

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

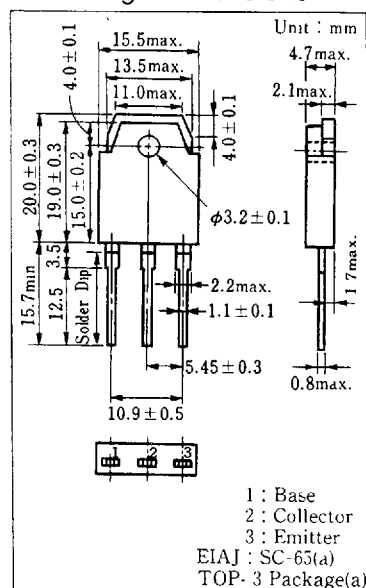
Item	Symbol	Value	Unit
Collector-base voltage	V_{CB0}	400	V
Collector-emitter voltage	V_{CE1R}^*	400	V
Emitter-base voltage	V_{EB0}	10	V
Peak collector current	I_{CP}	10	A
Collector current	I_C	5	A
Collector power dissipation	$T_c=25^\circ\text{C}$	P_C	W
	$T_a=25^\circ\text{C}$		
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-65 \sim +150$	$^\circ\text{C}$

* $R_{Bk} = 220\Omega$

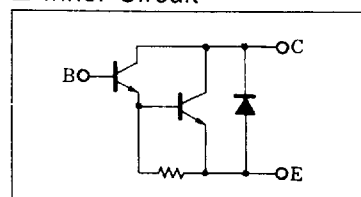
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

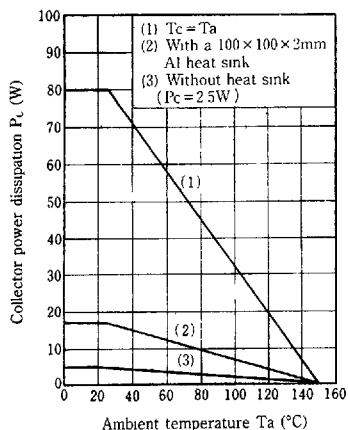
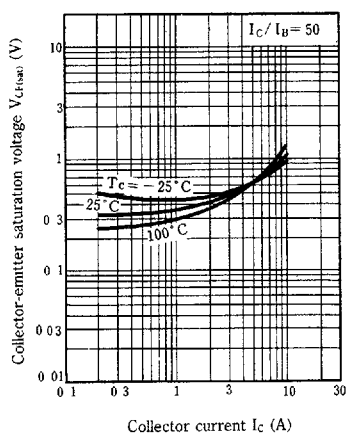
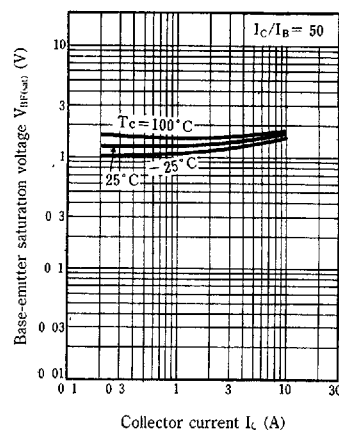
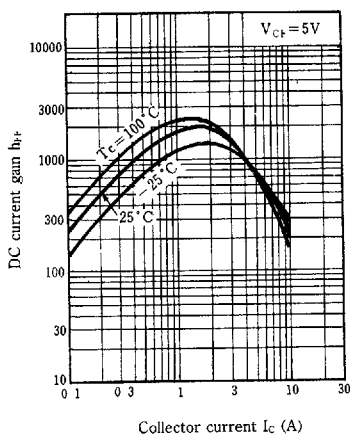
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{C0}	$V_{CE} = 300\text{ V}, I_B = 0$			500	μA
	I_{CER}	$V_{CE} = 350\text{ V}, R_{BE} = 220\Omega$			500	μA
Collector-emitter voltage	$V_{CE(sat)}$	$I_C = 5\text{ A}, L = 5\text{ mH}, R_{BE} = 220\Omega$	400			V
DC current gain	h_{FI}	$V_{CE} = 5\text{ V}, I_C = 5\text{ A}$	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_{cb}	$I_C = 7.8\text{ A}, L = 10\text{ mH}$ $R_{thL} = 220\Omega, V_f = 400\text{ V}$	300			mJ
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 0.2\text{ A}, f = 1\text{ MHz}$		15		MHz

■ Package Dimensions

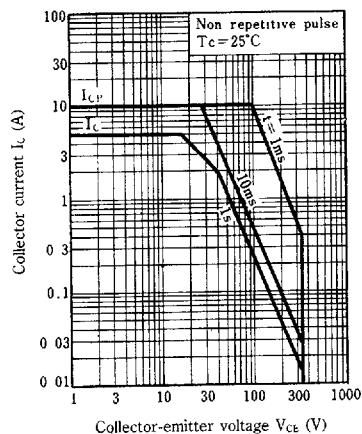


■ Inner Circuit



$P_C - T_a$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$ 

Area of safe operation (ASO)

 $R_{th} - t$ 