ideal for audio amplifier drivers with 30 W to 50 W output
- High voltage
- Available for small mount spaces due to small and thin package
- Easy to be attached to radiators

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	2SB548/ 2SD414	2SB549/ 2SD415	Unit
Collector to base voltage	V _{CB0}	-100/120		V
Collector to emitter voltage	V _{CE0}	-80/80	-100/100	V
Emitter to base voltage	V _{EBO}	-5.0/5.0		V
Collector current	I _{C(DC)}	-0.8/0.8		A
Collector current	I _{C(pulse)*}	-1.5/1.5		A
Total power dissipation	P _T (Ta = 25°C)	1.0		W
Total power dissipation	P _T (Tc = 25°C)	10		W
Junction temperature	T _J	150		°C
Storage temperature	T _{stg}	-55 to +150		°C

* PW ≤ 10 ms, duty cycle ≤ 50%

PACKAGE DRAWING (UNIT: mm)



Electrode Connection

1. Emitter
2. Collector connected to mounting plane
3. Base
4. Fin (Collector)

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I _{CB0}	V _{CB} = -80/80 V, I _E = 0			-1.0/1.0	μA
Emitter cutoff current	I _{EBO}	V _{EB} = -3.0/3.0 V, I _C = 0			-1.0/1.0	μA
DC current gain	h _{FE1}	V _{CE} = -5.0/5.0 V, I _C = -2.0/2.0 mA*	20			
DC current gain	h _{FE2}	V _{CE} = -5.0/5.0 V, I _C = -200/200 mA*	40	90	320	
Collector saturation voltage	V _{CE(sat)}	I _C = -500/500 mA, I _B = -50/50 mA*		-0.4/0.3	-2.0/2.0	V
Base saturation voltage	V _{BE(sat)}	I _C = -500/500 mA, I _B = -50/50 mA*		-0.9/0.9	-1.5/1.5	V
Gain bandwidth product	f _T	V _{CE} = -5.0/5.0 V, I _C = -100/100 mA		70/45		MHz
Collector capacitance	C _{ob}	V _{CB} = -10/10 V, I _E = 0, f = 1.0 MHz		25/15		pF

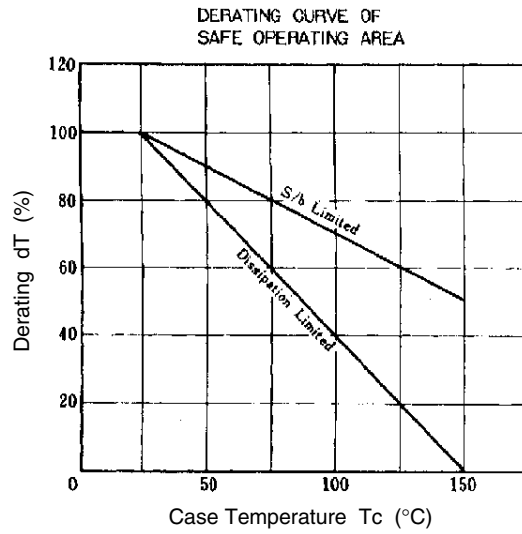
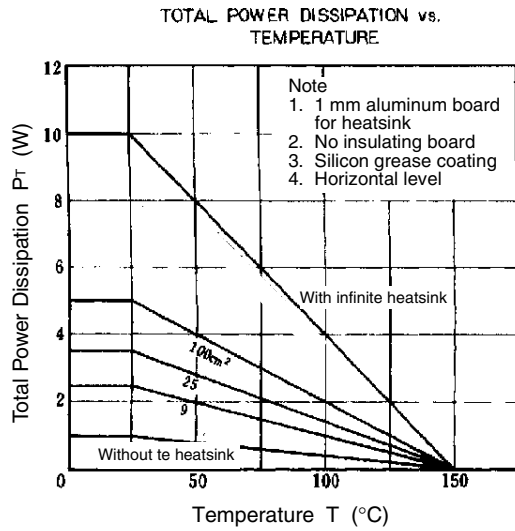
* Pulse test PW ≤ 350 μs, duty cycle ≤ 2%

