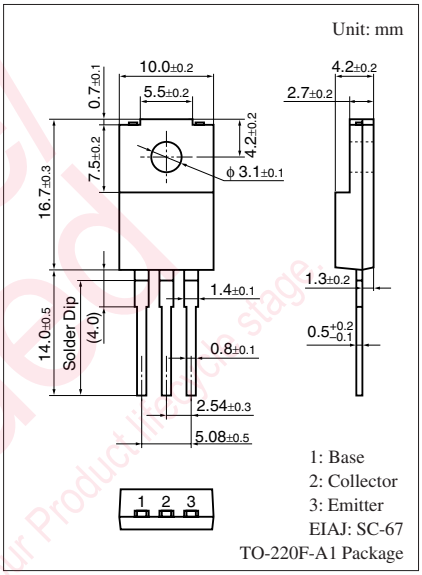
2SD1499

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 $T_C = 25°C$

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
	$T_a = 25°C$		2.0	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

■ Electrical Characteristics $T_C = 25°C \pm 3°C$

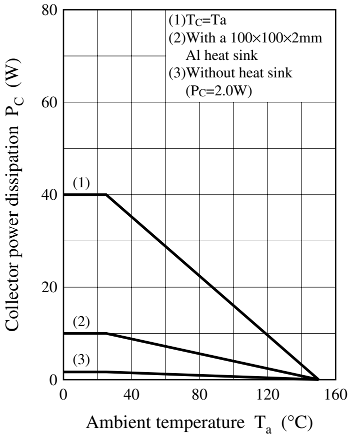
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Base-emitter voltage	V_{BE}	V_{CE} = 5 V, I_C = 3 A			1.8	V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 100 V, I_E = 0			50	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 3 V, I_C = 0			50	μA
Forward current transfer ratio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

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

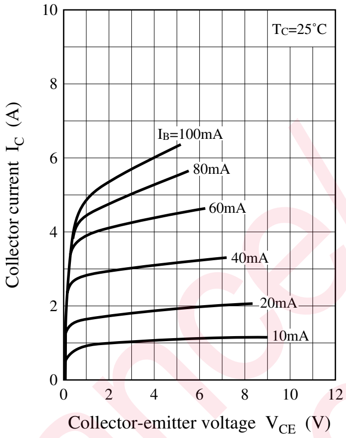
2. *: Rank classification

Rank	R	Q	P
h_{FE2}	40 to 80	60 to120	100 to 200

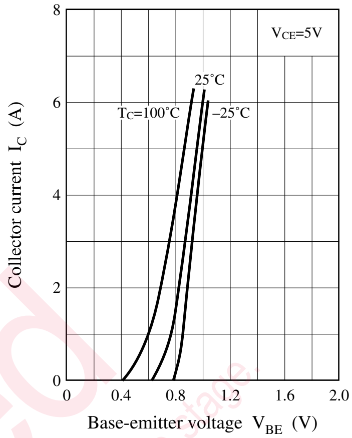
P_C — T_a



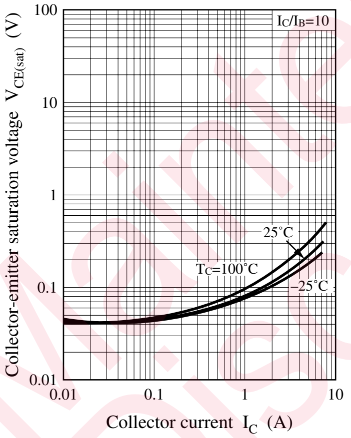
I_C — V_{CE}



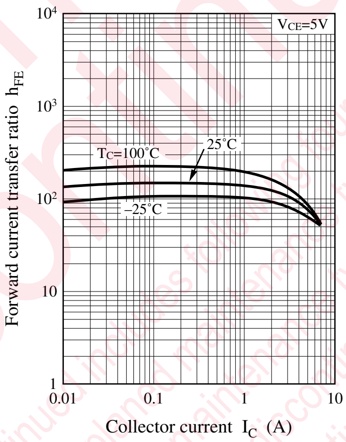
I_C — V_{BE}



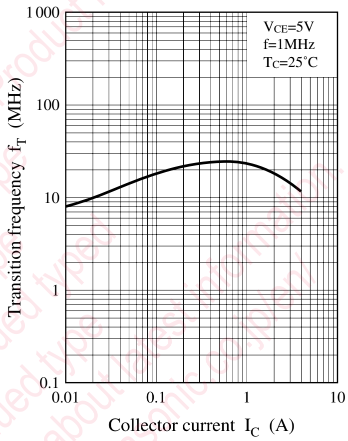
$V_{CE(sat)}$ — I_C



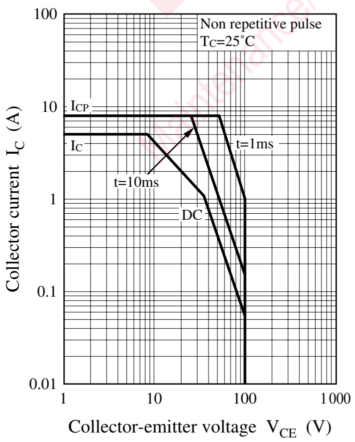
h_{FE} — I_C



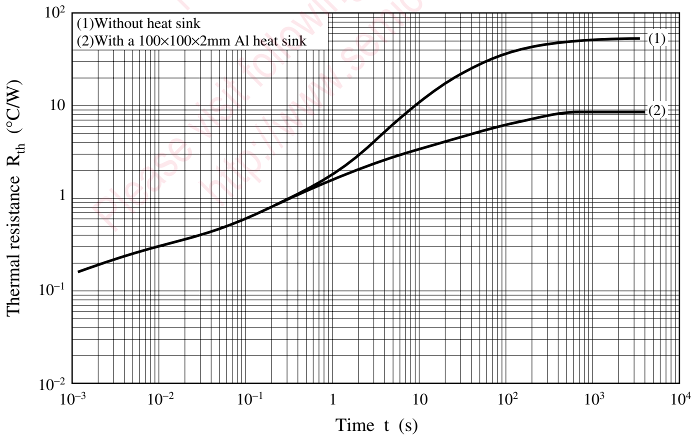
f_T — I_C



Safe operation area



R_{th} — t



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