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# 2SD2258

## Silicon NPN epitaxial planar type

For low-frequency output amplification

### ■ Features

- Darlington connection
- High forward current transfer ratio  $h_{FE}$
- Allowing supply with the radial taping

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	60	V
Collector-emitter voltage (Base open)	$V_{CEO}$	50	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	1	A
Peak collector current	$I_{CP}$	1.5	A
Collector power dissipation *	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: Printed circuit board: Copper foil area of  $1\text{ cm}^2$  or more, and the board thickness of 1.7 mm for the collector portion

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

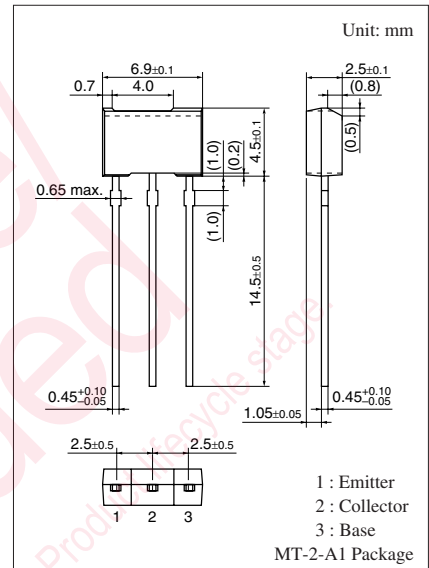
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 100\ \mu\text{A}$ , $I_E = 0$	60			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 1\ \text{mA}$ , $I_B = 0$	50			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 100\ \mu\text{A}$ , $I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 45\ \text{V}$ , $I_E = 0$			0.1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 4\ \text{V}$ , $I_C = 0$			0.1	$\mu\text{A}$
Forward current transfer ratio *1,2	$h_{FE}$	$V_{CE} = 10\ \text{V}$ , $I_C = 1\ \text{A}$	4000		40000	—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 1\ \text{A}$ , $I_B = 1\ \text{mA}$			1.8	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 1\ \text{A}$ , $I_B = 1\ \text{mA}$			2.2	V
Transition frequency	$f_T$	$V_{CB} = 25\ \text{V}$ , $I_E = -50\ \text{mA}$ , $f = 200\ \text{MHz}$		150		MHz

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

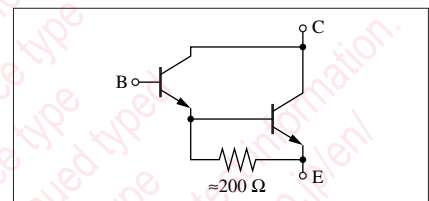
2. \*1: Pulse measurement

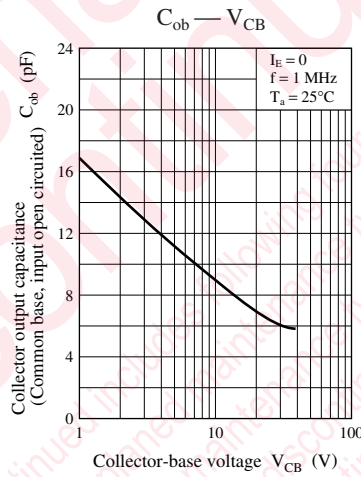
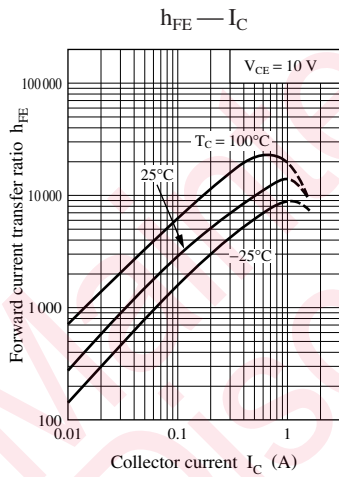
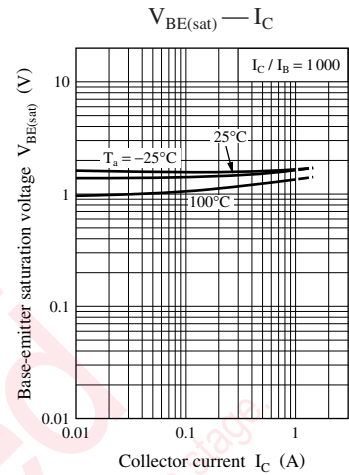
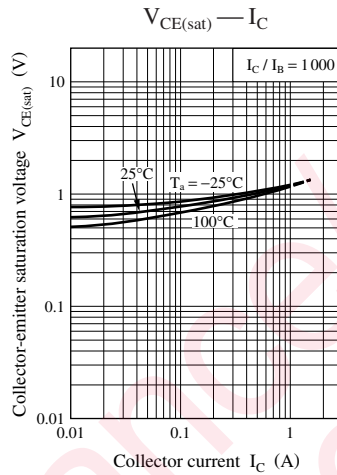
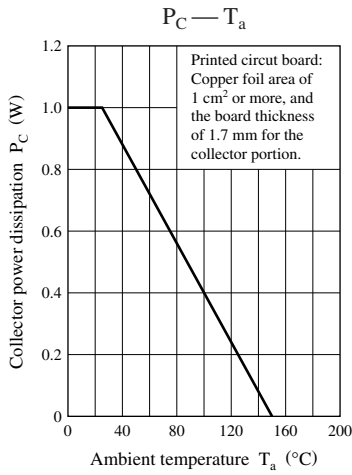
\*2: Rank classification

Rank	Q	R	S
$h_{FE}$	4000 to 10000	8000 to 20000	16000 to 40000



### Internal Connection





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