

2SB0950, 2SB0950A (2SB950, 2SB950A)

Silicon PNP epitaxial planar type Darlington

For power amplification and switching

Complementary to 2SD1276 and 2SD1276A

■ Features

- High forward current transfer ratio h_{FE}
- High-speed switching
- Full-pack package which can be installed to the heat sink with one screw

■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	2SB0950	-60	V
	2SB0950A	-80	
Collector to emitter voltage	2SB0950	-60	V
	2SB0950A	-80	
Emitter to base voltage	V_{EBO}	-5	V
Peak collector current	I_{CP}	-8	A
Collector current	I_C	-4	A
Collector power dissipation	$T_C = 25^\circ\text{C}$	40	W
	$T_a = 25^\circ\text{C}$	2	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

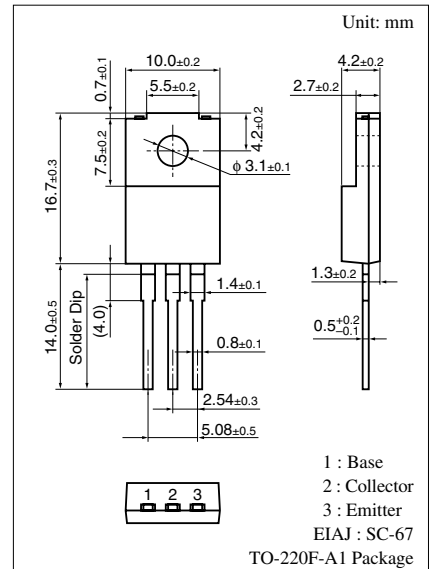
■ Electrical Characteristics $T_C = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	2SB0950	$V_{CB} = -60\text{ V}, I_E = 0$			-200	μA
	2SB0950A	$V_{CB} = -80\text{ V}, I_E = 0$			-200	
Collector cutoff current	2SB0950	$V_{CE} = -30\text{ V}, I_B = 0$			-500	μA
	2SB0950A	$V_{CE} = -40\text{ V}, I_B = 0$			-500	
Emitter cutoff current	I_{EBO}	$V_{EB} = -5\text{ V}, I_C = 0$			-2	mA
Collector to emitter voltage	2SB0950	$I_C = -30\text{ mA}, I_B = 0$	-60			V
	2SB0950A		-80			
Forward current transfer ratio	h_{FE1}	$V_{CE} = -3\text{ V}, I_C = -0.5\text{ A}$	1 000			
	h_{FE2}^*	$V_{CE} = -3\text{ V}, I_C = -3\text{ A}$	2 000		10 000	
Base to emitter voltage	V_{BE}	$V_{CE} = -3\text{ V}, I_C = -3\text{ A}$			-2.5	V
Collector to emitter saturation voltage	$V_{CE(sat)1}$	$I_C = -3\text{ A}, I_B = -12\text{ mA}$			-2	V
	$V_{CE(sat)2}$	$I_C = -5\text{ A}, I_B = -20\text{ mA}$			-4	
Transition frequency	f_T	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = -3\text{ A}, I_{B1} = -12\text{ mA}, I_{B2} = 12\text{ mA}$		0.3		μs
Storage time	t_{stg}	$V_{CC} = -50\text{ V}$		2		μs
Fall time	t_f			0.5		μs

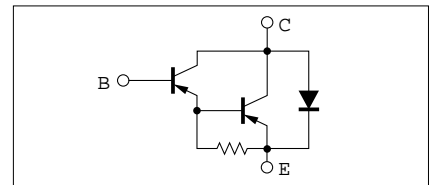
Note) *: Rank classification

Rank	Q	P
h_{FE2}	2 000 to 5 000	4 000 to 10 000

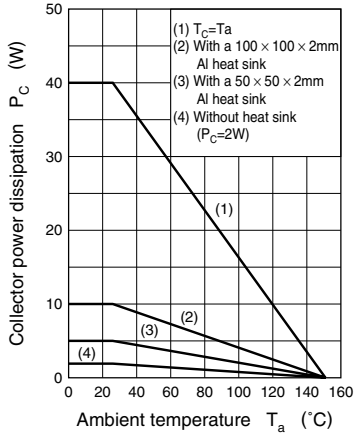
Note.) The Part numbers in the Parenthesis show conventional part number.



