DSC7004

Silicon NPN epitaxial planar type

For low frequency amplification
Complementary to DSA7004

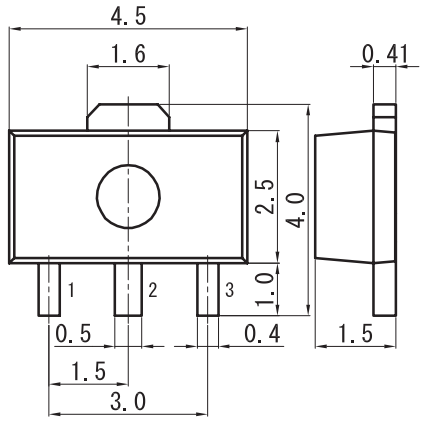
■ Features

- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

■ Marking Symbol: 5B

■ Packaging

DSC7004×0L Embossed type (Thermo-compression sealing): 1 000 pcs / reel (standard)



1: Base
2: Collector
3: Emitter

Panasonic	MiniP3-F2-B
JEITA	SC-62
Code	TO-243

■ Absolute Maximum Ratings $T_a = 25°C$

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	2	A
Peak collector current	I_{CP}	3	A
Collector power dissipation	P_C	1	W
Junction temperature	T_j	150	°C
Operating ambient temperature	T_{opr}	–40 to +85	°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
Absolute maximum rating without heat sink for P_C is 0.5 W

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

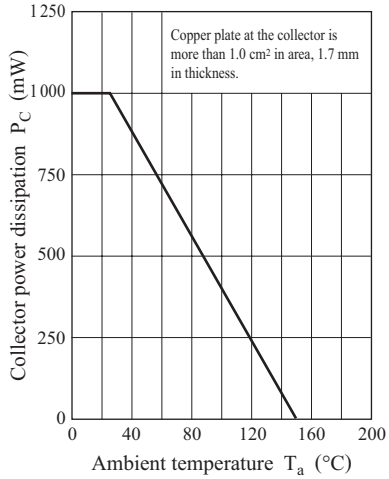
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = 10 μA, I_E = 0	60			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 1 mA, I_B = 0	50			V
Emitter-base voltage (Collector open)	V_{EBO}	I_E = 10 μA, I_C = 0	5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	μA
Forward current transfer ratio *1	h_{FE1} *2	V_{CE} = 2 V, I_C = 200 mA	120		340	—
	h_{FE2}	V_{CE} = 2 V, I_C = 1 A	80			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	I_C = 1 A, I_B = 50 mA		0.15	0.3	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	I_C = 1 A, I_B = 50 mA		0.9	1.2	V
Transition frequency	f_T	V_{CE} = 10 V, I_C = 50 mA		120		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		22	35	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

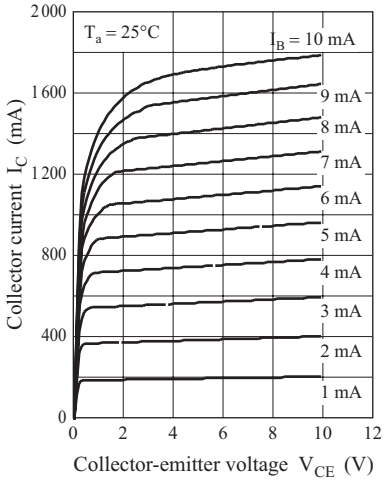
Code	R	S	0
Rank	R	S	No-rank
h_{FE1}	120 to 240	170 to 340	120 to 340
Marking Symbol	5BR	5BS	5B

Product of no-rank is not classified and have no marking symbol for rank.

