2SD1280G

Silicon NPN epitaxial planar type

For low-voltage type medium output power amplification

■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Satisfactory operation performances at high efficiency with the low-voltage power supply.
- Mini power type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

■ Package

- Code
  MiniP3-F2
- Pin Name
  1: Base
  2: Collector
  3: Emitter

■ Marking Symbol: R

■ 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}	5	V
Collector current	I_C	1	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) ∗: Printed circuit board: Copper foil area of 1 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

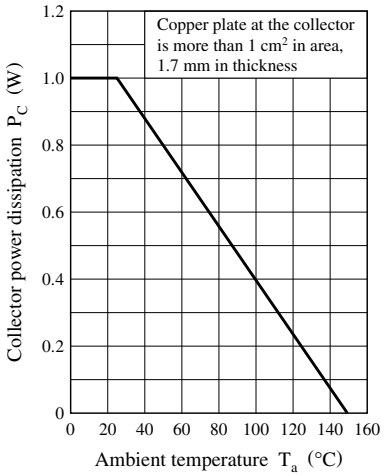
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
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	5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 10 V, I_E = 0			1	µA
Forward current transfer ratio	h_{FE1} *	V_{CE} = 2 V, I_C = 0.5 A	90		280	—
	h_{FE2}	V_{CE} = 2 V, I_C = 1.5 A	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 1 A, I_B = 50 mA			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C = 500 mA, I_B = 50 mA			1.2	V
Transition frequency	f_T	V_{CB} = 6 V, I_E = −50 mA, f = 200 MHz		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 6 V, I_E = 0, f = 1 MHz		18		pF

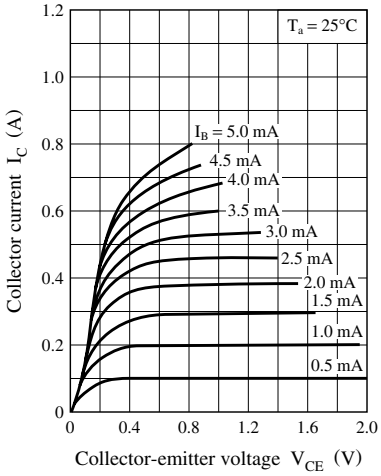
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. ∗: Rank classification

