

DSC7101

Silicon NPN epitaxial planar type

For low frequency amplification

Complementary to DSA7101

■ 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: 5C

■ Packaging

DSC7101×0L Embossed type (Thermo-compression sealing): 1 000 pcs / reel (standard)

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	80	V
Collector-emitter voltage (Base open)	V_{CEO}	80	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	0.5	A
Peak collector current	I_{CP}	1	A
Collector power dissipation	P_C	1	W
Junction temperature	T_j	150	$^\circ\text{C}$
Operating ambient temperature	T_{opr}	-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) Printed circuit board: Copper foil area of 1 cm² 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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu\text{A}$, $I_E = 0$	80			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 100\ \mu\text{A}$, $I_B = 0$	80			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10\ \mu\text{A}$, $I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 20\ \text{V}$, $I_E = 0$			0.1	μA
Forward current transfer ratio *1	h_{FE1} *2	$V_{CE} = 10\ \text{V}$, $I_C = 150\ \text{mA}$	130		330	—
	h_{FE2}	$V_{CE} = 5\ \text{V}$, $I_C = 500\ \text{mA}$	50			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 300\ \text{mA}$, $I_B = 30\ \text{mA}$		0.15	0.4	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 300\ \text{mA}$, $I_B = 30\ \text{mA}$		0.85	1.2	V
Transition frequency	f_T	$V_{CE} = 10\ \text{V}$, $I_C = 50\ \text{mA}$		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 10\ \text{V}$, $I_E = 0$, $f = 1\ \text{MHz}$		7	20	pF

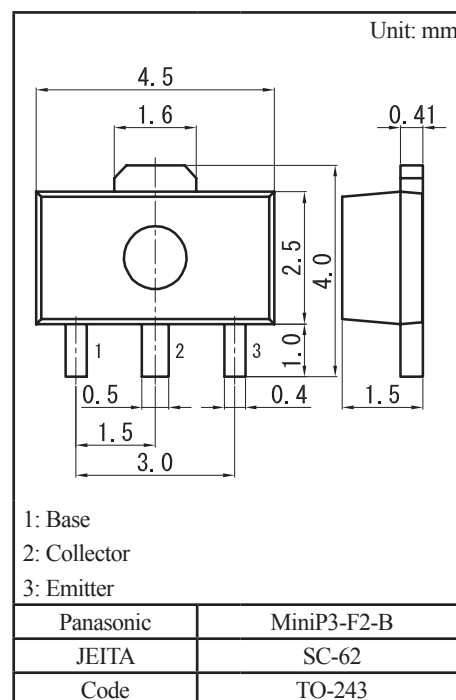
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

