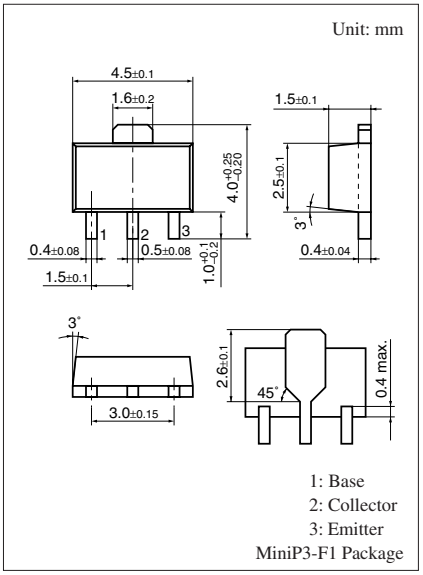
2SB1589

Silicon PNP epitaxial planar type

For low-frequency output amplification



Marking Symbol: 1U

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Large collector power dissipation P_C
- Mini Power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−10	V
Collector-emitter voltage (Base open)	V_{CEO}	−10	V
Emitter-base voltage (Collector open)	V_{EBO}	−7	V
Collector current	I_C	−1.5	A
Peak collector current	I_{CP}	−2	A
Collector power dissipation *	P_C	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

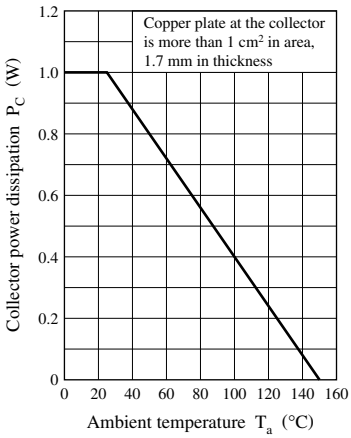
Note) ∗: Print circuit board: Copper foil area of 1 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

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

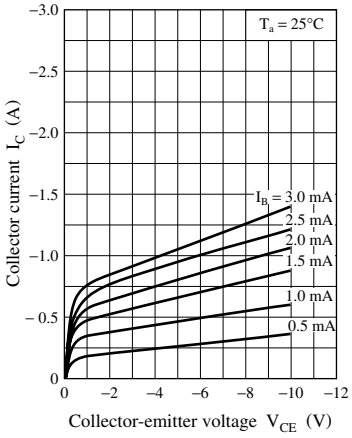
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emiter open)	V_{CBO}	$I_C = -10$ µA, $I_E = 0$	−10			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -1$ mA, $I_B = 0$	−10			V
Emiter-base voltage (Collector open)	V_{EBO}	$I_E = -10$ µA, $I_C = 0$	−7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -7$ V, $I_E = 0$			−1	µA
Forward current transfer ratio *1	h_{FE}	$V_{CE} = -1$ V, $I_C = -400$ mA	200		700	—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -1$ A, $I_B = -25$ mA		− 0.24	− 0.35	V
Transition frequency	f_T	$V_{CB} = -6$ V, $I_E = 50$ mA, f = 200 MHz		190		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		65		pF
Forward voltage *2	V_F	$I_F = -500$ mA			−1.3	V

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. ∗1: Pulse measurement
∗2: Applicable to the built-in diode

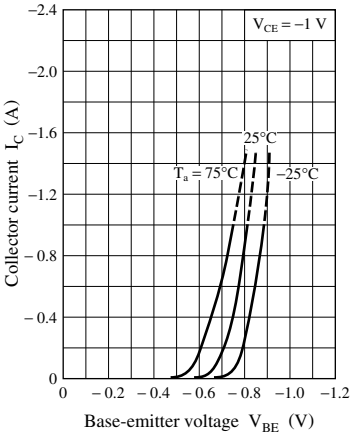
P_C — T_a



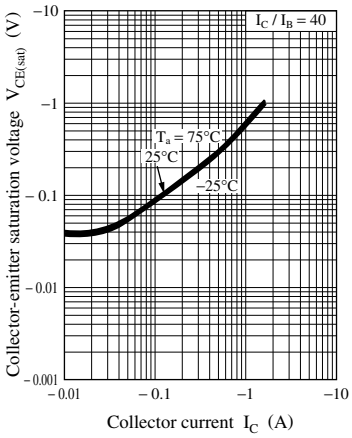
I_C — V_{CE}



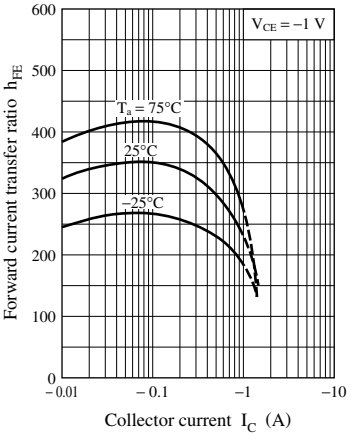
I_C — V_{BE}



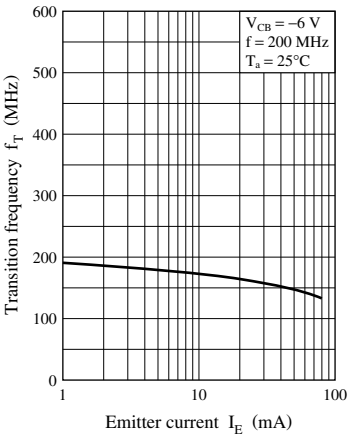
$V_{CE(sat)}$ — I_C



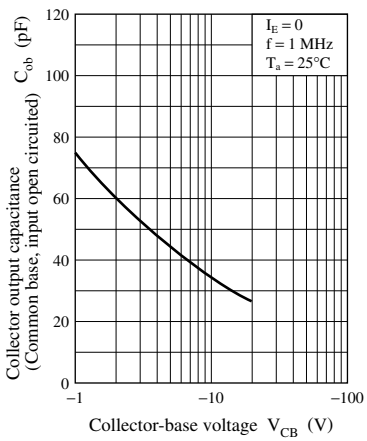
h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}



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