

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 to base voltage	V_{CBO}	60	V
Collector to emitter voltage	V_{CEO}	50	V
Emitter to base voltage	V_{EBO}	5	V
Peak collector current	I_{CP}	1.5	A
Collector current	I_C	1	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 1cm^2 or more, and the board thickness of 1.7 mm for the collector portion

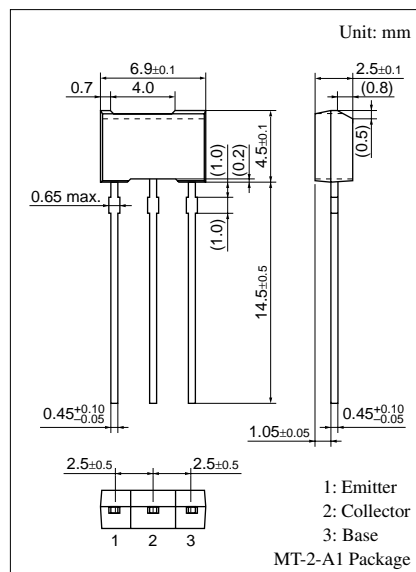
■ Electrical Characteristics $T_a = 25^\circ\text{C}$

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

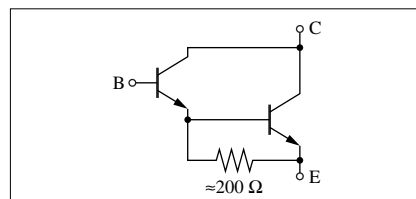
Note) *1: Pulse measurement

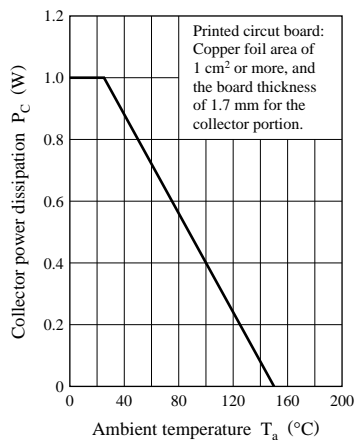
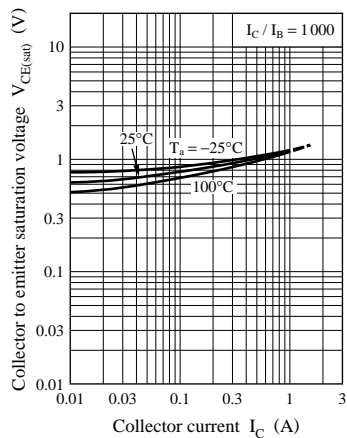
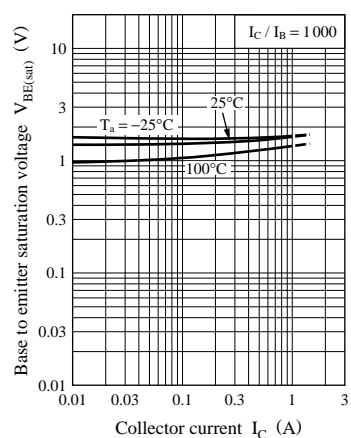
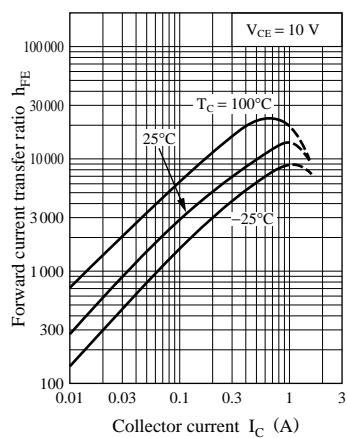
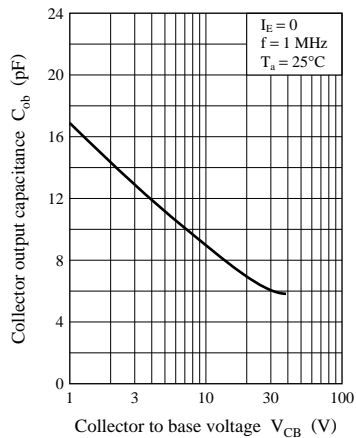
*2: h_{FE} Rank classification

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



Internal Connection



$P_C - T_a$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $C_{ob} - V_{CB}$ 

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