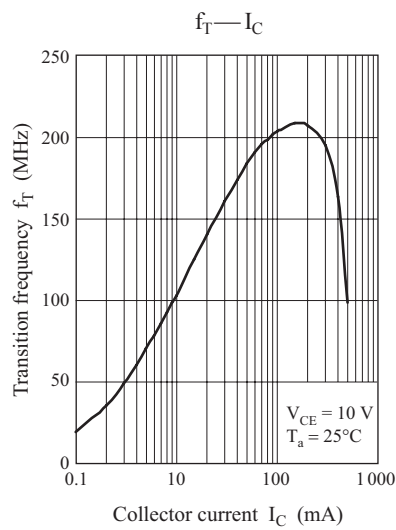
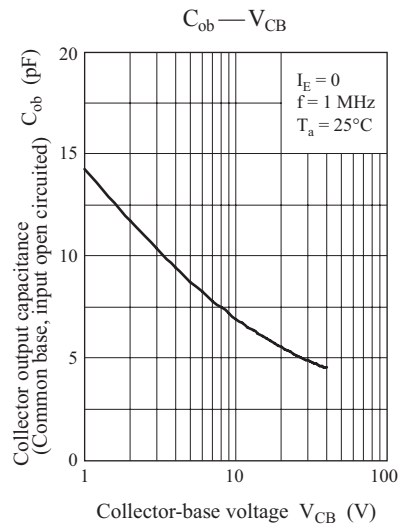
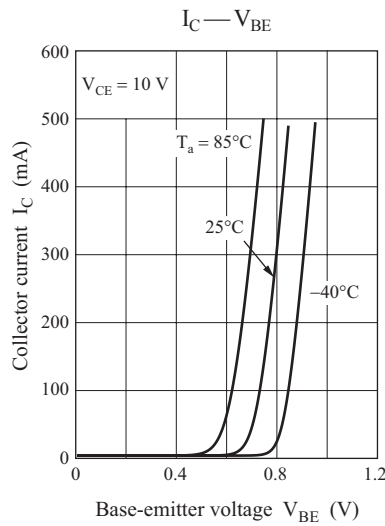
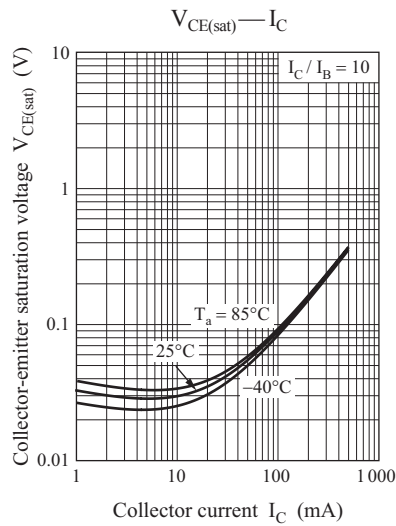
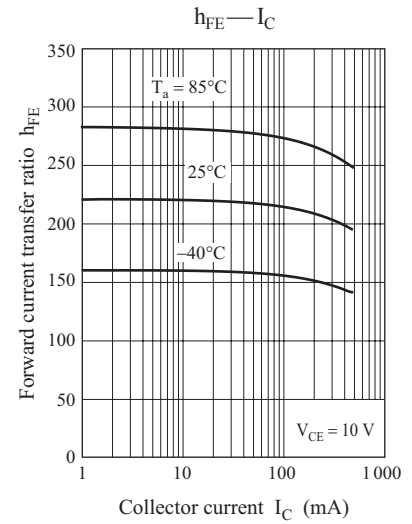
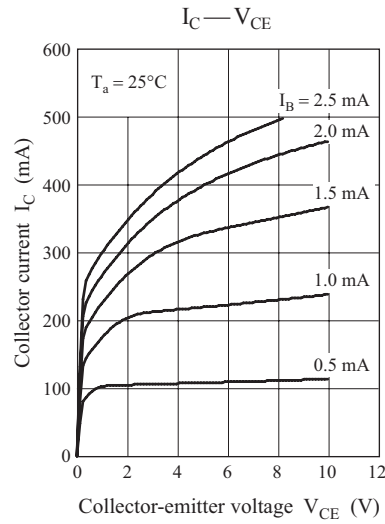
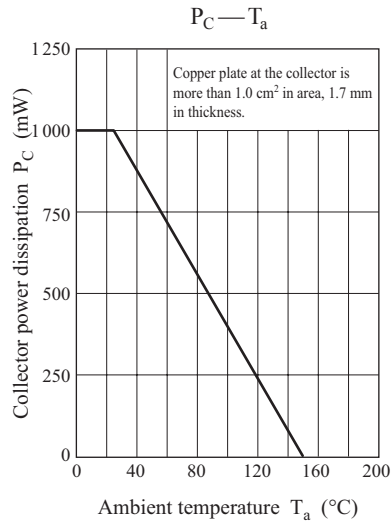
2. *1: Pulse measurement

*2: Rank classification

Code	R	S	0
Rank	R	S	No-rank
h_{FE1}	130 to 220	185 to 330	130 to 330
Marking Symbol	5CR	5CS	5C