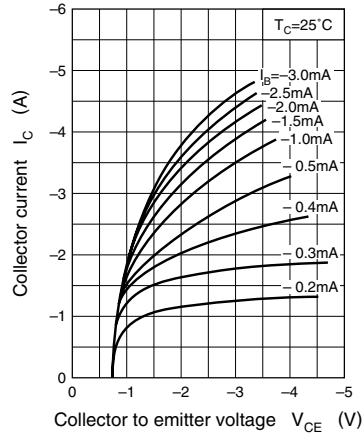
Internal Connection



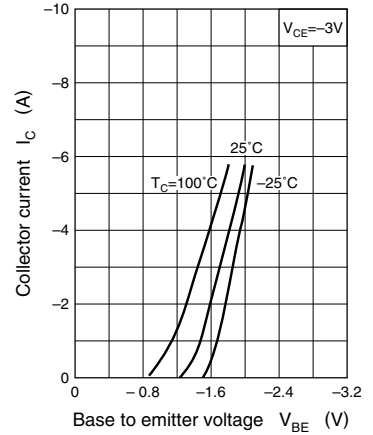
$P_C - T_a$



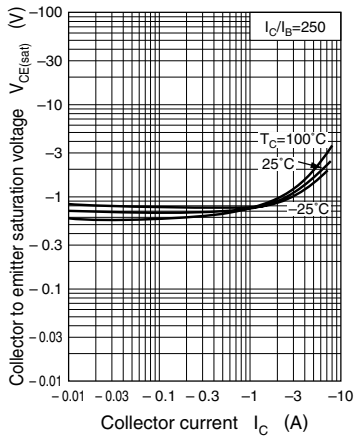
$I_C - V_{CE}$



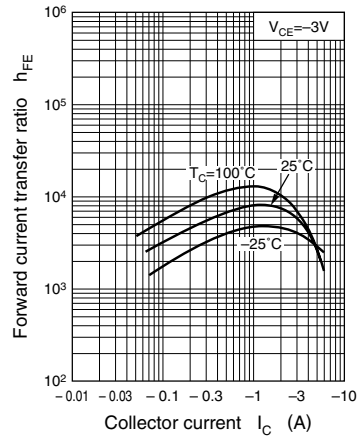
$I_C - V_{BE}$



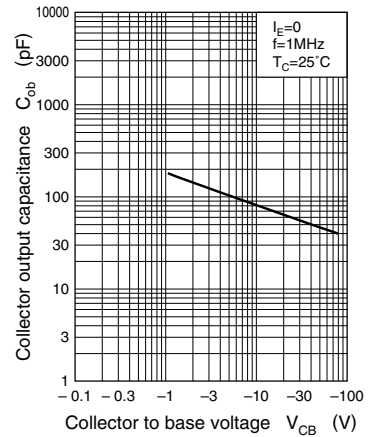
$V_{CE(sat)} - I_C$



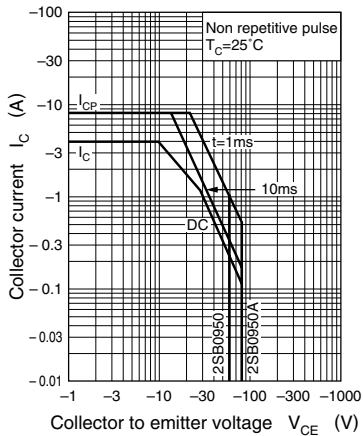
$h_{FE} - I_C$



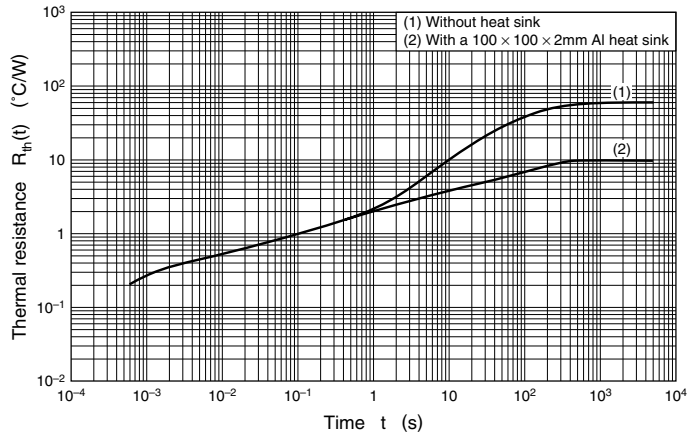
$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$R_{th(t)} - t$



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