

**NPN Transistors**

**2SC4548**

■ Features

- Collector Current Capability  $I_c=0.2A$
- Collector Emitter Voltage  $V_{CEO}=400V$
- Complementary to 2SA1740

■ Absolute Maximum Ratings  $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	$V_{CBO}$	400	V
Collector - Emitter Voltage	$V_{CEO}$	400	
Emitter - Base Voltage	$V_{EBO}$	5	
Collector Current - Continuous	$I_c$	0.2	A
Collector Current - Pulse	$I_{CP}$	0.4	
Collector Power Dissipation (Note.1)	$P_c$	1.3	W
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

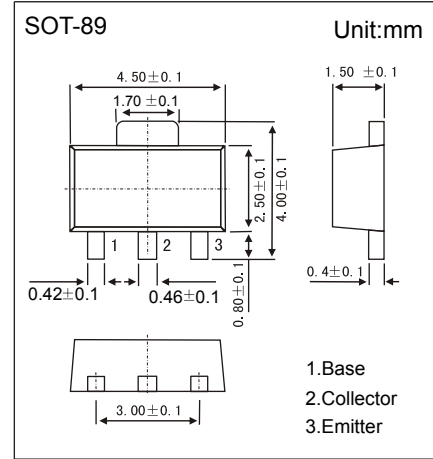
Note.1 : Mounted on ceramic substrate of 250mm<sup>2</sup>X0.8mm

■ Electrical Characteristics  $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CBO}$	$I_c= 100 \mu A, I_E= 0$	400			V
Collector- emitter breakdown voltage	$V_{CEO}$	$I_c= 1 mA, R_{BE}= \infty$	400			
Emitter - base breakdown voltage	$V_{EBO}$	$I_E= 100 \mu A, I_c= 0$	5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB}= 300 V, I_E= 0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}= 4V, I_c=0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_c=50mA, I_B=5mA$			0.6	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_c=50mA, I_B=5mA$			1	
DC current gain	$h_{FE}$	$V_{CE}= 10V, I_c= 50mA$	60		200	
Turn-on time	$t_{on}$	See Specified Test Circuit			0.25	$\mu S$
Turn-off time	$t_{off}$				5	
Collector output capacitance	$C_{ob}$	$V_{CB}= 30V, f=1MHz$		4		pF
Reverse Transfer	$C_{re}$			3		
Transition frequency	$f_T$	$V_{CE}= 30V, I_c=10mA$		70		MHz