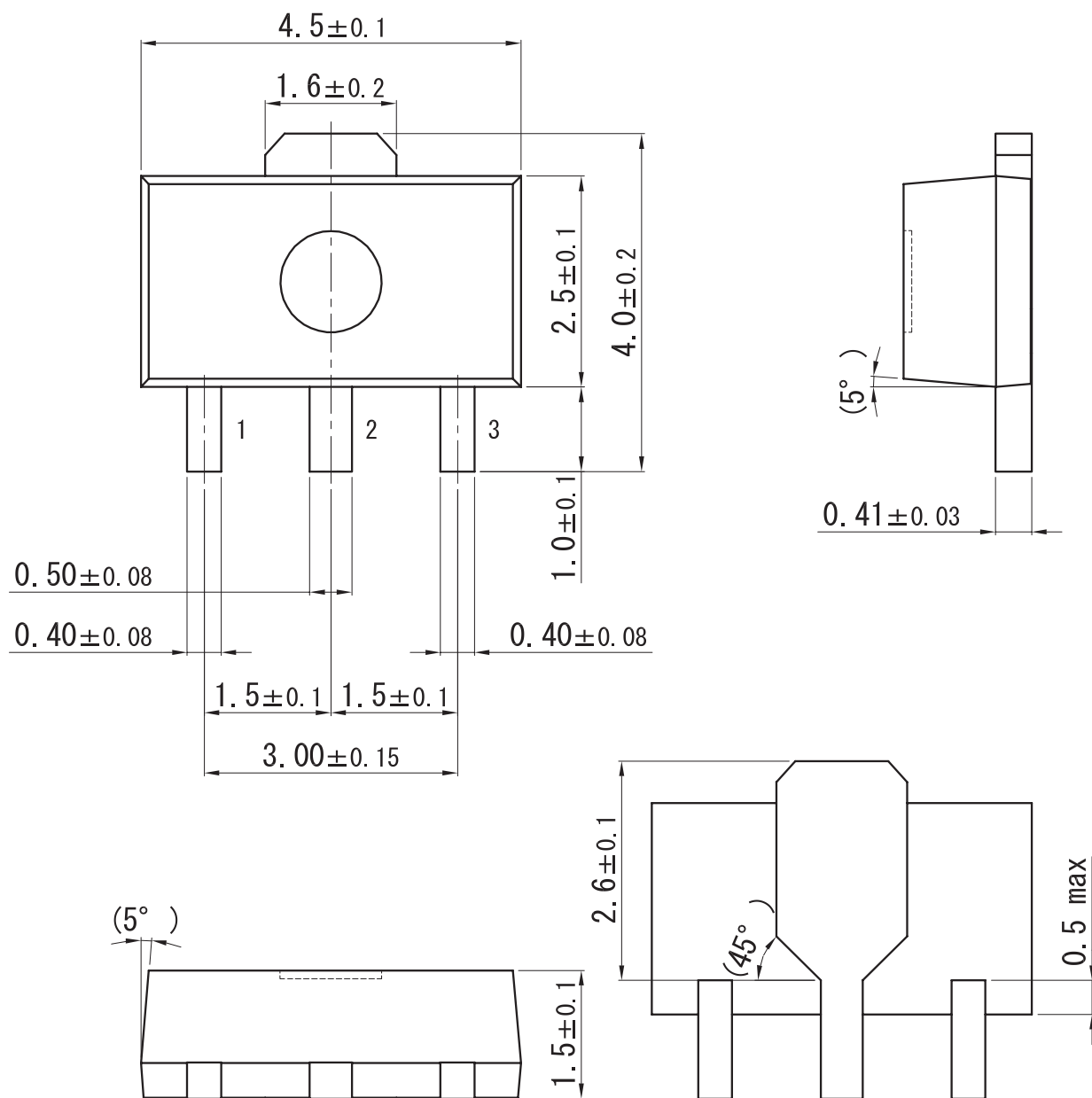
Product of no-rank is not classified and have no marking symbol for rank.



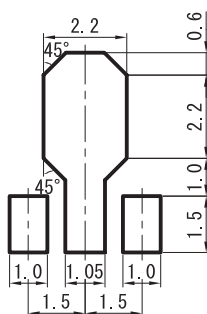


MiniP3-F2-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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