

2SD1611

Silicon NPN triple diffusion planar type Darlington

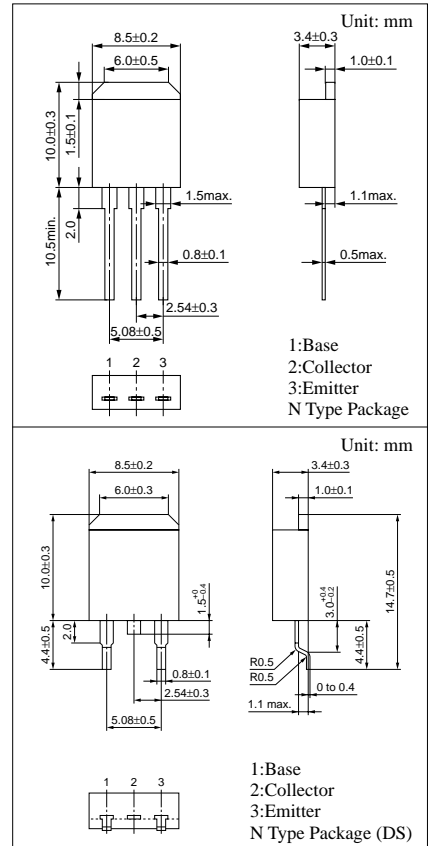
For power amplification

Features

- High forward current transfer ratio h_{FE}
- High collector to base voltage V_{CBO}
- N type package enabling direct soldering of the radiating fin to the printed circuit board, etc. of small electronic equipment.

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

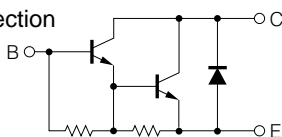
Parameter	Symbol	Rated	Unit	
Collector to base voltage	V_{CBO}	500	V	
Collector to emitter voltage	V_{CEO}	400	V	
Emitter to base voltage	V_{EBO}	5	V	
Peak collector current	I_{CP}	10	A	
Collector current	I_C	6	A	
Collector power dissipation	P_C	$T_C=25^\circ\text{C}$	40	W
		$T_a=25^\circ\text{C}$	1.3	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	



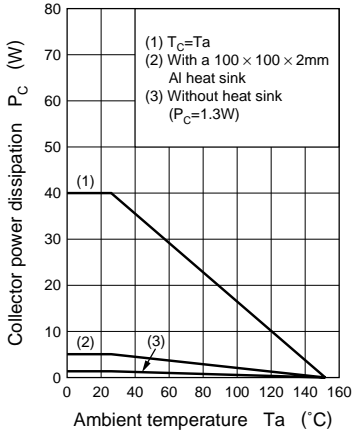
Electrical Characteristics ($T_C=25^\circ\text{C}$)

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

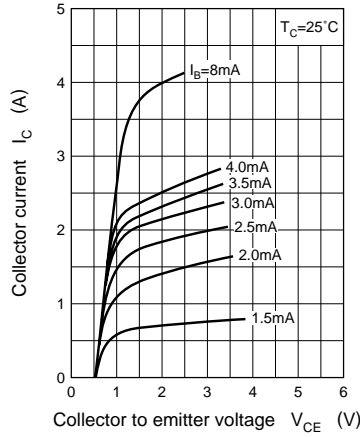
Internal Connection



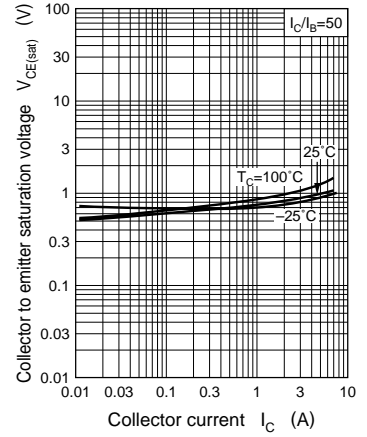
$P_C - T_a$



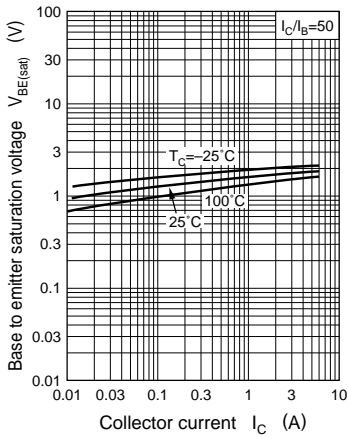
$I_C - V_{CE}$



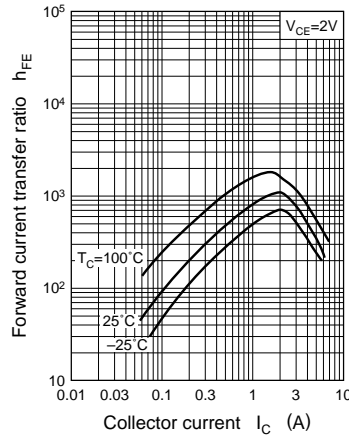
$V_{CE(sat)} - I_C$



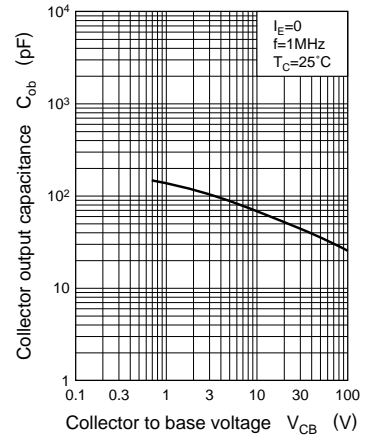
$V_{BE(sat)} - I_C$



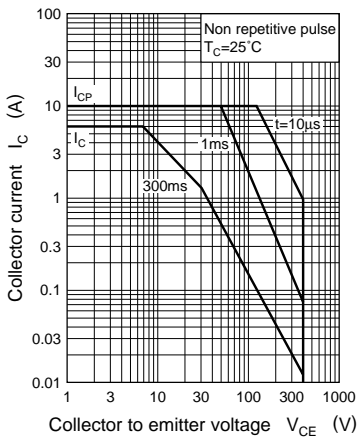
$h_{FE} - I_C$



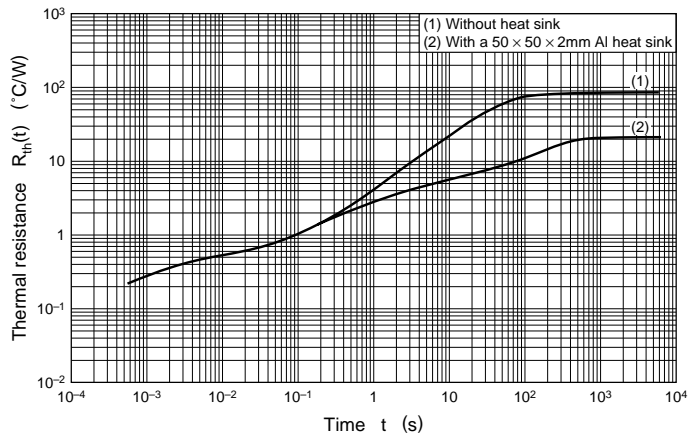
$C_{ob} - V_{CB}$



Area of safe operation (ASO)



$R_{th(t)} - t$



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