

2SD1051

Silicon NPN epitaxial planar type

For low-frequency power amplification

Complementary to 2SB0819 (2SB819)

■ Features

- High collector-emitter voltage (Base open) V_{CEO}
- Low collector power dissipation P_C
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	50	V
Collector-emitter voltage (Base open)	V_{CEO}	40	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	1.5	A
Peak collector current	I_{CP}	3	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 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

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

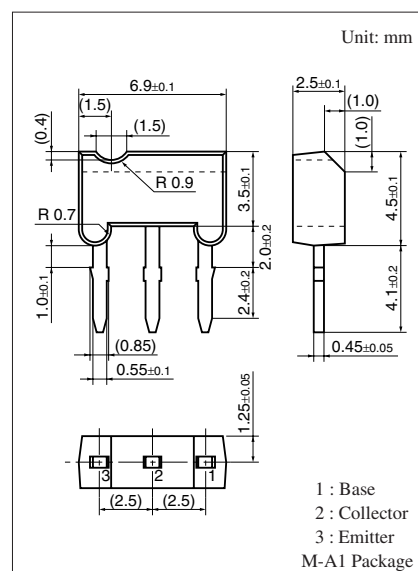
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 1\text{ mA}$, $I_E = 0$	50			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 2\text{ mA}$, $I_B = 0$	40			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 20\text{ V}$, $I_E = 0$			1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 10\text{ V}$, $I_B = 0$			100	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 5\text{ V}$, $I_C = 0$			10	μA
Forward current transfer ratio *1, 2	h_{FE}	$V_{CE} = 5\text{ V}$, $I_C = 1\text{ A}$	80	120	220	—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 1.5\text{ A}$, $I_B = 0.15\text{ A}$			1	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 2\text{ A}$, $I_B = 0.2\text{ A}$			1.5	V
Transition frequency *1	f_T	$V_{CB} = 5\text{ V}$, $I_E = -0.5\text{ A}$, $f = 200\text{ MHz}$		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 20\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$		45		pF

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

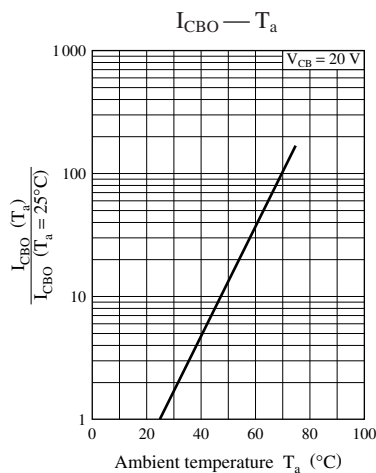
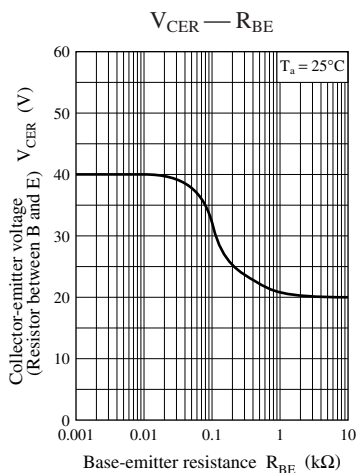
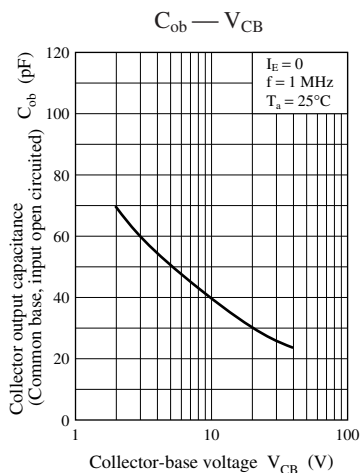
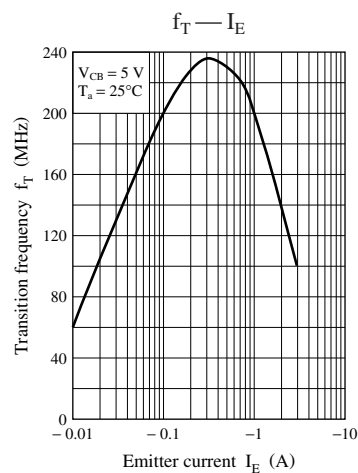
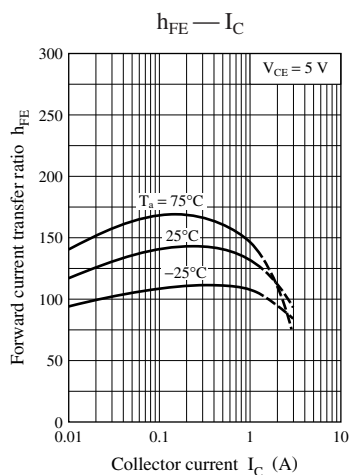
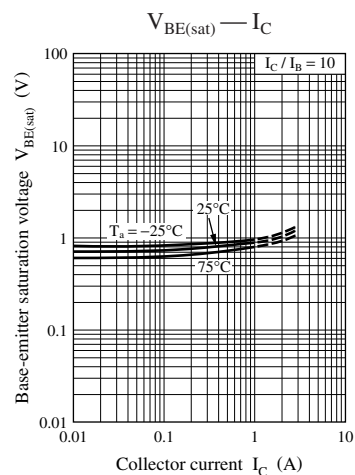
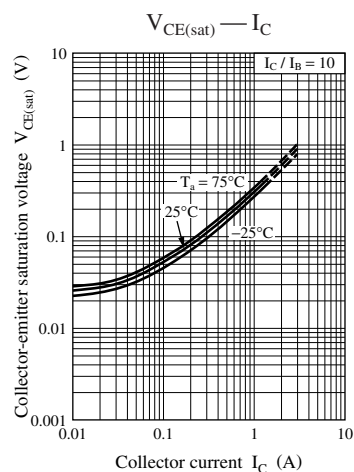
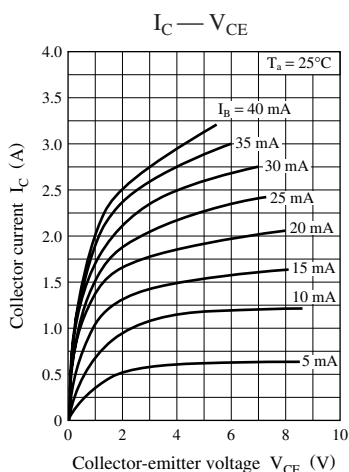
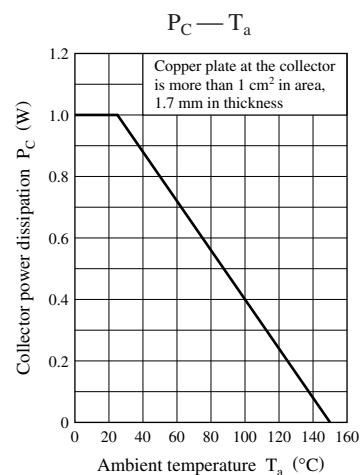
2. *1: Pulse measurement

*2: Rank classification

Rank	Q	R
h_{FE}	80 to 160	120 to 220



Note) The part number in the parenthesis shows conventional part number.



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