

2SD2275

Silicon NPN triple diffusion planar type Darlington

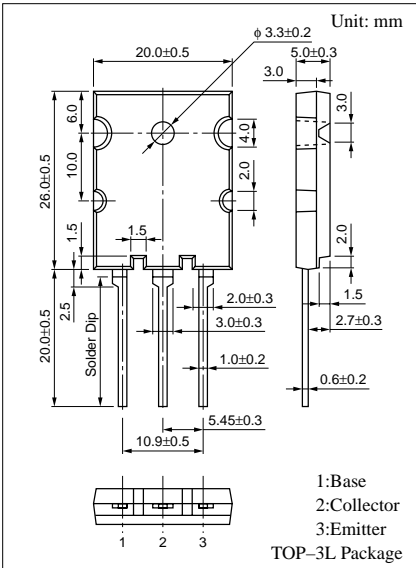
For power amplification
Complementary to 2SB1502

Features

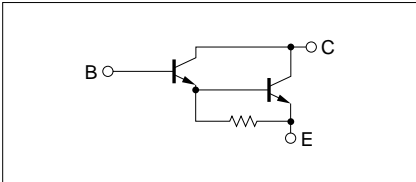
- Optimum for 55W HiFi output
- High forward current transfer ratio h_{FE} : 5000 to 30000
- Low collector to emitter saturation voltage $V_{CE(sat)}$: <2.5V

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

Parameter		Symbol	Ratings	Unit
Collector to base voltage		V_{CBO}	120	V
Collector to emitter voltage		V_{CEO}	100	V
Emitter to base voltage		V_{EBO}	5	V
Peak collector current		I_{CP}	8	A
Collector current		I_C	5	A
Collector power	$T_C=25^{\circ}C$	P_C	60	W
dissipation	$T_a=25^{\circ}C$		3.5	
Junction temperature		T_j	150	$^{\circ}C$
Storage temperature		T_{sig}	-55 to +150	$^{\circ}C$



Internal Connection

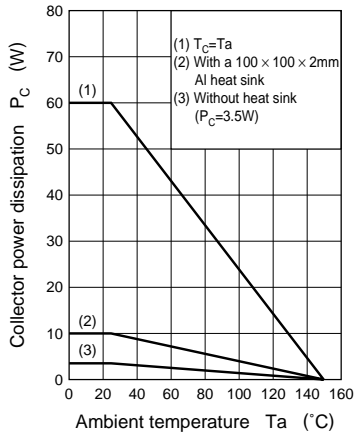
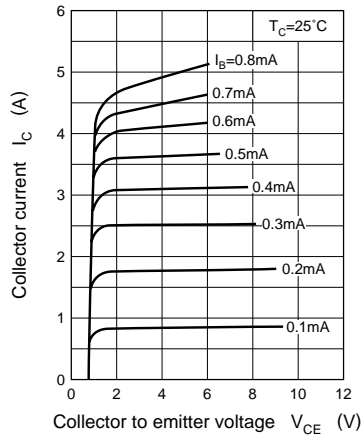
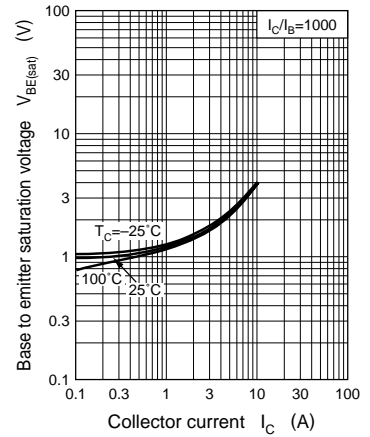
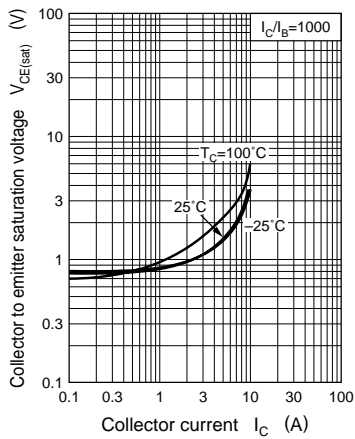
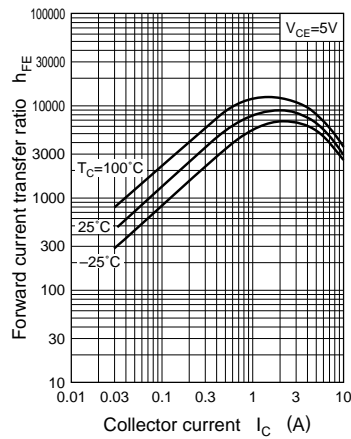
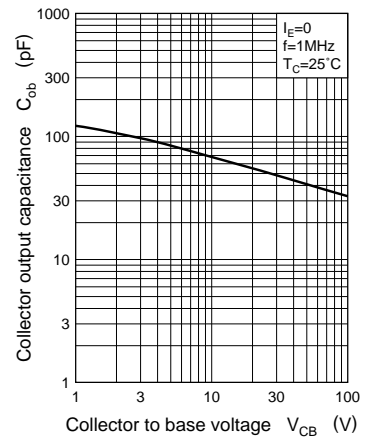
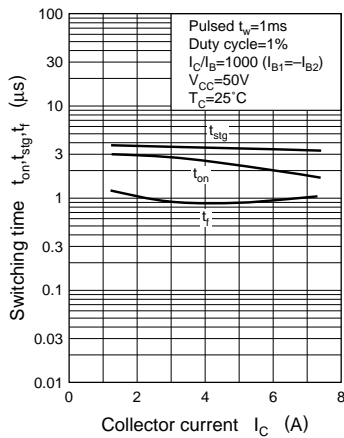


