



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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DSC7Q01

Silicon NPN epitaxial planar type darlington

For low frequency amplification
Darlington connection

■ Features

- High forward current transfer ratio h_{FE} with excellent linearity
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Halogen-free / RoHS compliant
(EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

■ Marking Symbol: 5K

■ Packaging

DSC7Q01×0L 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}	100	V
Collector-emitter voltage (Base open)	V_{CEO}	80	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	1	A
Peak collector current	I_{CP}	1.5	A
Collector power dissipation *1	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) *1: 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}	$I_C = 100 \mu\text{A}, I_E = 0$	100			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1 \text{ mA}, I_B = 0$	80			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 100 \mu\text{A}, I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 25 \text{ V}, I_E = 0$			0.1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 4 \text{ V}, I_C = 0$			0.1	μA
Forward current transfer ratio *1, 2	h_{FE}	$V_{CE} = 10 \text{ V}, I_C = 1 \text{ A}$	4000		40000	—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}$			1.8	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 1 \text{ A}, I_B = 1 \text{ mA}$			2.2	V

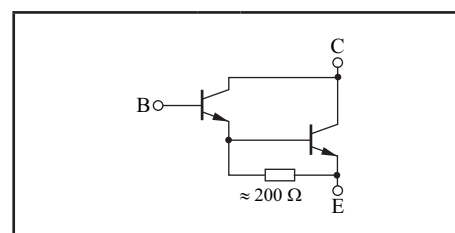
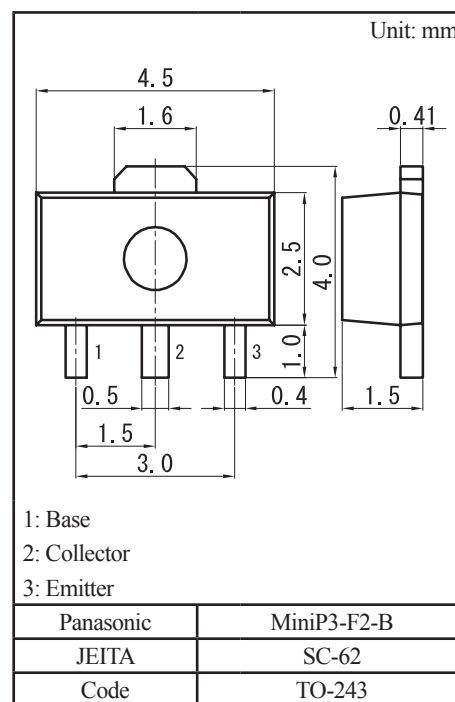
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

