

# 2SD1535

## Silicon NPN triple diffusion planar type darlington

For high power amplification

### ■ Features

- Excellent collector current  $I_C$  characteristics of forward current transfer ratio  $h_{FE}$
- High collector-base voltage (Emitter open)  $V_{CBO}$
- Wide safe operation area
- Full-pack package which can be installed to the heat sink with one screw

### ■ Absolute Maximum Ratings $T_C = 25^\circ C$

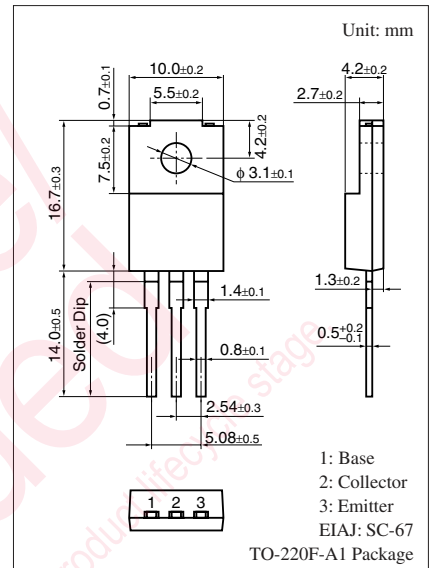
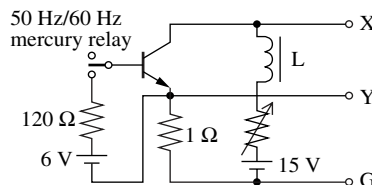
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	500	V
Collector-emitter voltage (Base open)	$V_{CEO}$	400	V
Emitter-base voltage (Collector open)	$V_{EBO}$	12	V
Collector current	$I_C$	7	A
Peak collector current	$I_{CP}$	14	A
Base current	$I_B$	0.5	A
Collector power dissipation	$P_C$	50	W
	$T_a = 25^\circ C$	2.0	
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ C$

### ■ Electrical Characteristics $T_C = 25^\circ C \pm 3^\circ C$

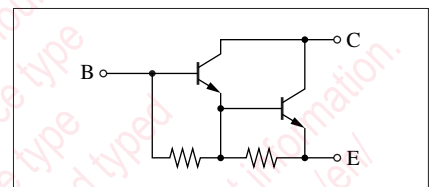
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter sustaining voltage *	$V_{CEO(SUS)}$	$I_C = 100 \text{ mA}, R_{BE} = \infty, L = 25 \text{ mH}$	400			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 500 \text{ V}, I_E = 0$			100	$\mu A$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 400 \text{ V}, I_B = 0$			100	$\mu A$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 12 \text{ V}, I_C = 0$			100	mA
Forward current transfer ratio	$h_{FE1}$	$V_{CE} = 2 \text{ V}, I_C = 2 \text{ A}$	500			—
	$h_{FE2}$	$V_{CE} = 2 \text{ V}, I_C = 6 \text{ A}$	200			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 7 \text{ A}, I_B = 70 \text{ mA}$			2.0	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 7 \text{ A}, I_B = 70 \text{ mA}$			2.5	V
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}, I_C = 0.5 \text{ A}, f = 1 \text{ MHz}$		20		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		70		pF
Turn-on time	$t_{on}$	$I_C = 7 \text{ A}, I_{B1} = 70 \text{ mA}, I_{B2} = -70 \text{ mA}$ ,		1.5		$\mu s$
Storage time	$t_{stg}$	$V_{CC} = 300 \text{ V}$		5.0		$\mu s$
Fall time	$t_f$			6.5		$\mu s$