Electrical Characteristics ($T_C=25^\circ\text{C}$)

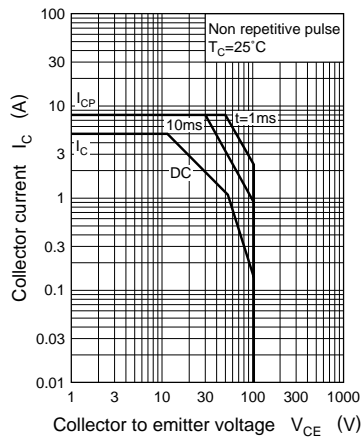
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$			100	μA
	I_{CEO}	$V_{CE} = 100\text{V}, I_B = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			100	μA
Collector to emitter voltage	V_{CEO}	$I_C = 30\text{mA}, I_B = 0$	100			V
Forward current transfer ratio	h_{FE1}	$V_{CE} = 5\text{V}, I_C = 1\text{A}$	2000			
	h_{FE2}^*	$V_{CE} = 5\text{V}, I_C = 4\text{A}$	5000		30000	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 4\text{mA}$			2.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 4\text{A}, I_B = 4\text{mA}$			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}	$I_C = 4\text{A}, I_{B1} = 4\text{mA}, I_{B2} = -4\text{mA}, V_{CC} = 50\text{V}$		2.5		μs
Storage time	t_{stg}			3.5		μs
Fall time	t_f			1.0		μs

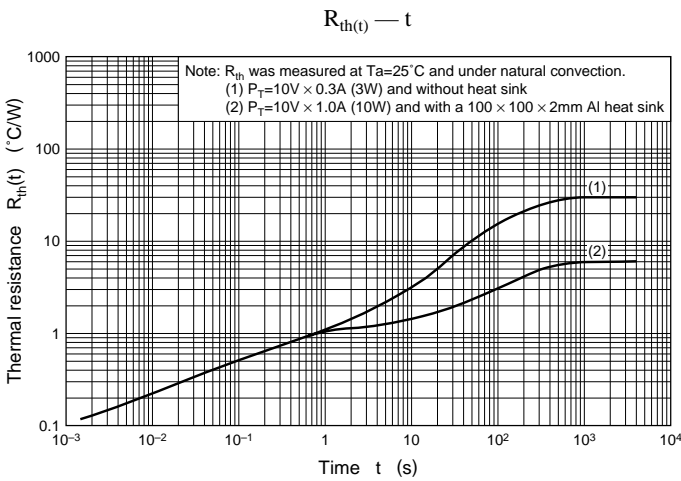
* h_{FE2} Rank classification

Rank	Q	S	P
h_{FE2}	5000 to 15000	7000 to 21000	8000 to 30000

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

Area of safe operation (ASO)





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