

# 2SD1499

## Silicon NPN triple diffusion planar type

For high power amplification

Complementary to 2SB1063

### ■ Features

- Extremely satisfactory linearity of the forward current transfer ratio  $h_{FE}$
- Wide safe operation area
- High transition frequency  $f_T$
- 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	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	100	V
Collector-emitter voltage (Base open)	$V_{CEO}$	100	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	5	A
Peak collector current	$I_{CP}$	8	A
Collector power dissipation	$P_C$	40	W
		$T_a = 25^\circ\text{C}$	
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

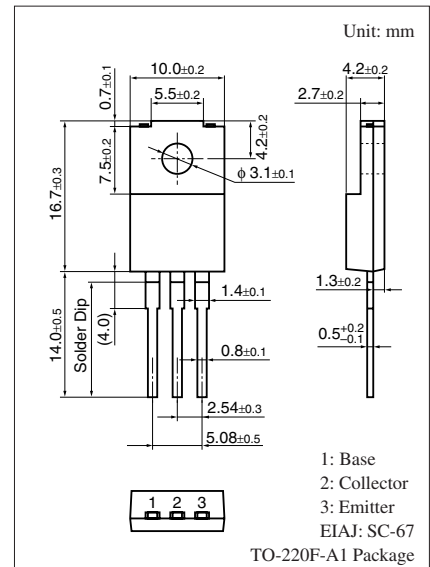
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

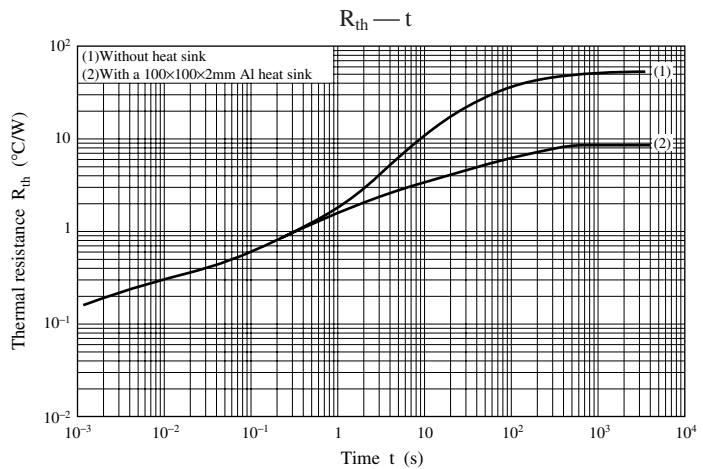
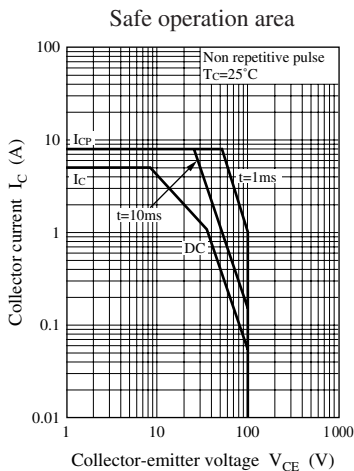
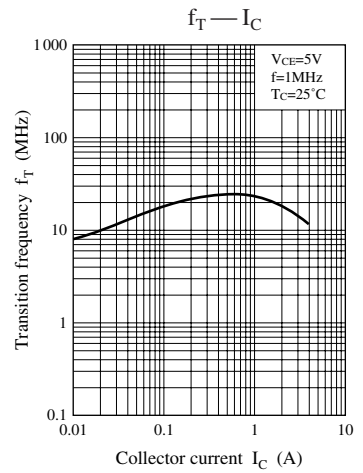
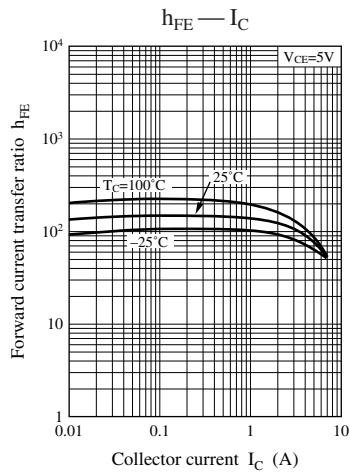
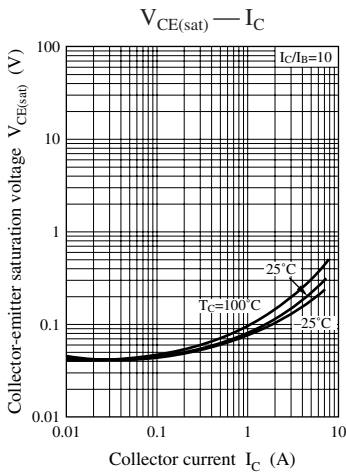
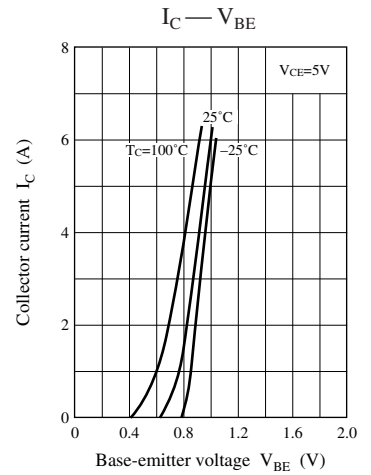
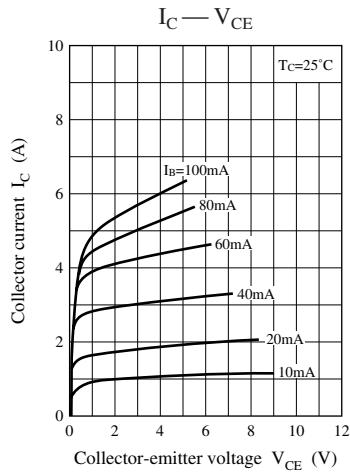
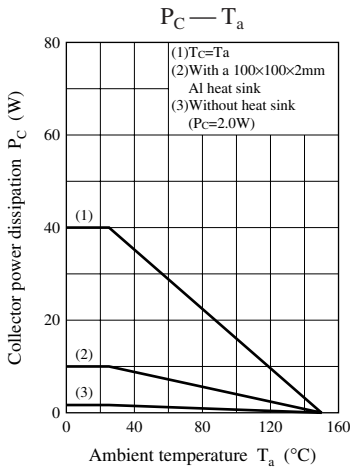
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Base-emitter voltage	$V_{BE}$	$V_{CE} = 5\text{ V}, I_C = 3\text{ A}$			1.8	V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 100\text{ V}, I_E = 0$			50	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 3\text{ V}, I_C = 0$			50	$\mu\text{A}$
Forward current transfer ratio	$h_{FE1}$	$V_{CE} = 5\text{ V}, I_C = 20\text{ mA}$	20			—
	$h_{FE2}^*$	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}$	40		200	
	$h_{FE3}$	$V_{CE} = 5\text{ V}, I_C = 3\text{ A}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 0.3\text{ A}$			2.0	V
Transition frequency	$f_T$	$V_{CE} = 5\text{ V}, I_C = 0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		90		pF

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

2. \*: Rank classification

Rank	R	Q	P
$h_{FE2}$	40 to 80	60 to 120	100 to 200





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