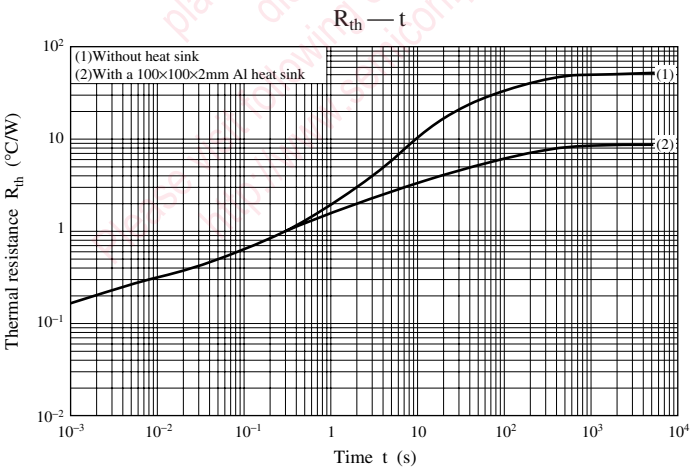
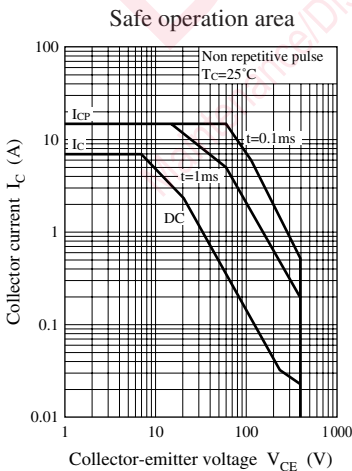
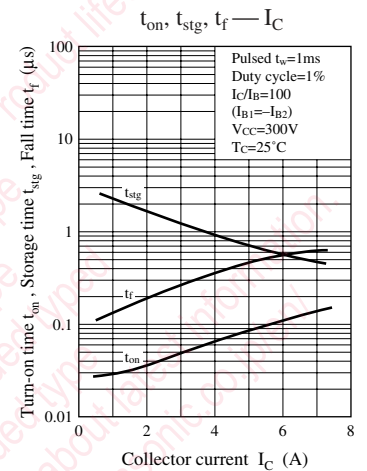
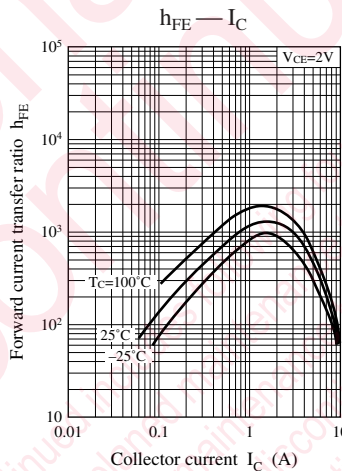
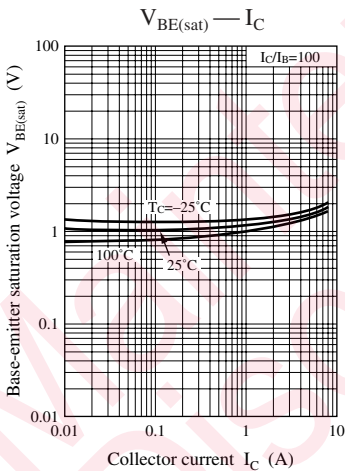
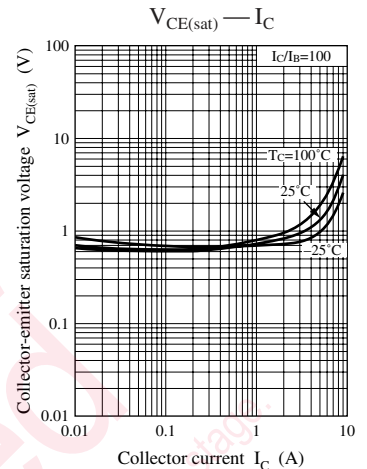
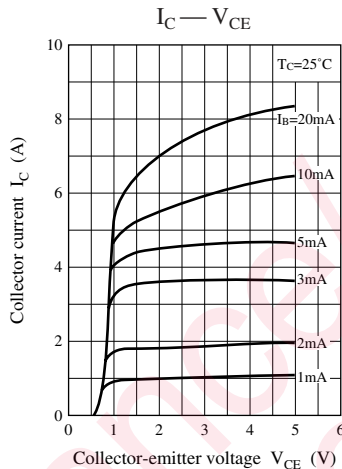
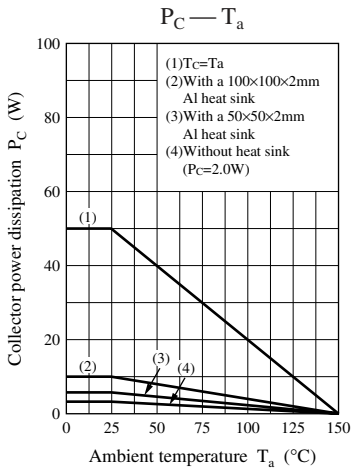
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*:  $V_{CEO(SUS)}$  Test circuit



### Internal Connection





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