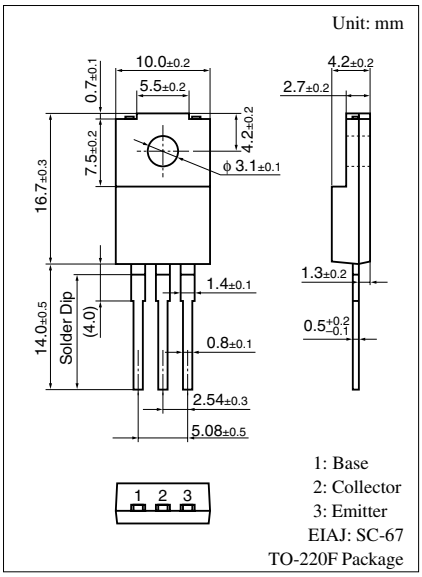
2SD1446

Silicon NPN triple diffusion planar type Darlington

For power amplification



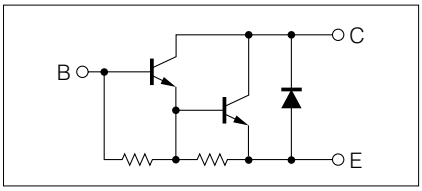
■ Features

- High forward current transfer ratio h_{FE}
- High collector to base voltage V_{CBO}
- Full-pack package which can be installed to the heat sink with one screw

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector to base voltage		V_{CBO}	500	V
Collector to emitter voltage		V_{CEO}	400	V
Emitter to base voltage		V_{EBO}	5	V
Peak collector current		I_{CP}	10	A
Collector current		I_C	6	A
Collector power dissipation	$T_C = 25°C$	P_C	40	W
	$T_a = 25°C$		2	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

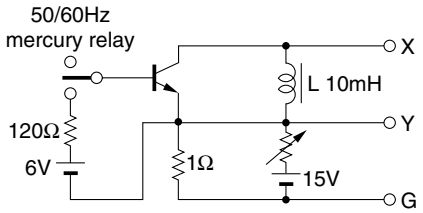
Internal Connection



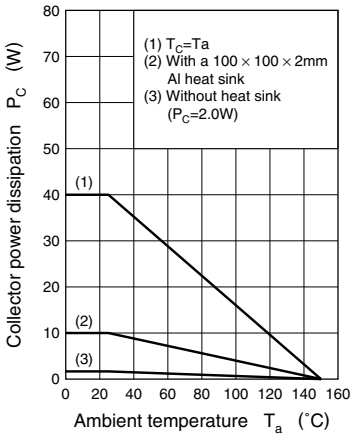
■ Electrical Characteristics $T_C = 25°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 350 V, I_E = 0			100	μA
Collector to emitter voltage *	$V_{CEO(sus)}$	I_C = 2 A, L = 10 mH	400			V
Emitter to base voltage	V_{EBO}	I_E = 0.1 A, I_C = 0	5			V
Forward current transfer ratio	h_{FE}	V_{CE} = 2 V, I_C = 2 A	500			
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 3 A, I_B = 0.06 A			1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 3 A, I_B = 0.06 A			2.5	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 1 A, f = 1 MHz		15		MHz

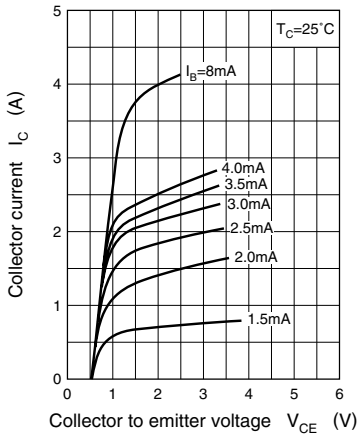
Note) *: $V_{CEO(sus)}$ Test circuit



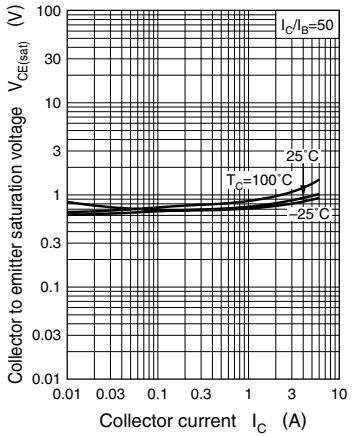
P_C — T_a



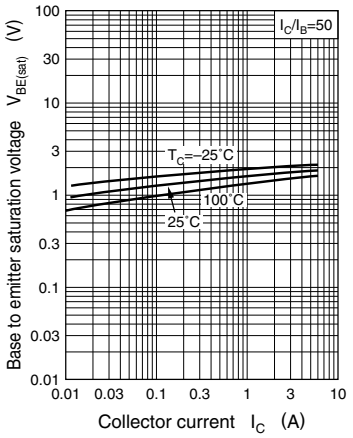
I_C — V_{CE}



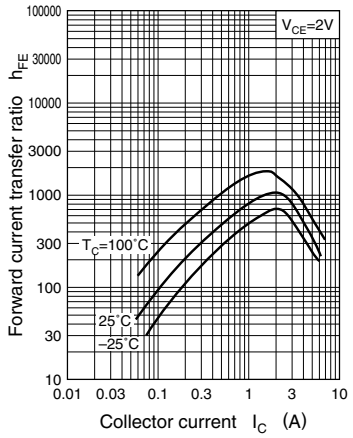
$V_{CE(sat)}$ — I_C



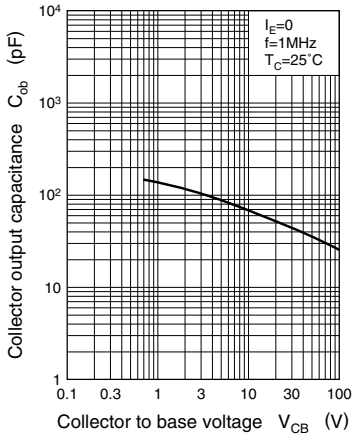
$V_{BE(sat)}$ — I_C



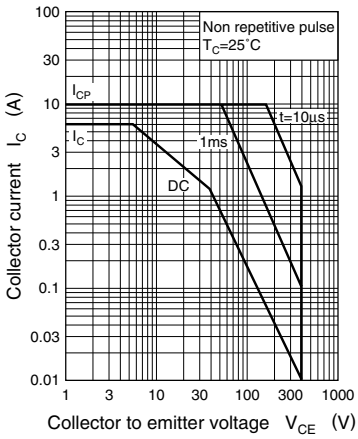
h_{FE} — I_C



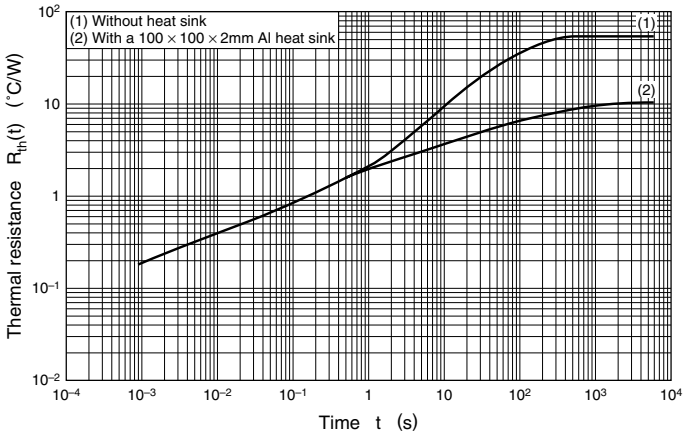
C_{ob} — V_{CB}



Area of safe operation (ASO)



$R_{th(t)}$ — t



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