Rank	Q	R	S
h_{FE1}	90 to 155	130 to 210	180 to 280

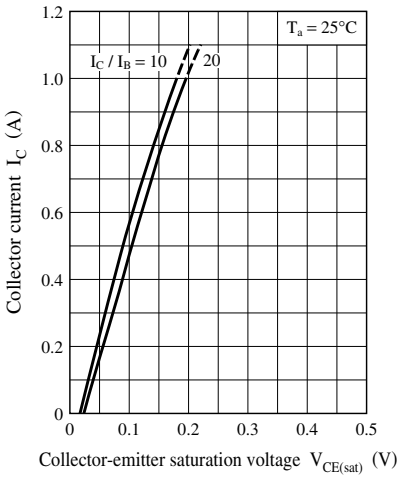
P_C — T_a



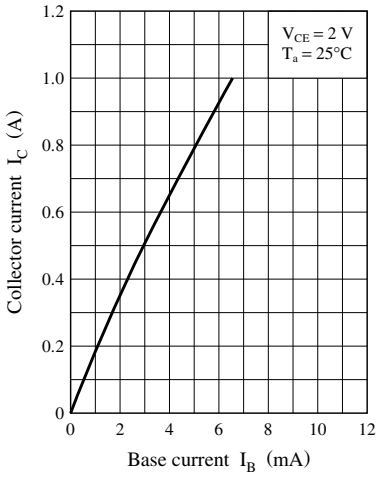
I_C — V_{CE}



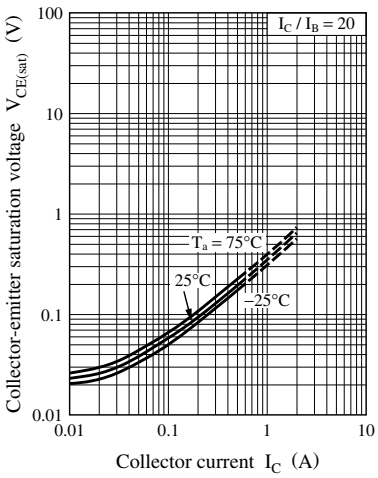
I_C — $V_{CE(sat)}$



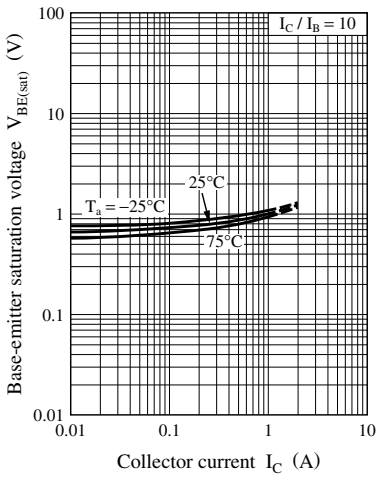
I_C — I_B



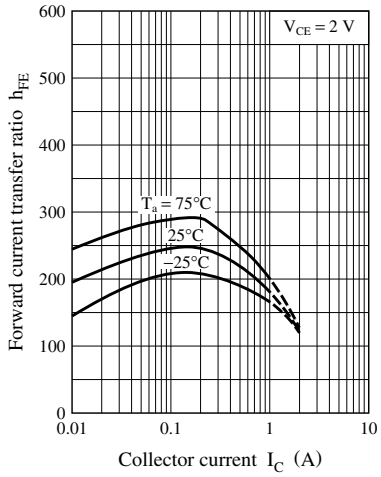
$V_{CE(sat)}$ — I_C



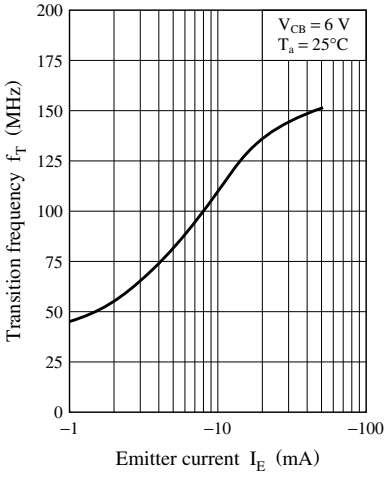
