

2SD1461

Silicon NPN Triple-Diffused Planar Darlington Type

High Power Switching

■ Features

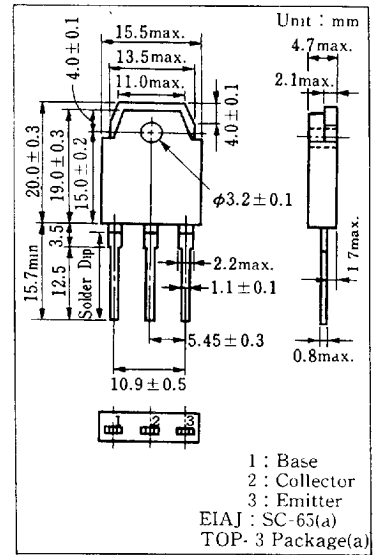
- High DC current gain (h_{FE})
- Large energy handling capability
- Suitable for ignitor

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

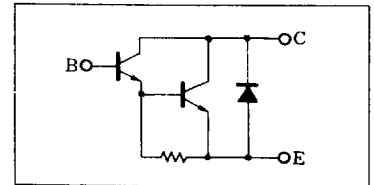
Item	Symbol	Value	Unit
Collector-base voltage	V_{CB0}	400	V
Collector-emitter voltage	V_{CE0}^*	400	V
Emitter-base voltage	V_{EB0}	10	V
Peak collector current	I_{CP}	10	A
Collector current	I_C	5	A
Collector power dissipation	$T_c=25^\circ\text{C}$	80	W
	$T_a=25^\circ\text{C}$	2.5	
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-65 ~ +150	$^\circ\text{C}$

* $R_{\theta j-c} = 220\Omega$

■ Package Dimensions



■ Inner Circuit

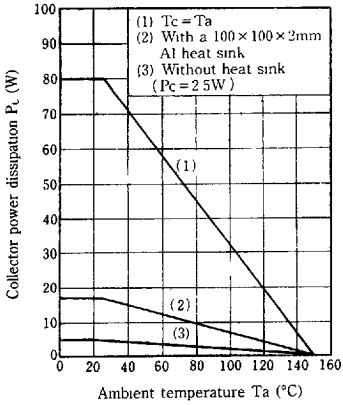


■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

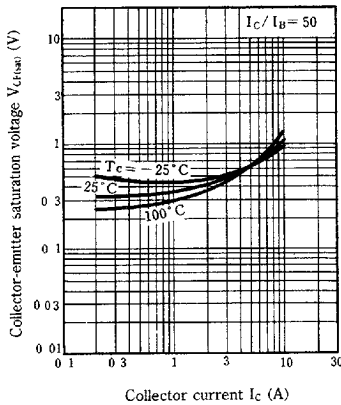
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CFO}	$V_{CE} = 300\text{ V}, I_B = 0$			500	μA
	I_{CER}	$V_{CE} = 350\text{ V}, R_{\theta j-c} = 220\Omega$			500	μA
Collector-emitter voltage	$V_{CE(RSUS)}$	$I_C = 5\text{ A}, L = 5\text{ mH}, R_{\theta j-c} = 220\Omega$	400			V
DC current gain	h_{FI}	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	400		2000	
Collector-emitter saturation voltage	$V_{CE(SAT)}$	$I_C = 5\text{ A}, I_B = 0.1\text{ A}$			1.5	V
Base-emitter saturation voltage	$V_{BE(SAT)}$	$I_C = 5\text{ A}, I_B = 0.1\text{ A}$			2	V
Energy handling capability	E_{sb}	$I_C = 7.8\text{ A}, L = 10\text{ mH}, R_{\theta j-c} = 220\Omega, V_{CE} = 400\text{ V}$	300			mJ
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 0.2\text{ A}, f = 1\text{ MHz}$		15		MHz

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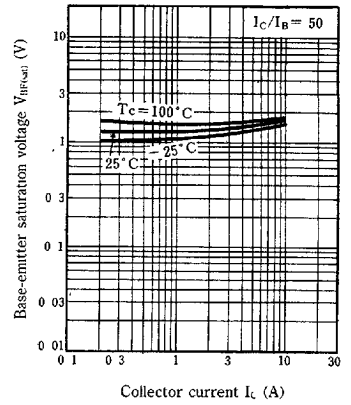
$P_C - T_a$



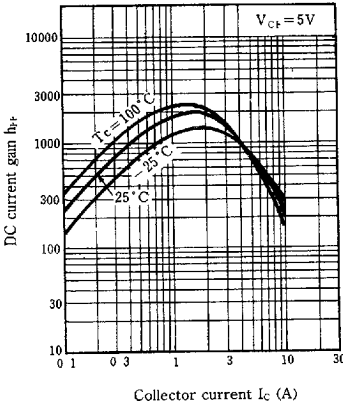
$V_{CE(sat)} - I_C$



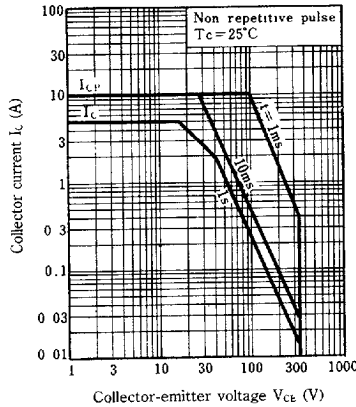
$V_{BE(sat)} - I_C$



$h_{FE} - I_C$



Area of safe operation (ASO)



$R_{th} - t$

