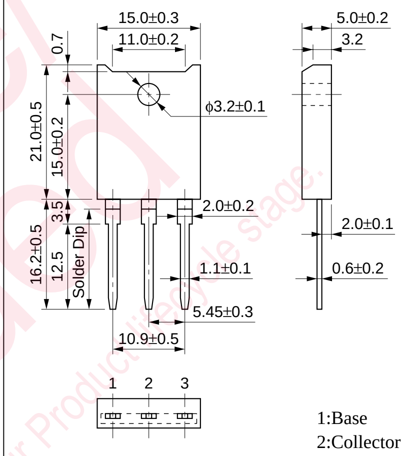
2SD1457, 2SD1457A

Silicon NPN triple diffusion planar type Darlington

For power amplification



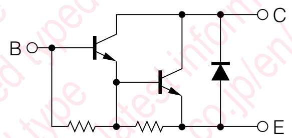
■ Features

- High foward 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	Ratings	Unit
Collector to base voltage		V_{CBO}	200	V
Collector to emitter voltage	2SD1457	V_{CEO}	150	V
	2SD1457A		200	
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	60	W
	Ta=25°C		3	
Junction temperature		T_j	150	˚C
Storage temperature		T_{stg}	–55 to +150	˚C

Internal Connection



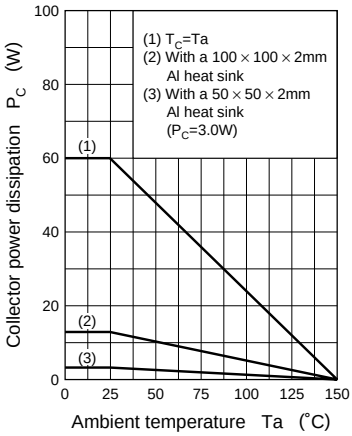
■ Electrical Characteristics (T_C=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 200V, I_E = 0			100	µA
Collector to emitter voltage	$V_{CEO(sus)}$	I_C = 2A, L = 10mH	150			V
Emitter to base voltage	V_{EBO}	I_E = 0.1A, I_C = 0	5			V
Forward current transfer ratio	h_{FE}*	V_{CE} = 2V, I_C = 2A	700		10000	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 3A, I_B = 0.06A			1.5	V
Base to emitter saturation voltage	$V_{BE(sat)}$	I_C = 3A, I_B = 0.06A			2.5	V
Transition frequency	f_T	V_{CE} = 10V, I_C = 0.5A, f = 1MHz		15		MHz

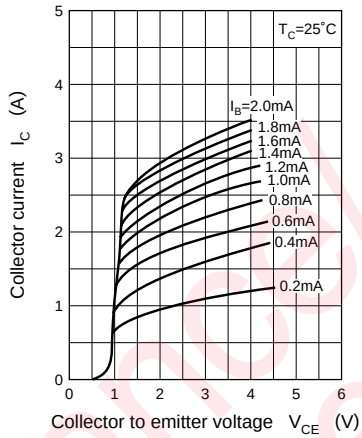
*h_{FE} Rank classification

Rank	Q	P	O
h_{FE}	700 to 2500	2000 to 5000	4000 to 10000

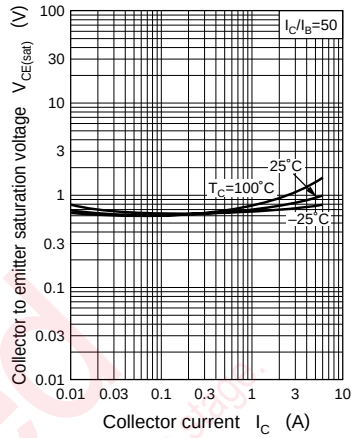
P_C — Ta



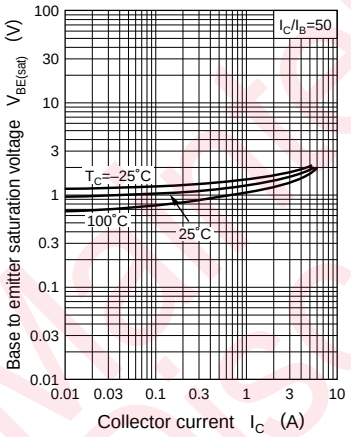
I_C — V_{CE}



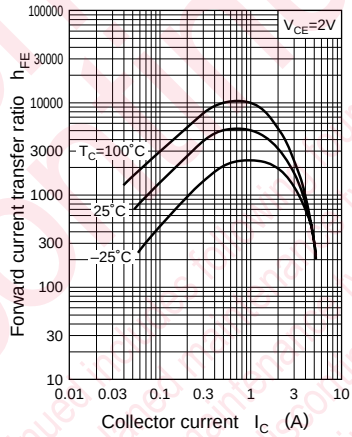
$V_{CE(sat)}$ — I_C



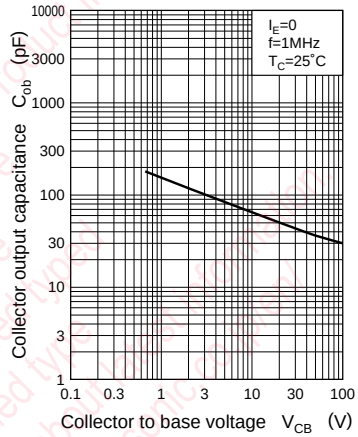
$V_{BE(sat)}$ — I_C



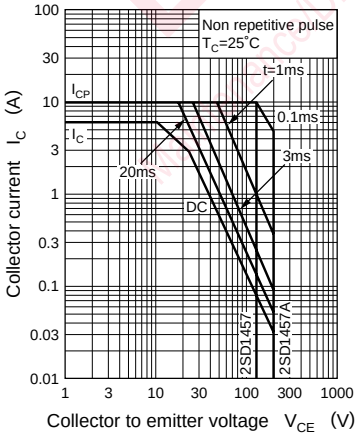
h_{FE} — I_C



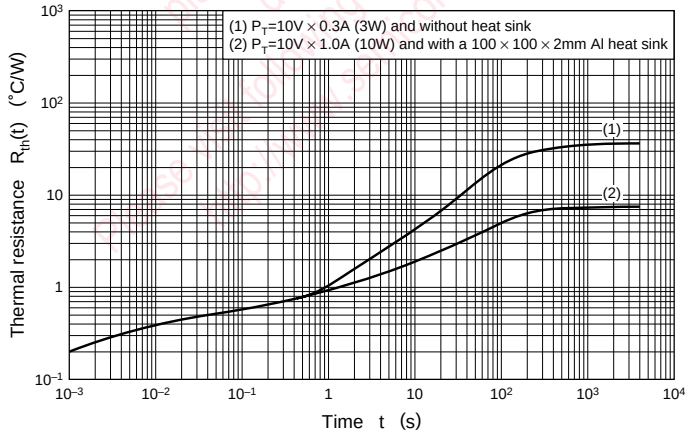
C_{ob} — V_{CB}



Area of safe operation (ASO)



$R_{th(t)}$ — t



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