

# 2SB0949, 2SB0949A (2SB949, 2SB949A)

Silicon PNP epitaxial planar type Darlington

For power amplification and switching

Complementary to 2SD1275 and 2SD1275A

## ■ 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	2SB0949	$V_{CBO}$	−60	V
	2SB0949A		−80	
Collector to emitter voltage	2SB0949	$V_{CEO}$	−60	V
	2SB0949A		−80	
Emitter to base voltage		$V_{EBO}$	−5	V
Peak collector current		$I_{CP}$	−4	A
Collector current		$I_C$	−2	A
Collector power dissipation	$T_C = 25^{\circ}C$	$P_C$	35	W
	$T_a = 25^{\circ}C$		2	
Junction temperature		$T_j$	150	$^{\circ}C$
Storage temperature		$T_{stg}$	−55 to +150	$^{\circ}C$

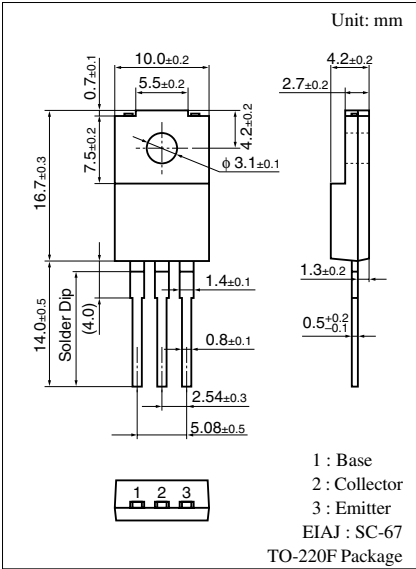
## ■ Electrical Characteristics $T_C = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	2SB0949 2SB0949A	$I_{CBO}$	$V_{CB} = -60\text{ V}, I_E = 0$		-1	mA
					-1	
Collector cutoff current	2SB0949 2SB0949A	$I_{CEO}$	$V_{CB} = -30\text{ V}, I_B = 0$		-2	mA
					-2	
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -5\text{ V}, I_C = 0$			-2	mA
Collector to emitter voltage	2SB0949 2SB0949A	$V_{CEO}$	$I_C = -30\text{ mA}, I_B = 0$	-60		V
				-80		
Forward current transfer ratio	$h_{FE1}$ $h_{FE2}^*$	$V_{CE} = -4\text{ V}, I_C = -1\text{ A}$	1 000			
Base to emitter voltage	$V_{BE}$	$V_{CE} = -4\text{ V}, I_C = -2\text{ A}$			-2.8	V
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -2\text{ A}, I_B = -8\text{ mA}$			-2.5	V
Transition frequency	$f_T$	$V_{CE} = -10\text{ V}, I_C = -0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	$t_{on}$	$I_C = -2\text{ A}, I_{B1} = -8\text{ mA}, I_{B2} = 8\text{ mA}, V_{CC} = -50\text{ V}$		0.4		$\mu\text{s}$
Storage time	$t_{stg}$			1.5		$\mu\text{s}$
Fall time	$t_f$			0.5		$\mu\text{s}$

