

2SD2276

Silicon NPN triple diffusion planar type Darlington

For power amplification
Complementary to 2SB1503

■ Features

- Optimum for 110 W Hi-Fi output
- High forward current transfer ratio h_{FE} : 5 000 to 30 000
- Low collector to emitter saturation voltage $V_{CE(sat)}$: < 2.5 V

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

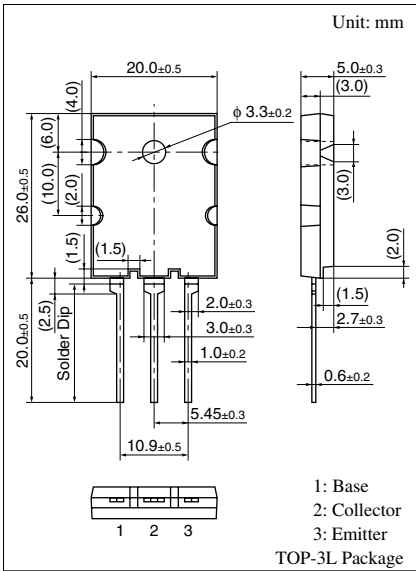
Parameter		Symbol	Rating	Unit
Collector to base voltage		V _{CBO}	160	V
Collector to emitter voltage		V _{CEO}	140	V
Emitter to base voltage		V _{EBO}	5	V
Peak collector current		I _{CP}	15	A
Collector current		I _C	8	A
Collector power dissipation	T _C = 25°C	P _C	120	W
	T _a = 25°C		3.5	
Junction temperature		T _j	150	°C
Storage temperature		T _{stg}	−55 to +150	°C

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

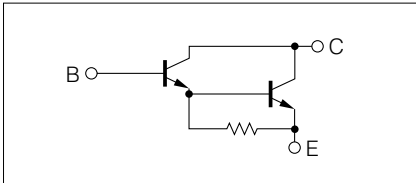
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 160\text{ V}, I_E = 0$			100	μA
	I_{CEO}	$V_{CE} = 140\text{ V}, I_B = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			100	μA
Collector to emitter voltage	V_{CEO}	$I_C = 30\text{ mA}, I_B = 0$	140			V
Forward current transfer ratio	h_{FE1}	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	2 000			
	h_{FE2}^*	$V_{CE} = 5\text{ V}, I_C = 7\text{ A}$	5 000		30 000	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 7\text{ A}, I_B = 7\text{ mA}$			2.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 7\text{ A}, I_B = 7\text{ mA}$			3.0	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}	$I_C = 7\text{ A}, I_{B1} = 7\text{ mA}, I_{B2} = -7\text{ mA}, V_{CC} = 50\text{ V}$		2.0		μs
Storage time	t_{stg}			6.0		μs
Fall time	t_f			1.2		μs

