

2SD1749, 2SD1749A

Silicon NPN triple diffusion planar type darlington

For low-frequency power amplification

Complementary to 2SB1179 and 2SB1179A

■ Features

- High forward current transfer ratio h_{FE}
- High-speed switching
- I type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	2SD1749	60	V
	2SD1749A	80	
Collector-emitter voltage (Base open)	2SD1749	60	V
	2SD1749A	80	
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	4	A
Peak collector current	I_{CP}	8	A
Collector power dissipation	P_C	15	W
		$T_a = 25^\circ\text{C}$	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

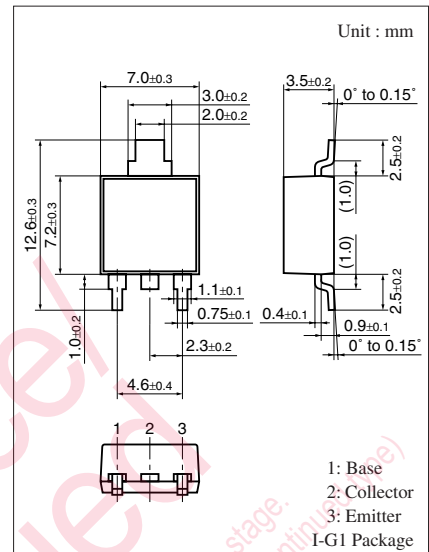
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SD1749	$I_C = 30\text{ mA}, I_B = 0$	60			V
	2SD1749A					
Base-emitter voltage	V_{BE}	$V_{CE} = 3\text{ V}, I_C = 3\text{ A}$			2.5	V
Collector-base cutoff current (Emitter open)	2SD1749	$V_{CB} = 60\text{ V}, I_E = 0$			200	μA
	2SD1749A					
Collector-emitter cutoff current (Base open)	2SD1749	$V_{CE} = 30\text{ V}, I_B = 0$			500	μA
	2SD1749A					
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			2	mA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 3\text{ V}, I_C = 0.5\text{ A}$	1000			—
		$V_{CE} = 3\text{ V}, I_C = 3\text{ A}$	2000	10000		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 12\text{ mA}$			2.0	V
		$I_C = 5\text{ A}, I_B = 20\text{ mA}$			4.0	
Forward current transfer ratio	f_T	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	t_{on}	$I_C = 3\text{ A}, I_{B1} = 12\text{ mA}, I_{B2} = -12\text{ mA}$		0.5		μs
Storage time	t_{stg}	$V_{CC} = 50\text{ V}$		4.0		μs
Fall time	t_f			1.0		μs

