

2SD2057

Silicon NPN triple diffusion planar type

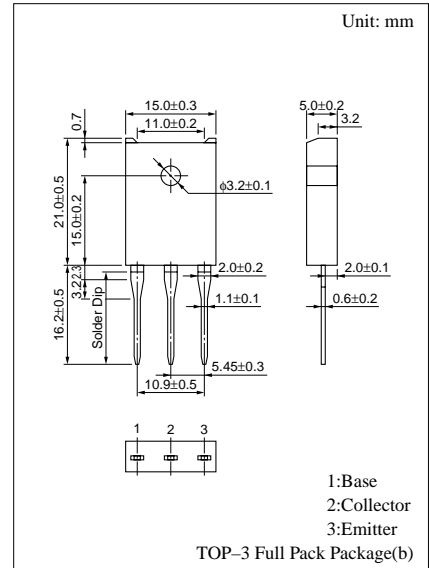
For horizontal deflection output

Features

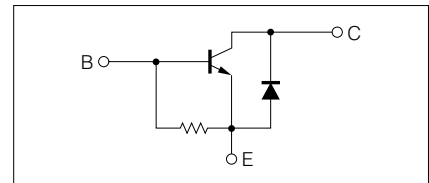
- Incorporating a built-in damper diode
- Reduction of a parts count and simplification of a circuit are allowed
- High breakdown voltage with high reliability
- High-speed switching
- Wide area of safe operation (ASO)
- Full-pack package which can be installed to the heat sink with one screw

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

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	1500	V
Collector to emitter voltage	V_{CES}	1500	V
Emitter to base voltage	V_{EBO}	7	V
Peak collector current	I_{CP}	20	A
Collector current	I_C	5	A
Base current	I_B	4	A
Collector power dissipation	P_C	$T_C=25^\circ\text{C}$	100
		$T_a=25^\circ\text{C}$	3
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



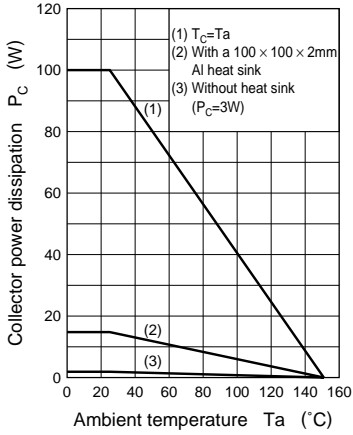
Internal Connection



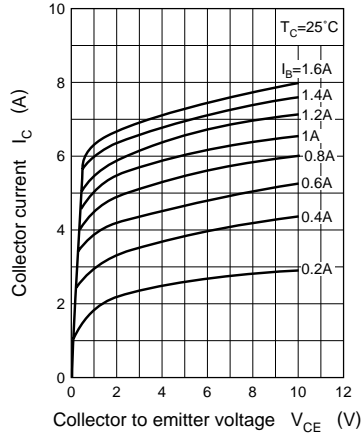
Electrical Characteristics ($T_C=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 1000\text{V}, I_E = 0$			30	μA
		$V_{CB} = 1500\text{V}, I_E = 0$			300	μA
Emitter to base voltage	V_{EBO}	$I_E = 500\text{mA}, I_C = 0$	7			V
Forward current transfer ratio	h_{FE}	$V_{CE} = 10\text{V}, I_C = 5\text{A}$	4.5		15	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 5\text{A}, I_B = 1.2\text{A}$			8	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 5\text{A}, I_B = 1.2\text{A}$			1.5	V
Transition frequency	f_T	$V_{CE} = 10\text{V}, I_C = 1\text{A}, f = 0.5\text{MHz}$		2		MHz
Storage time (L-load)	t_{stg}	$I_C = 5\text{A}, I_{B1} = 1.2\text{A}, I_{B2} = -1.2\text{A}$			12	μs
Fall time (L-load)	t_f	$L_{leak} = 5\mu\text{H}$			0.8	μs
Diode forward voltage	V_F	$I_C = -6\text{A}, I_B = 0$			-2.3	V

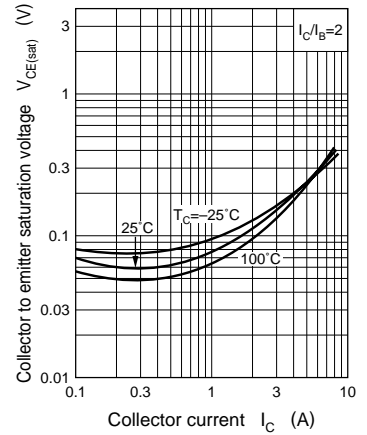
$P_C - T_a$



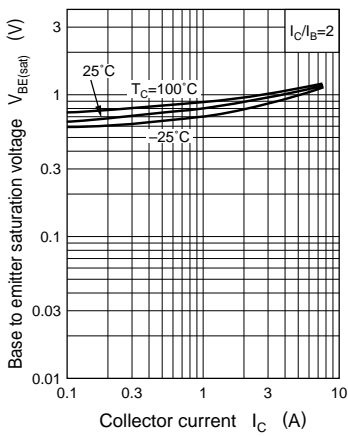
$I_C - V_{CE}$



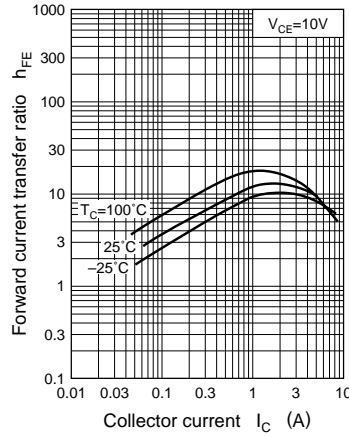
$V_{CE(sat)} - I_C$



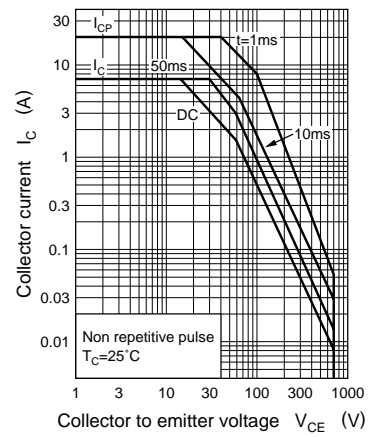
$V_{BE(sat)} - I_C$



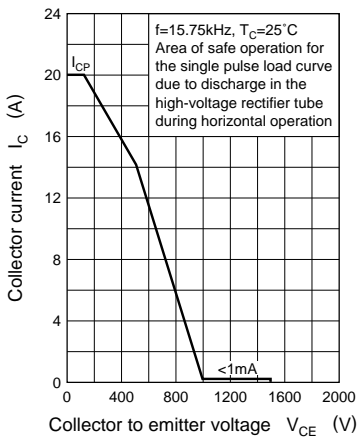
$h_{FE} - I_C$



Area of safe operation (ASO)



Area of safe operation, horizontal operation ASO



$R_{th(t)} - t$