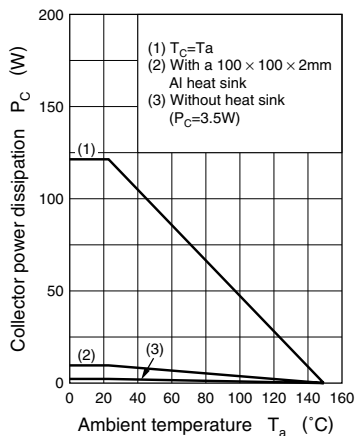
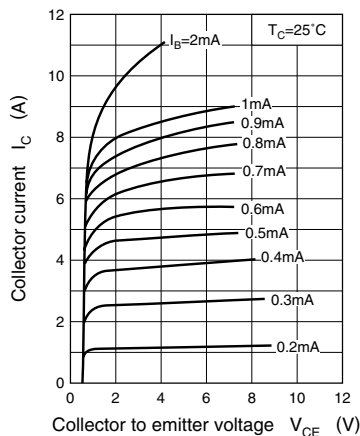
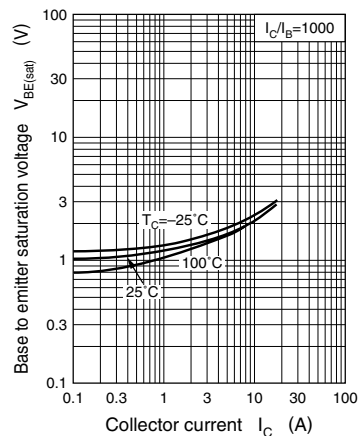
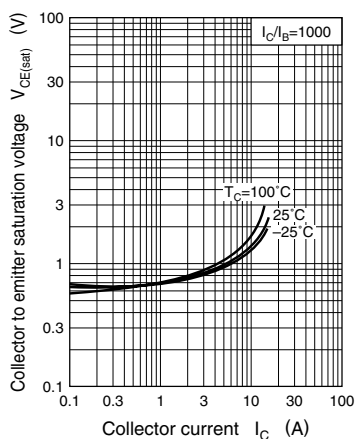
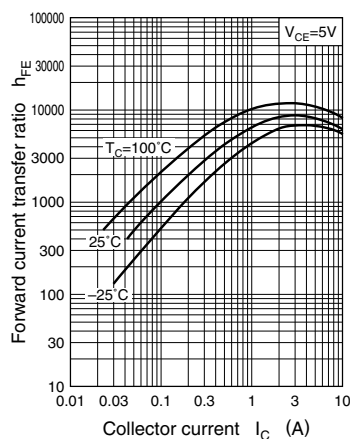
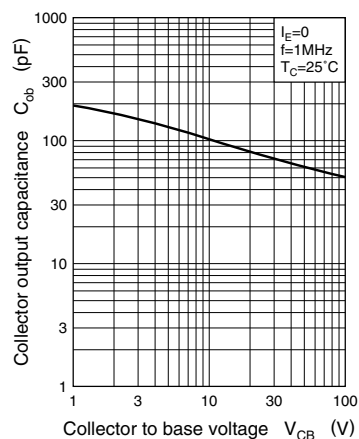
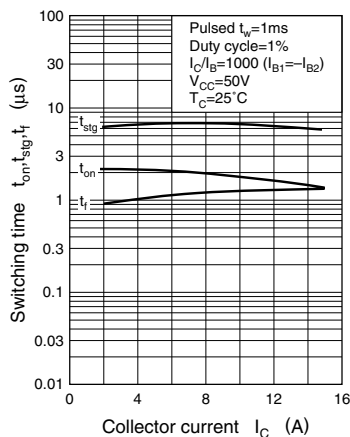
Note) *: Rank classification

Rank	Q	S	P
h_{FE2}	5 000 to 15 000	7 000 to 21 000	8 000 to 30 000

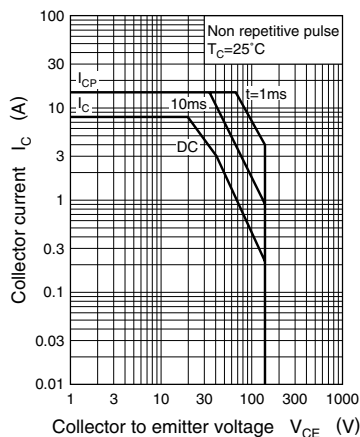


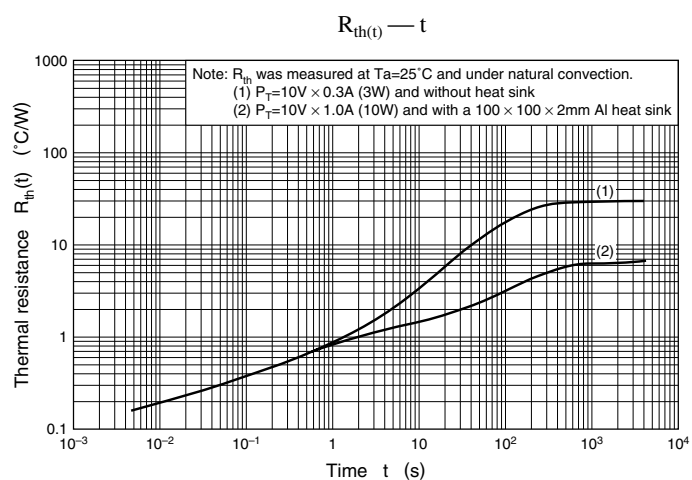
Internal Connection



$P_C - T_a$  $I_C - V_{CE}$  $V_{BE(sat)} - I_C$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $C_{ob} - V_{CB}$  $t_{on}, t_{stg}, t_f - I_C$ 

Area of safe operation (ASO)





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