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

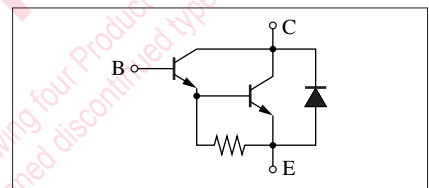
2. *: Rank classification

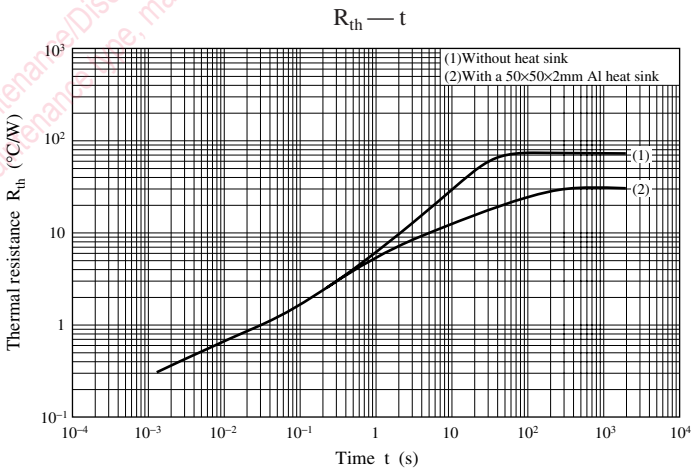
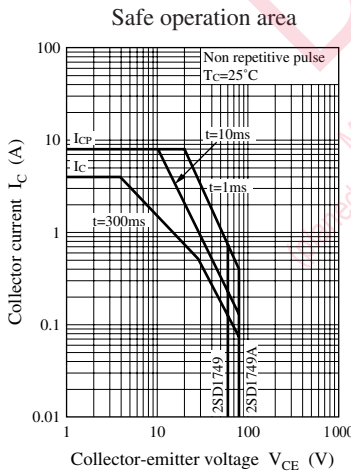
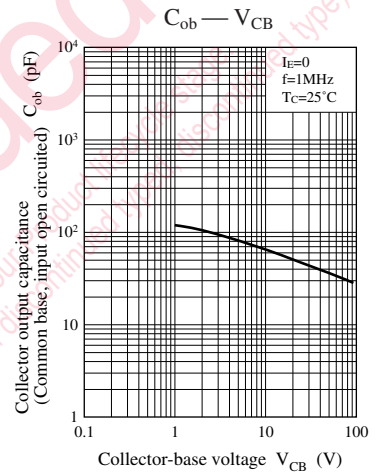
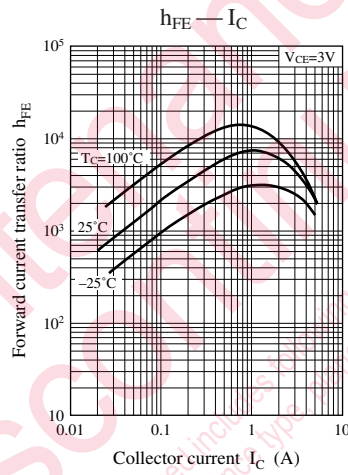
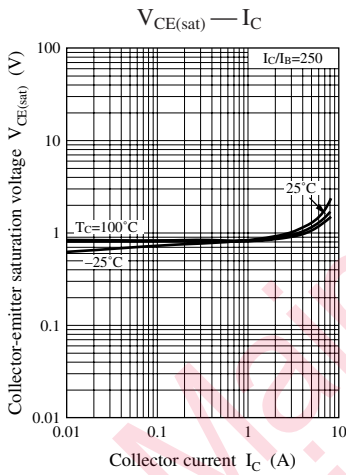
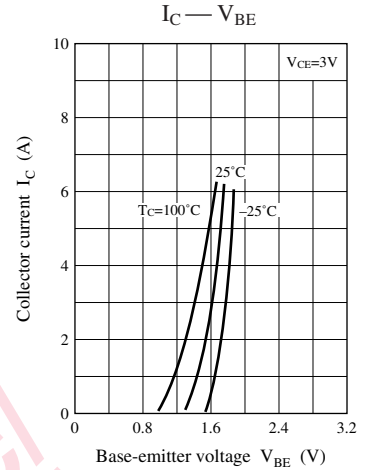
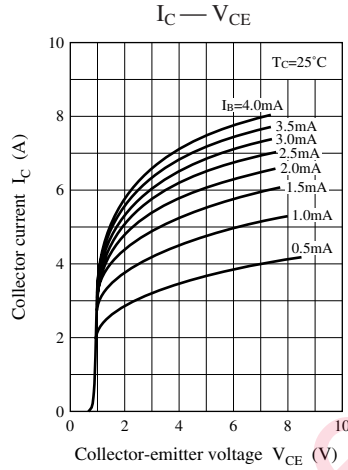
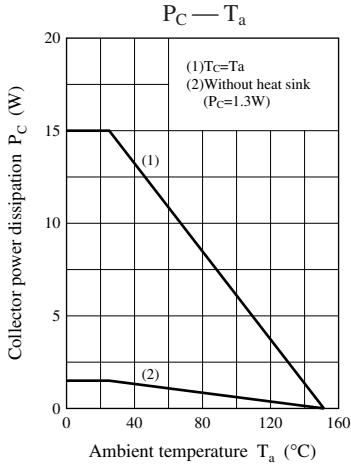
Rank	Q	P
h_{FE2}	2000 to 5000	4000 to 10000



Note) Self-supported type package is also prepared.

Internal Connection





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