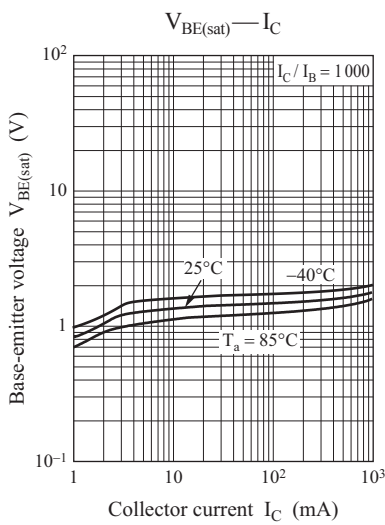
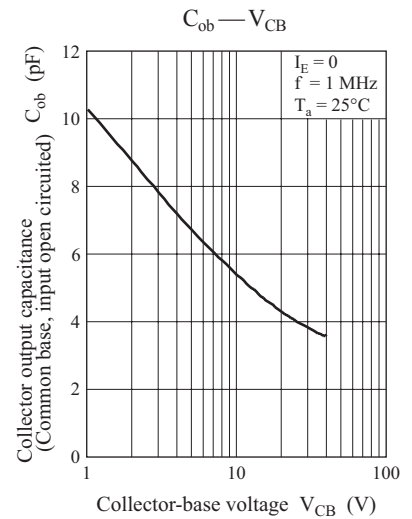
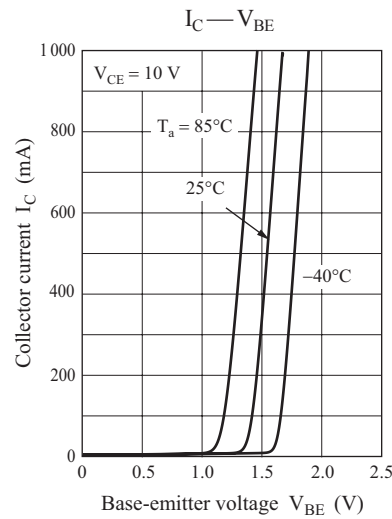
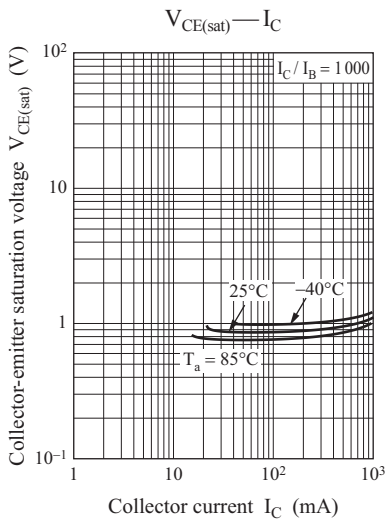
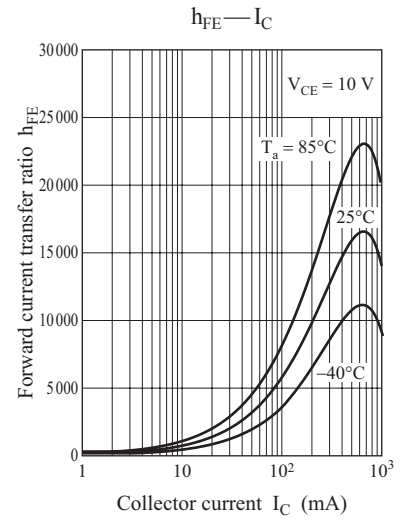
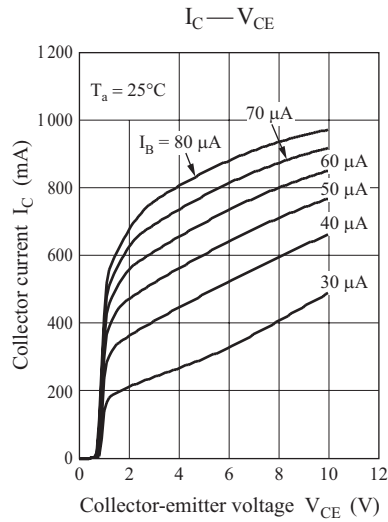
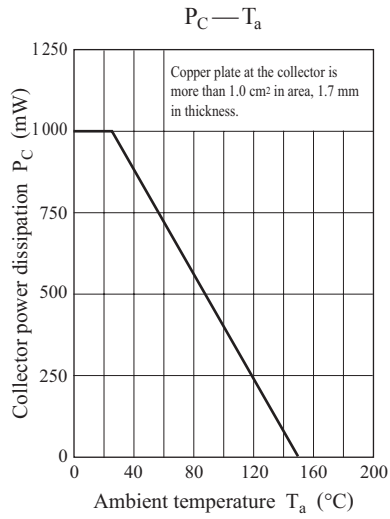
2. *1: Pulse measurement

*2: Rank classification

Code	Q	R	S	0
Rank	Q	R	S	No-rank
h_{FE}	4000 to 10000	8000 to 20000	16000 to 40000	4000 to 40000
Marking Symbol	5KQ	5KR	5KS	5K