h_{FE2} CLASSIFICATION

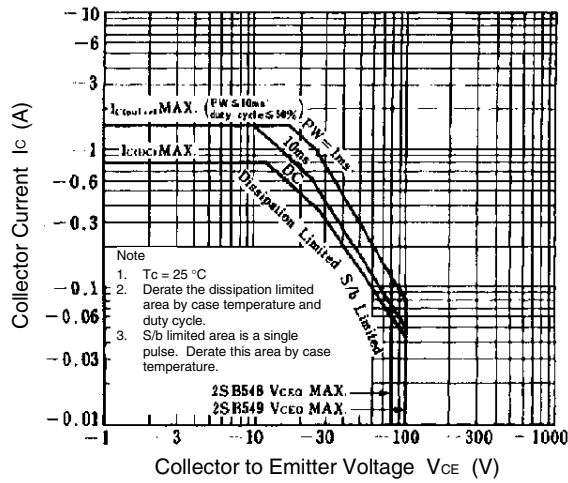
Marking	S	R	Q	P
h _{FE2}	40 to 80	60 to 120	100 to 200	160 to 320

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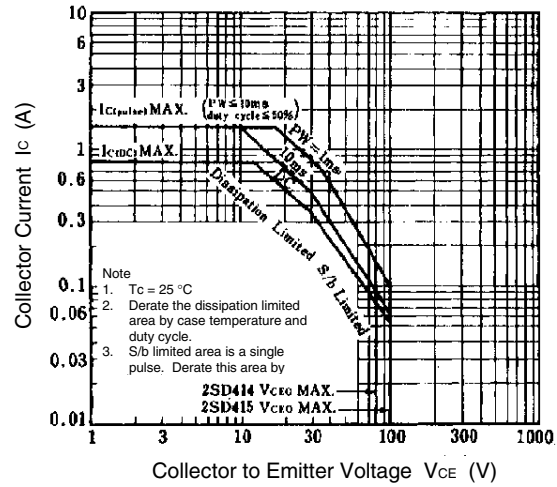
TYPICAL CHARACTERISTICS (Ta = 25°C)



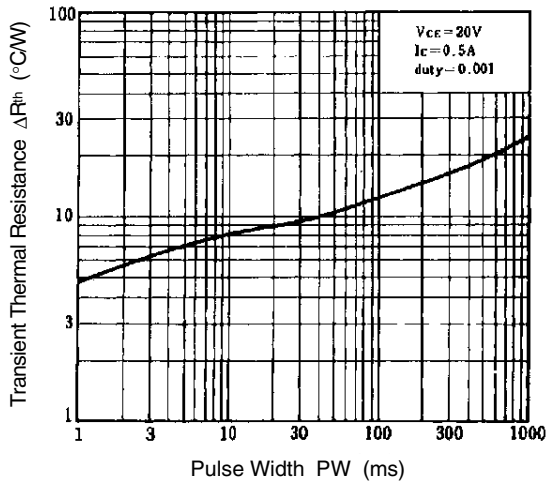
2SB548, 2SB549
FORWARD BIAS SAFE OPERATING AREA



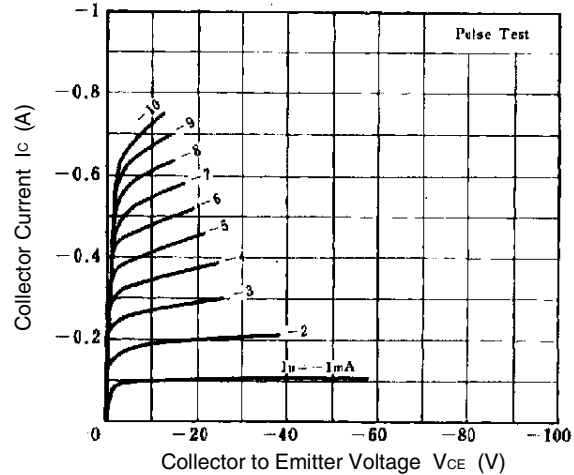
2SD414, 2SD415
FORWARD BIAS SAFE OPERATING AREA

