

2SD1750, 2SD1750A

Silicon NPN triple diffusion planar type darlington

For medium speed power switching

Complementary to 2SB1180 and 2SB1180A

■ 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)	2SD1750	V_{CBO}	60	V
	2SD1750A		80	
Collector-emitter voltage (Base open)	2SD1750	V_{CEO}	60	V
	2SD1750A		80	
Emitter-base voltage (Collector open)		V_{EBO}	7	V
Collector current		I_C	8	A
Peak collector current		I_{CP}	12	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	$^{\circ}\text{C}$

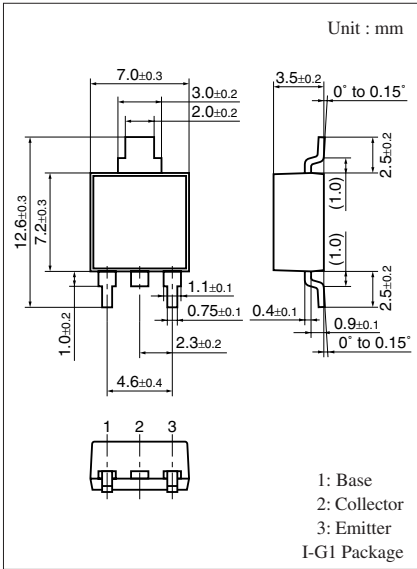
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SD1750 2SD1750A	V_{CEO} $I_C = 30\text{ mA}, I_B = 0$	60			V
			80			
Collector-base cutoff current (Emitter open)	2SB1750 2SB1750A	I_{CBO} $V_{CB} = 60\text{ V}, I_E = 0$ $V_{CB} = 80\text{ V}, I_E = 0$			100	μA
					100	
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 7\text{ V}, I_C = 0$			2	mA
Forward current transfer ratio	h_{FE1}^* h_{FE2}	$V_{CE} = 3\text{ V}, I_C = 4\text{ A}$ $V_{CE} = 3\text{ V}, I_C = 8\text{ A}$	2000		10000	—
			500			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 4\text{ A}, I_B = 8\text{ mA}$			1.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 4\text{ A}, I_B = 8\text{ mA}$			2.0	V
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}	$I_C = 4\text{ A}, I_{B1} = 8\text{ mA}, I_{B2} = -8\text{ mA}$ $V_{CC} = -50\text{ V}$		0.5		μs
Storage time	t_{stg}			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.