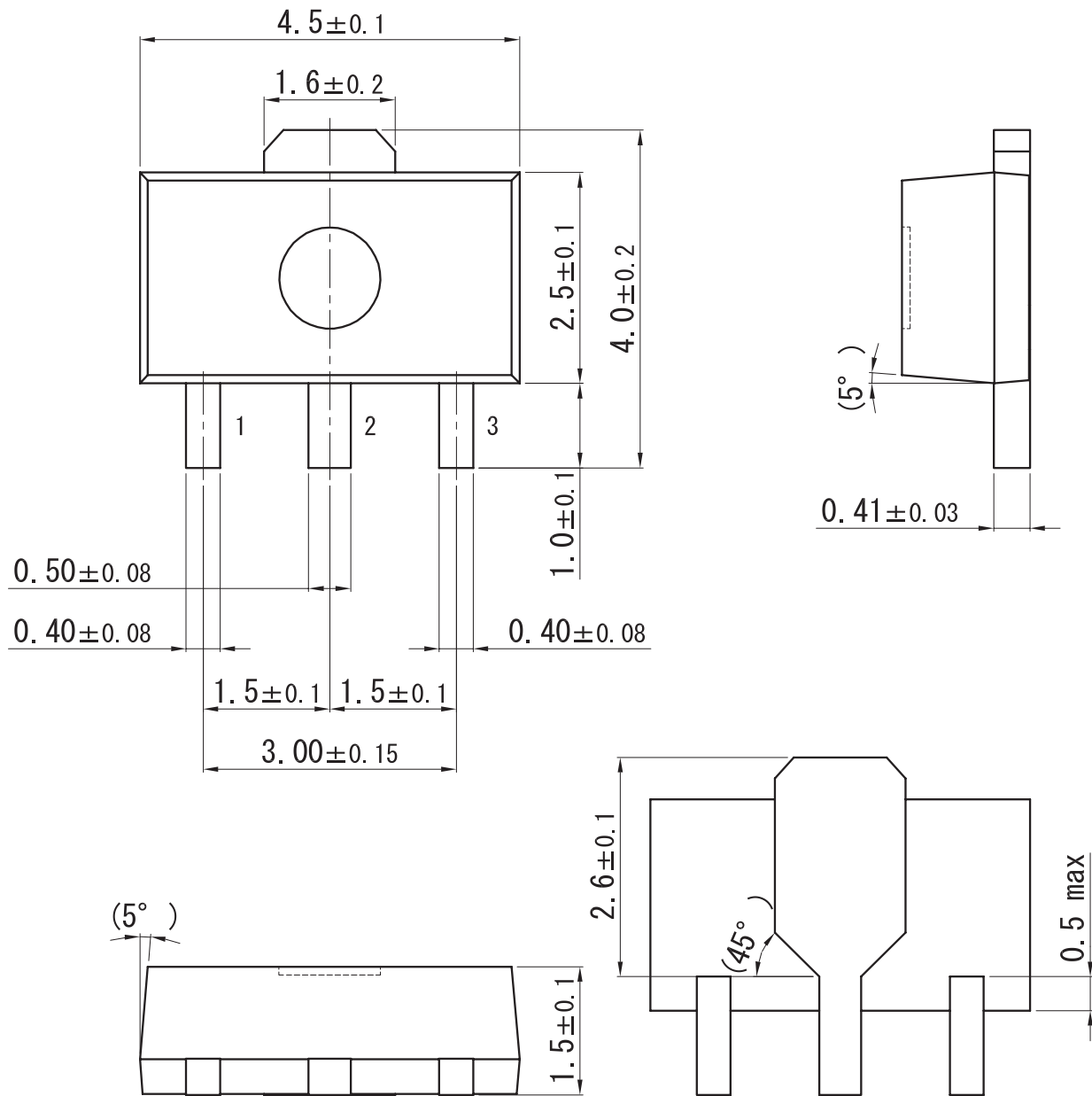
Product of no-rank is not classified and have no marking symbol for rank.



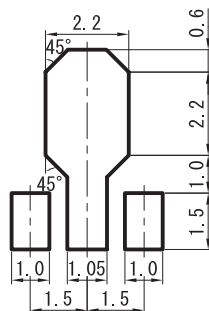


MiniP3-F2-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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