$V_{BE(sat)}$ — I_C



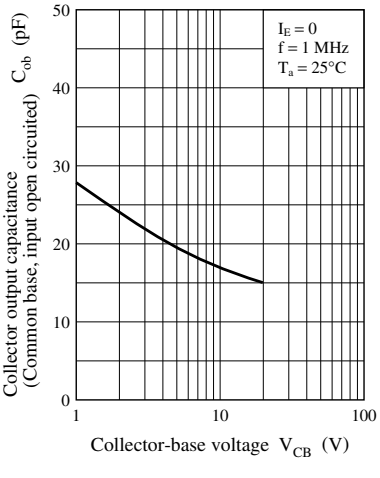
h_{FE} — I_C



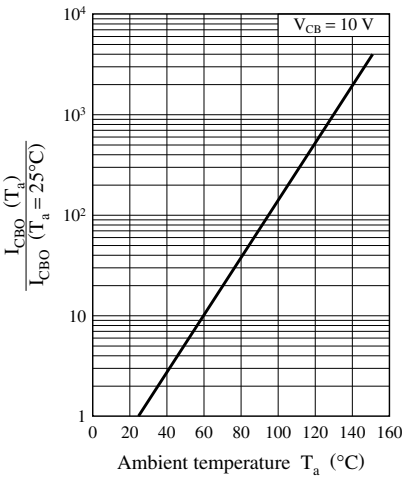
f_T — I_E



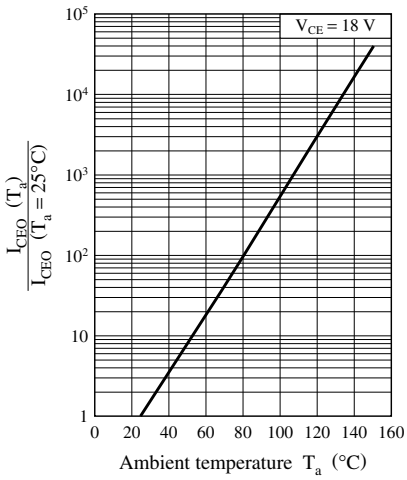
C_{ob} — V_{CB}



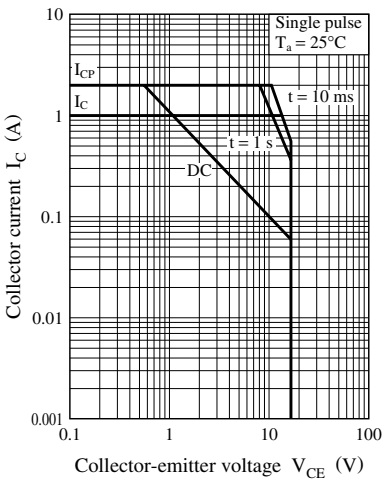
I_{CBO} — T_a



I_{CEO} — T_a

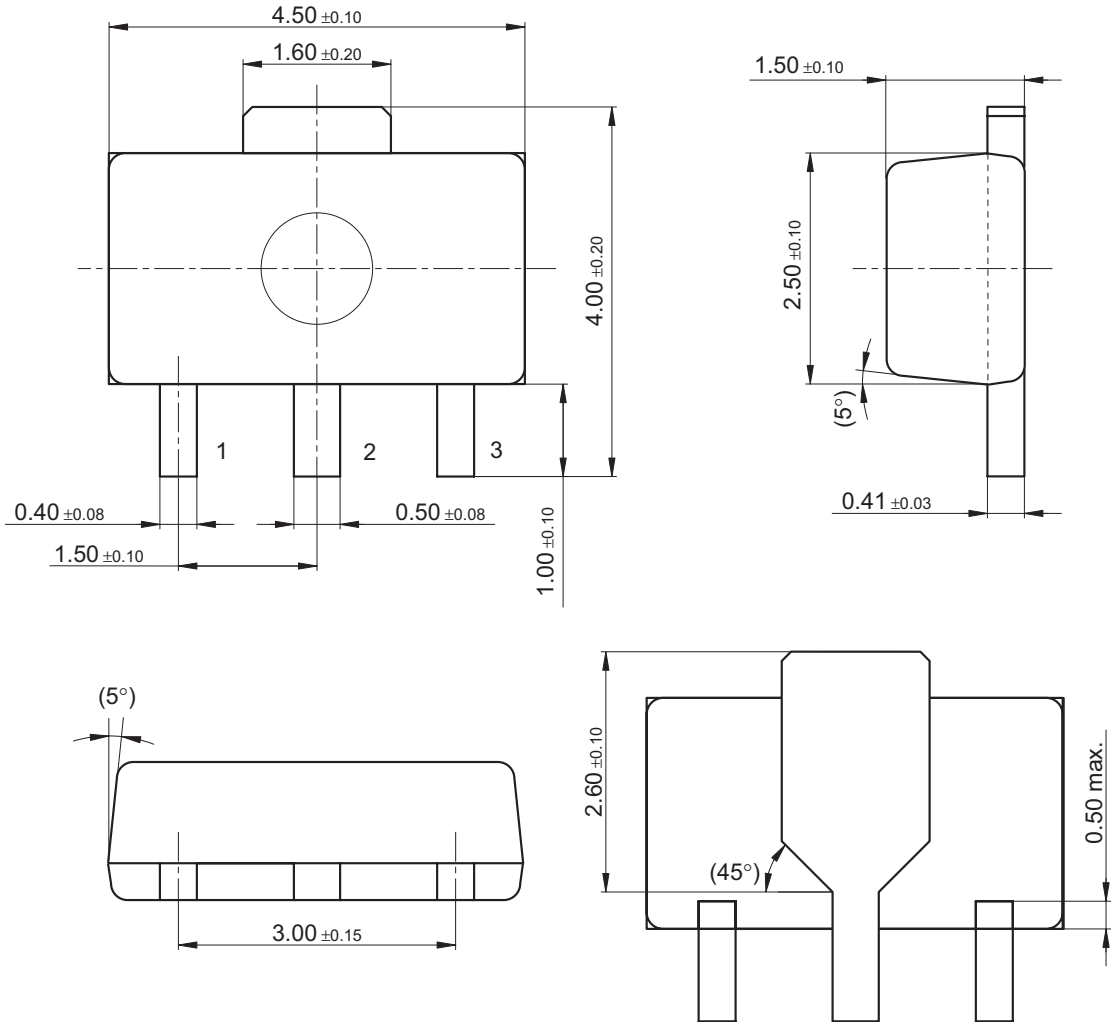


Safe operation area



MiniP3-F2

Unit: mm



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