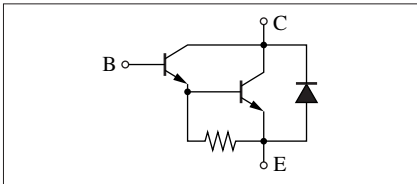
2. *: Rank classification

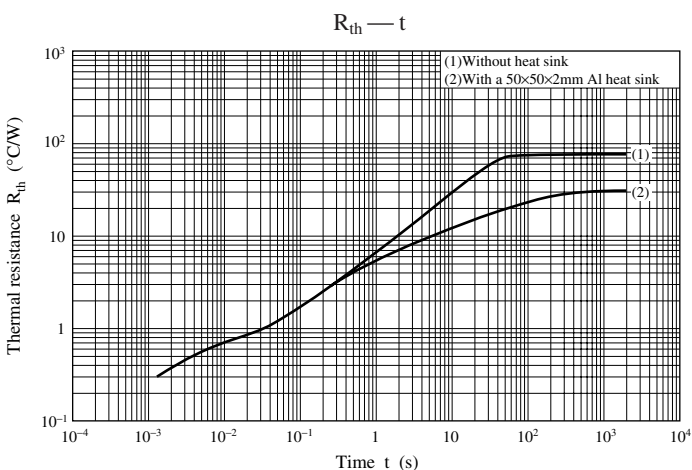
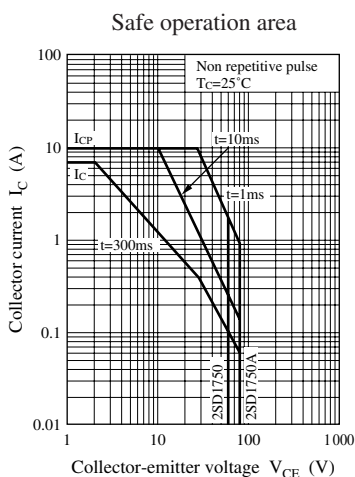
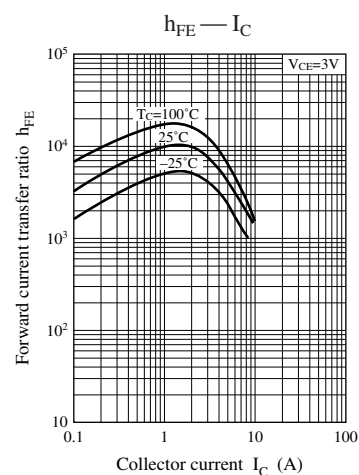
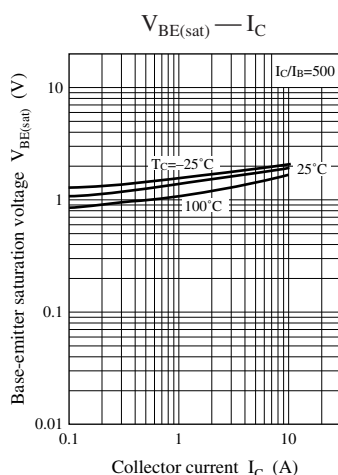
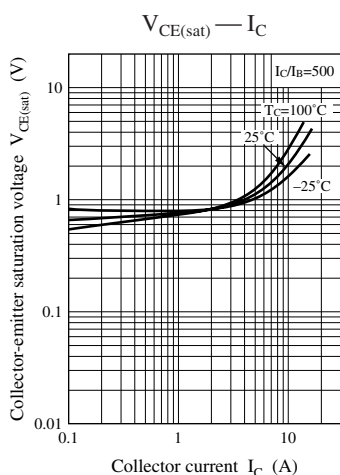
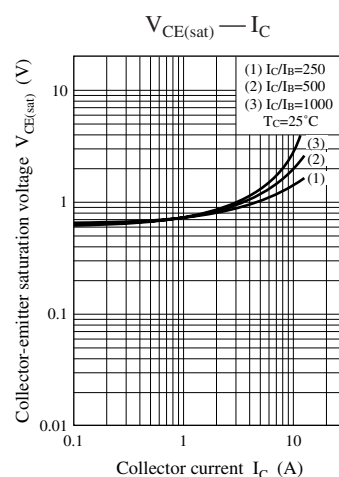
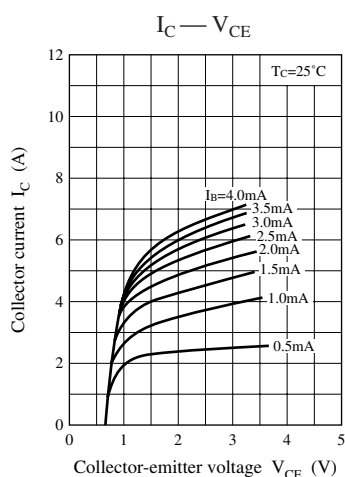
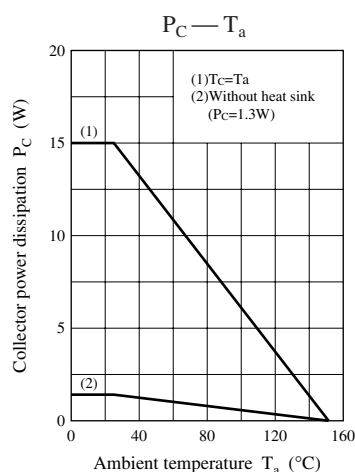
Rank	Q	P
h_{FE1}	2000 to 5000	4000 to 10000



Note) Self-supported type package is also prepared.

Internal Connection





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