■ Classification of  $h_{fe}$

Type	2SC4548-D	2SC4548-E
Range	60-120	100-200
Marking	CN D*	CN E*



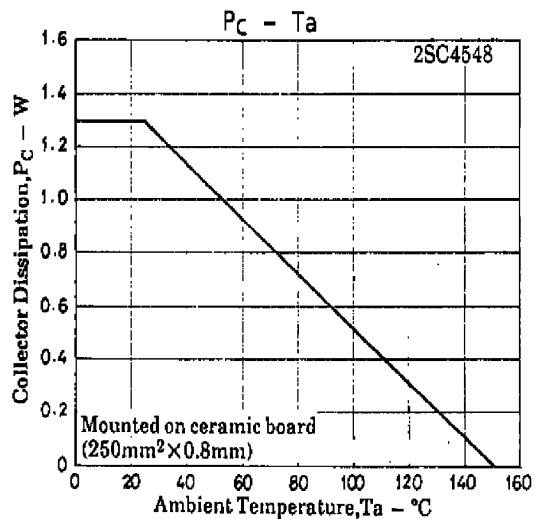
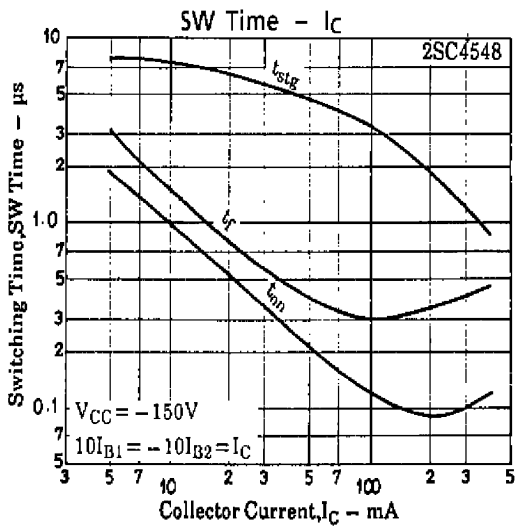
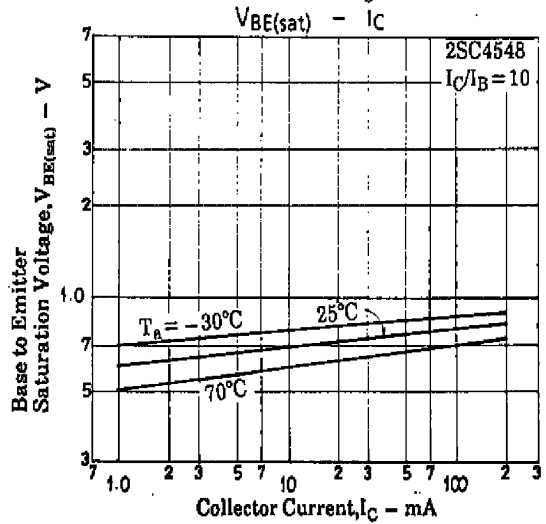
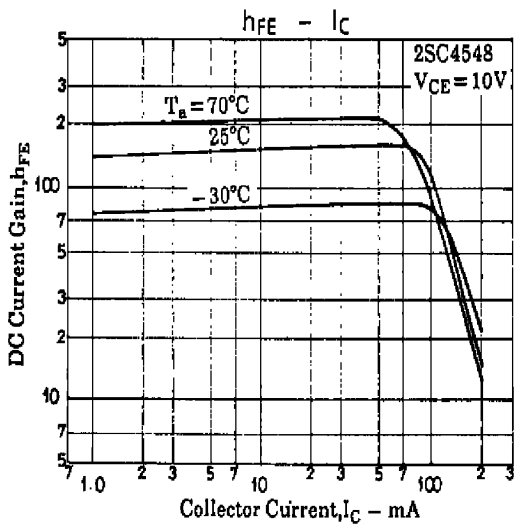
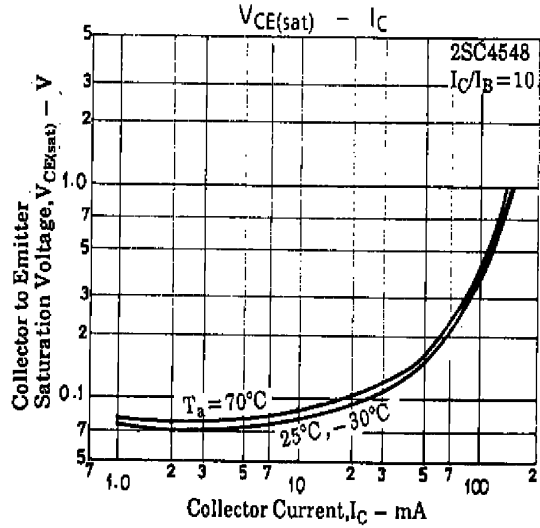
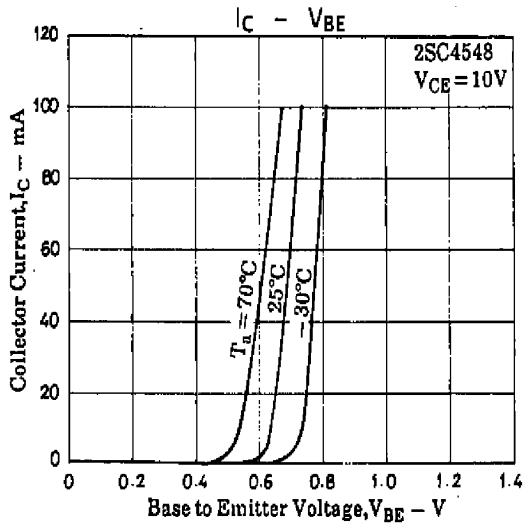


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Typical Characteristics



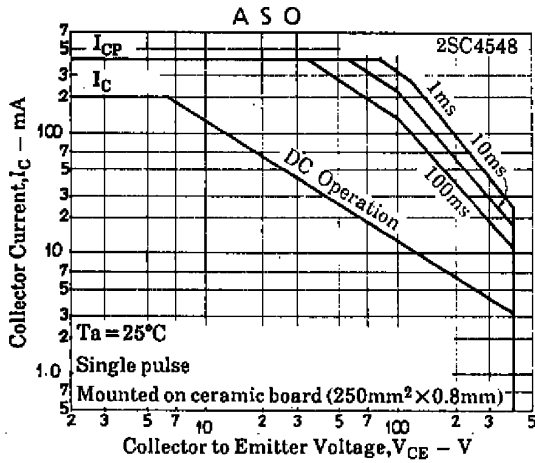


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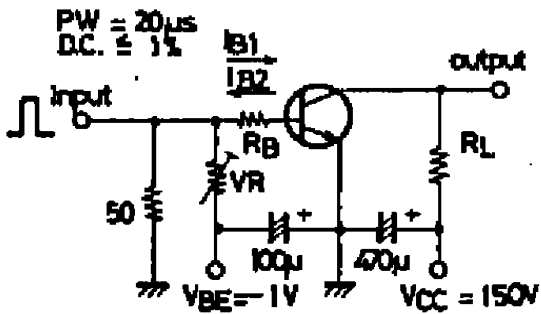
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Typical Characteristics



Switching Time Test Circuit



$$10I_{B1} = -10I_{B2} = I_C = 50\text{mA}$$

$$R_L = 3\text{k}\Omega, R_B = 200\Omega \text{ at } I_C = 50\text{mA}$$

For PNP, the polarity is reversed.

Unit (Resistance :  $\Omega$ , Capacitance : F)