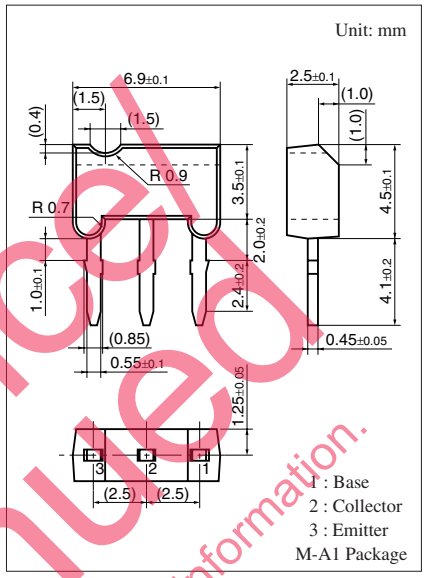
2SD1458

Silicon NPN epitaxial planar type

For low-frequency amplification



■ Features

- High forward current transfer ratio h_{FE}
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	20	V
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Emitter-base voltage (Collector open)	V_{EBO}	15	V
Collector current	I_C	0.7	A
Peak collector current	I_{CP}	1.5	A
Collector power dissipation *	P_C	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

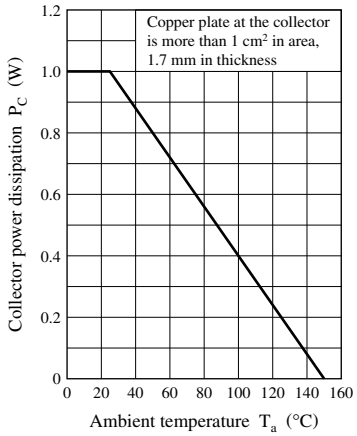
Note) ∗: Printed circuit board: Copper foil area of 1 cm² or more, and the board thickness of 1.7 mm for the collector portion

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

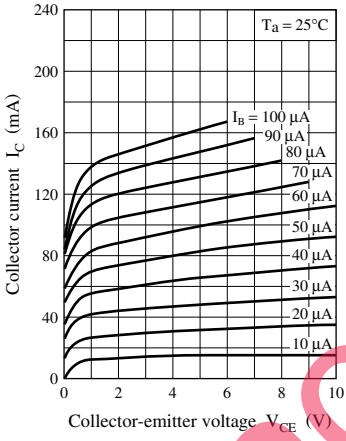
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 10 µA, I_E = 0	20			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 1 mA, I_B = 0	20			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 10 µA, I_C = 0	15			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 15 V, I_E = 0			1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 15 V, I_B = 0			10	µA
Forward current transfer ratio *	h_{FE}	V_{CE} = 10 V, I_C = 150 mA	1 000		2 500	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 500 mA, I_B = 50 mA			0.4	V
Transition frequency	f_T	V_{CB} = 20 V, I_E = −20 mA, f = 200 MHz		55		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		11	15	pF

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. ∗: Pulse measurement

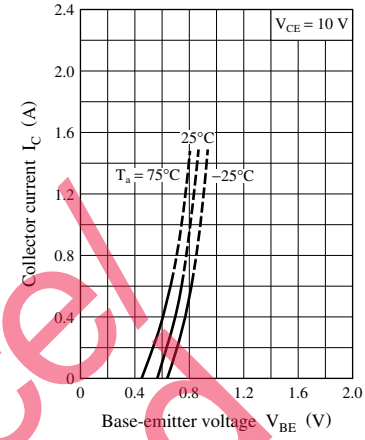
P_C — T_a



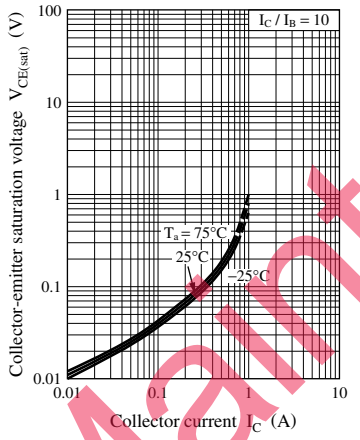
I_C — V_{CE}



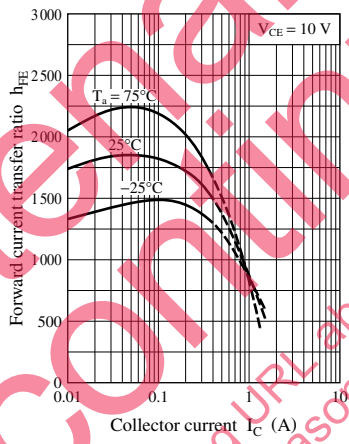
I_C — V_{BE}



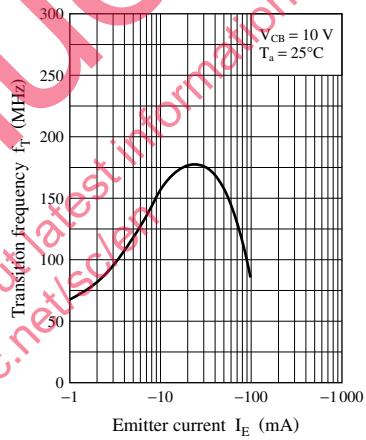
$V_{CE(sat)}$ — I_C



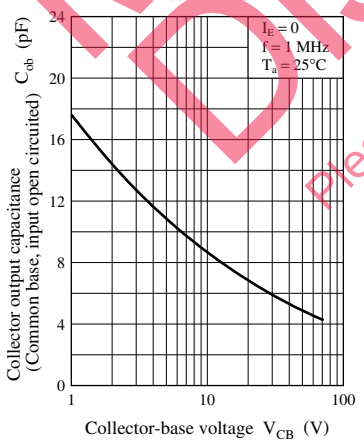
h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}



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