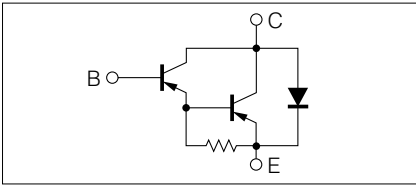
Note) \*: Rank classification

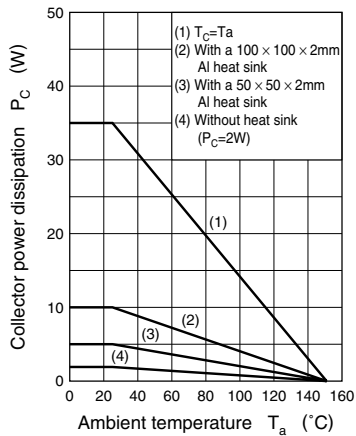
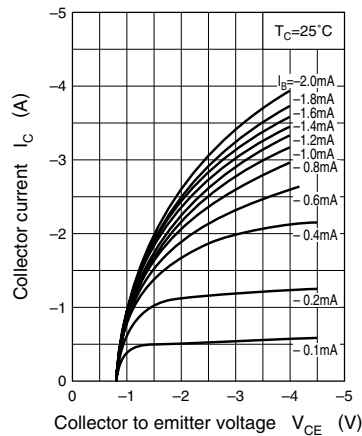
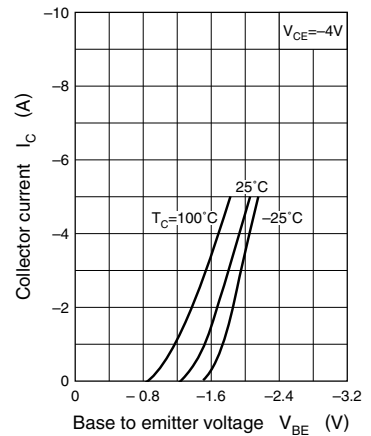
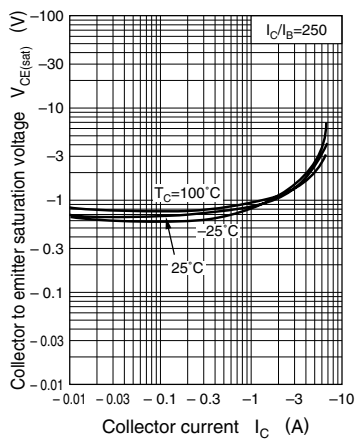
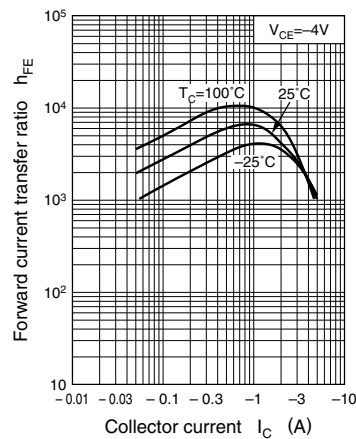
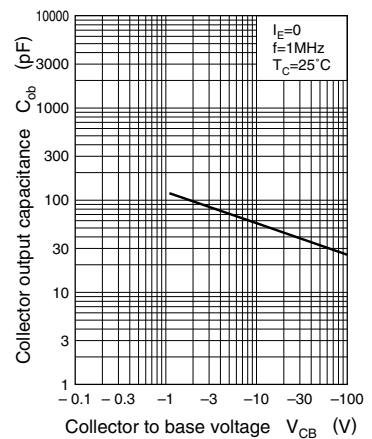
Rank	Q	P
$h_{FE2}$	2 000 to 5 000	4 000 to 10 000

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

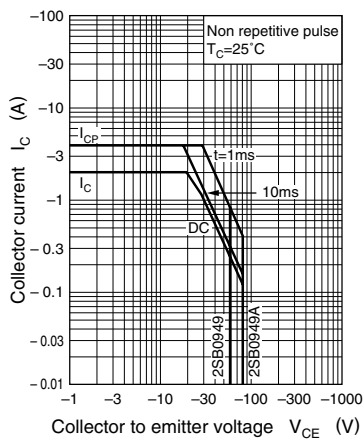
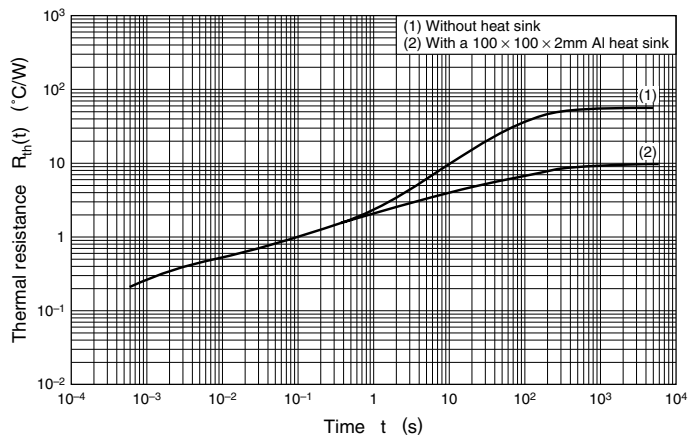


## Internal Connection



$P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(\text{sat})} - I_C$  $h_{FE} - I_C$  $C_{ob} - V_{CB}$ 

Area of safe operation (ASO)

 $R_{th(t)} - t$ 

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