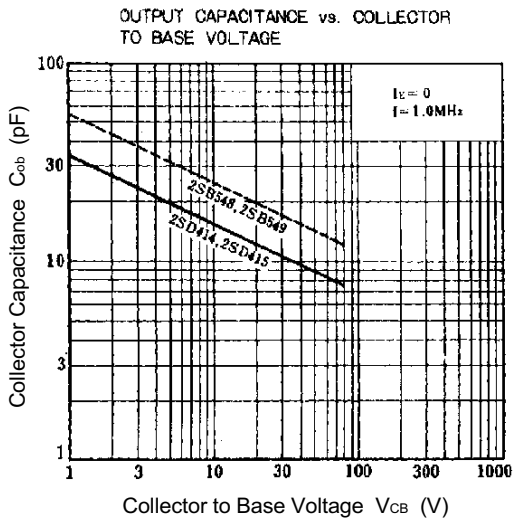
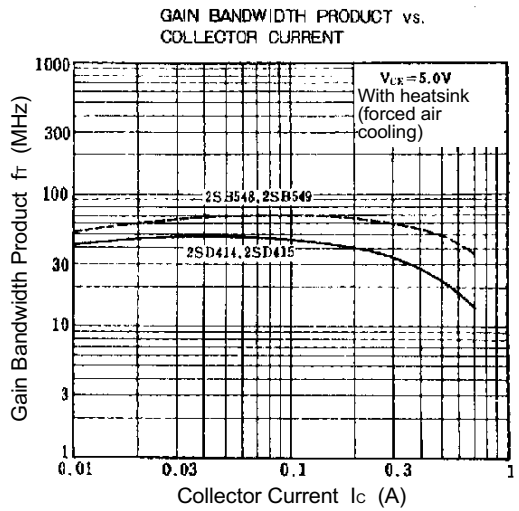
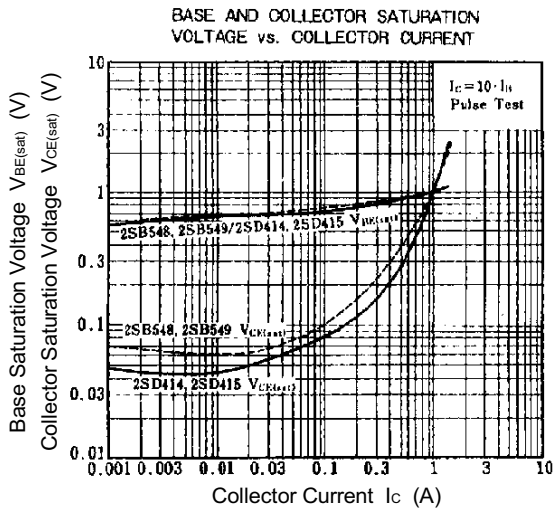
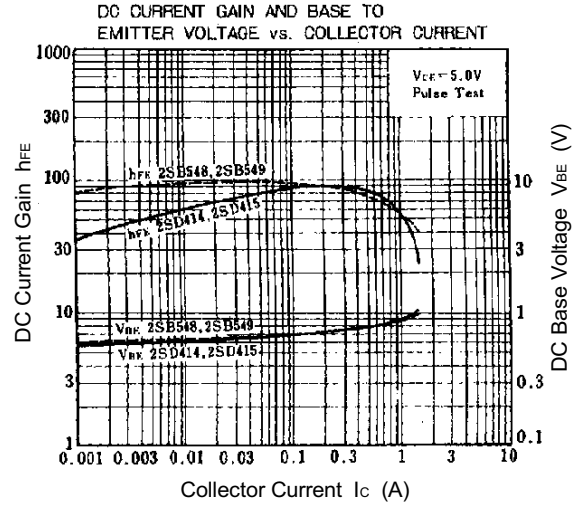
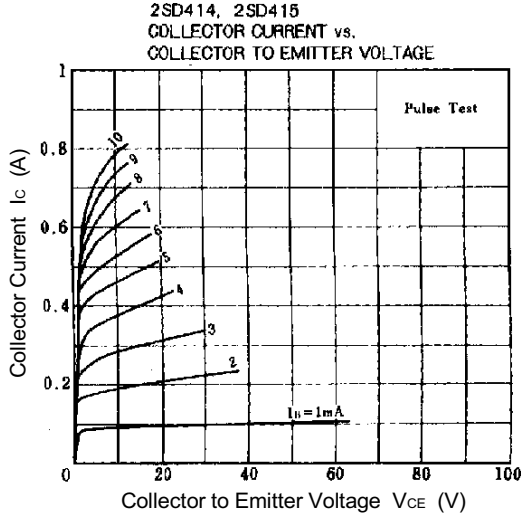


TRANSIENT THERMAL RESISTANCE



2SB548, 2SB549
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE





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