

2SD1277, 2SD1277A

Silicon NPN triple diffusion planar type darlington

For midium speed power switching

Complementary to 2SB0951, 2SB0951A

■ 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 $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	60	V
		80	
Collector-emitter voltage (Base open)	V_{CEO}	60	V
		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	45	W
		2.0	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

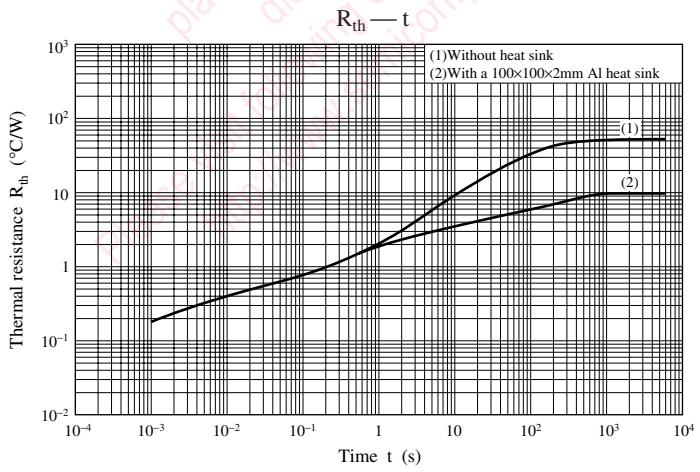
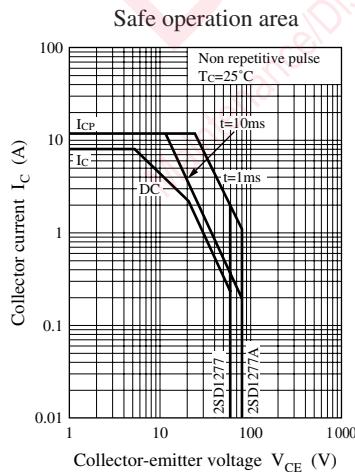
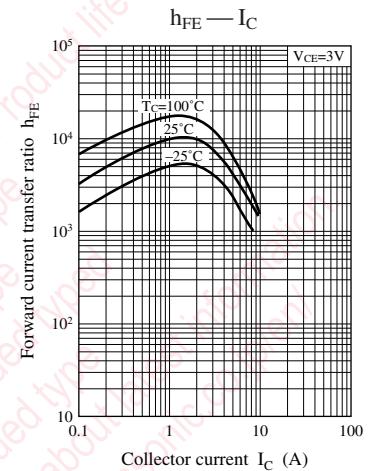
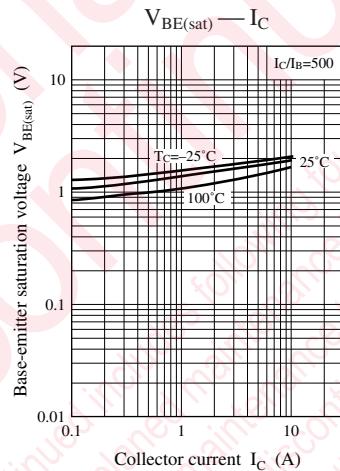
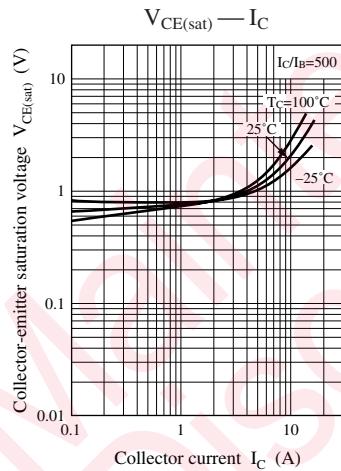
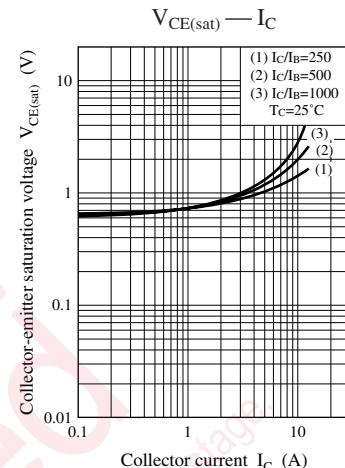
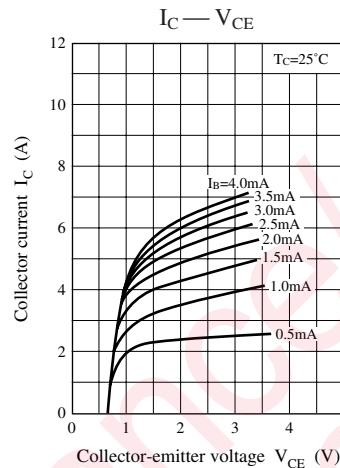
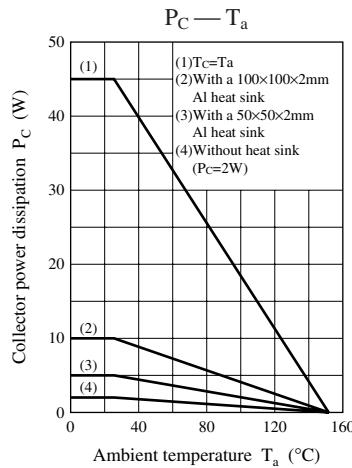
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 30 \text{ mA}, I_B = 0$	60			V
			80			
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 60 \text{ V}, I_E = 0$			100	μA
		$V_{CB} = 80 \text{ V}, I_E = 0$			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} *	$V_{CE} = 3 \text{ V}, I_C = 4 \text{ A}$	1 000		10 000	—
	h_{FE2}	$V_{CE} = 3 \text{ V}, I_C = 8 \text{ A}$	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
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}	$I_C = 2 \text{ A}, I_{B1} = 8 \text{ mA}, I_{B2} = -8 \text{ mA}, V_{CC} = 50 \text{ V}$			0.5	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	R	Q	P
h_{FE1}	1 000 to 2 500	2 000 to 5 000	4 000 to 10 000



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