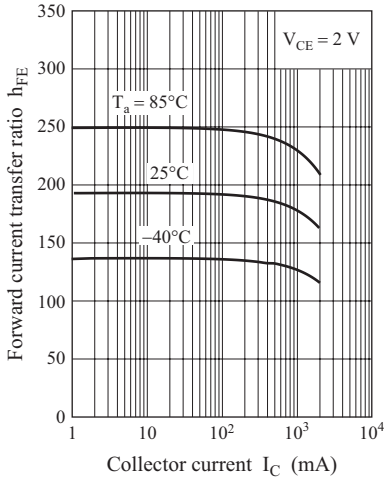
P_C — T_a



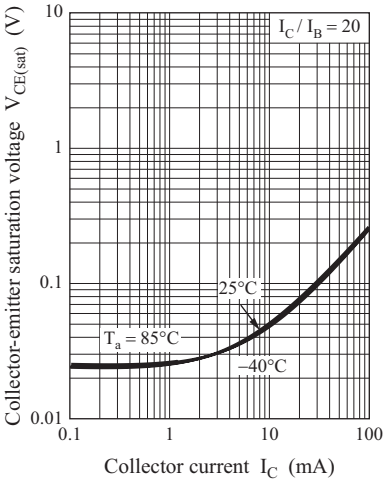
I_C — V_{CE}



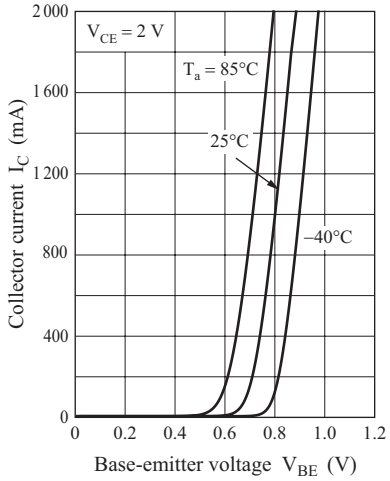
h_{FE} — I_C



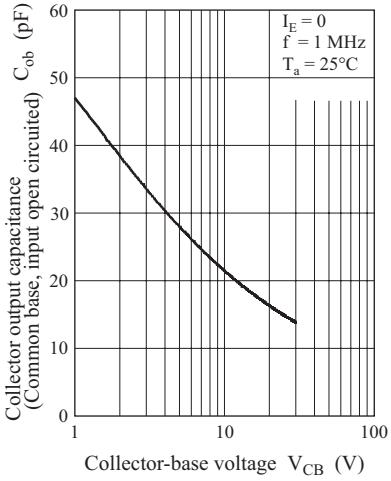
$V_{CE(sat)}$ — I_C



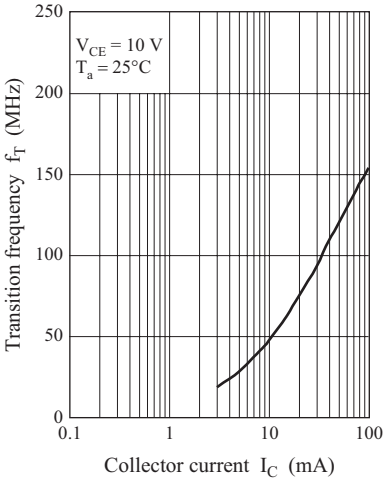
I_C — V_{BE}



C_{ob} — V_{CB}

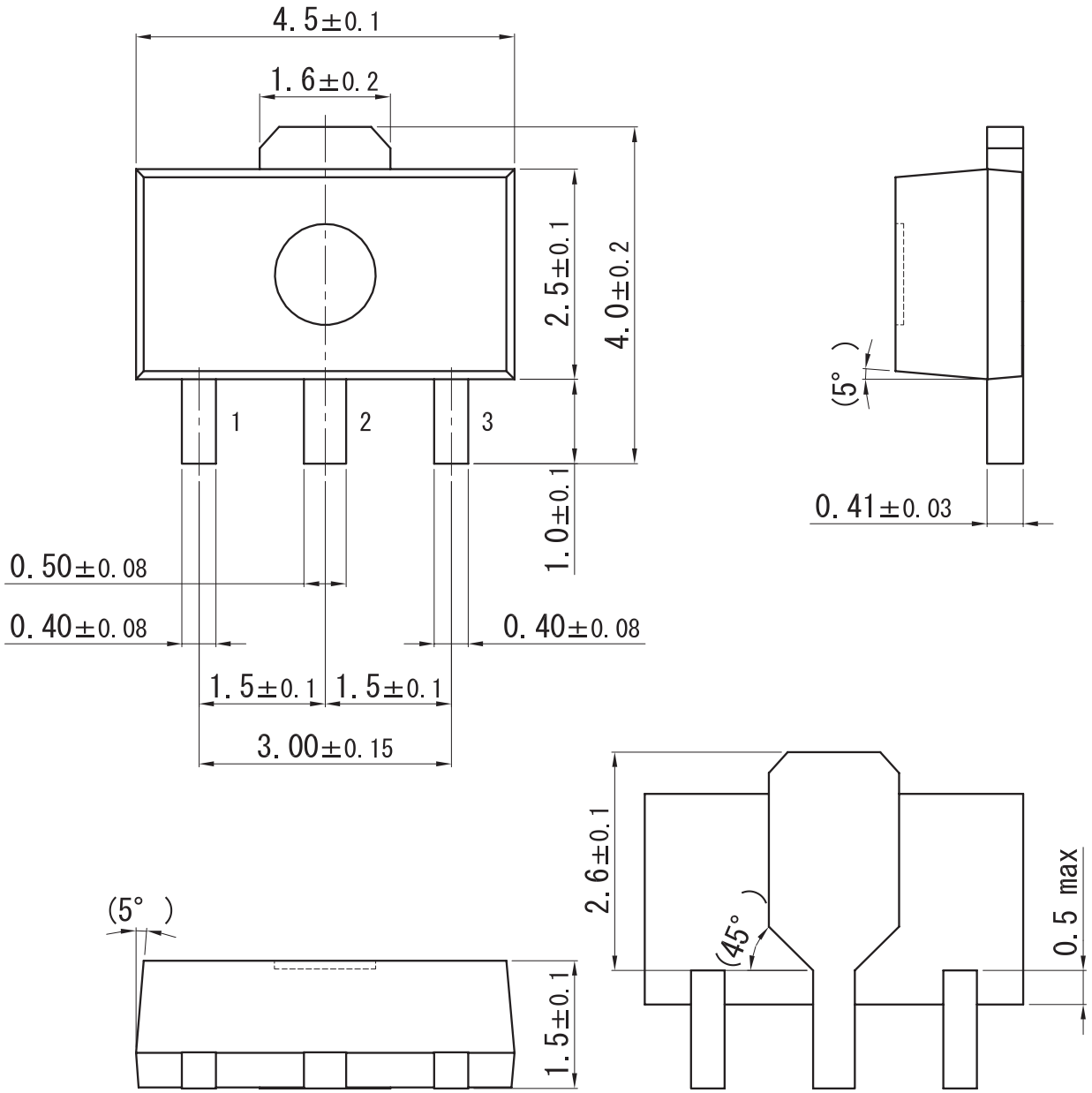


f_T — I_C

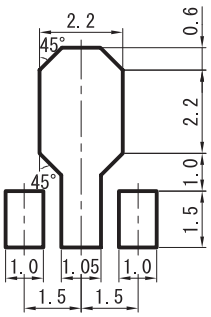


MiniP3-F2-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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