DSA2002

Silicon PNP epitaxial planar type

For general amplification
Complementary to DSC2002

■ Features

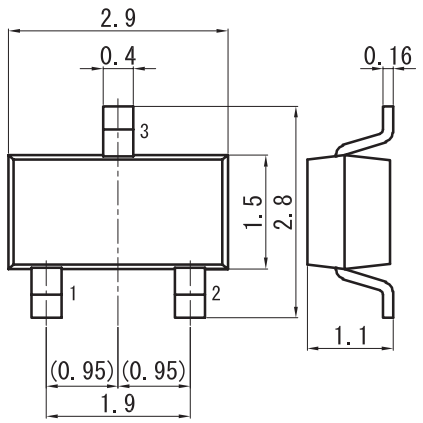
- High forward current transfer ratio h_{FE} with excellent linearity
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Halogen-free / RoHS compliant
  (EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)

■ Marking Symbol: A2

■ Packaging

DSA2002×0L Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

Unit: mm



1: Base
2: Emitter
3: Collector

Panasonic	Mini3-G3-B-B
JEITA	SC-59A
Code	TO-236AA/SOT-23

■ 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	–500	mA
Peak collector current	I_{CP}	–1	A
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Operating ambient temperature	T_{opr}	–40 to +85	°C
Storage temperature	T_{stg}	–55 to +150	°C

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

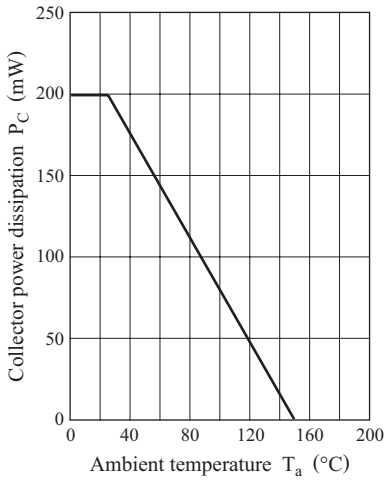
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -10$ μA, $I_E = 0$	–60			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -2$ mA, $I_B = 0$	–50			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = -10$ μA, $I_C = 0$	–5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -20$ V, $I_E = 0$			– 0.1	μA
Forward current transfer ratio *1	h_{FE1} *2	$V_{CE} = -10$ V, $I_C = -150$ mA	120		340	—
	h_{FE2}	$V_{CE} = -10$ V, $I_C = -500$ mA	40			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -300$ mA, $I_B = -30$ mA		– 0.2	– 0.6	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = -300$ mA, $I_B = -30$ mA		– 0.9	– 1.5	V
Transition frequency	f_T	$V_{CE} = -10$ V, $I_C = -50$ mA		130		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		7.3	15	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

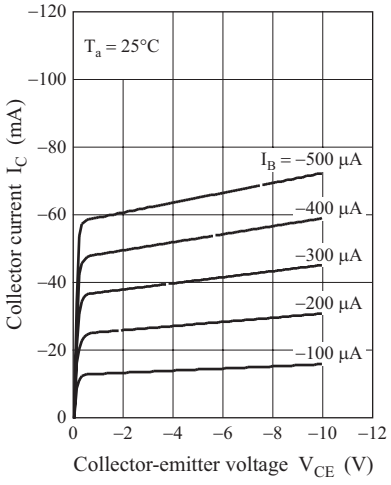
Code	R	S	0
Rank	R	S	No-rank
h_{FE1}	120 to 240	170 to 340	120 to 340
Marking Symbol	A2R	A2S	A2

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

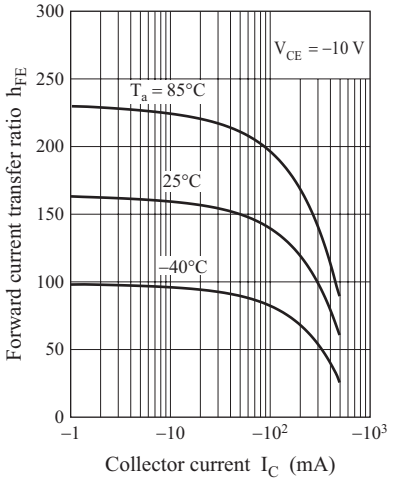
P_C — T_a



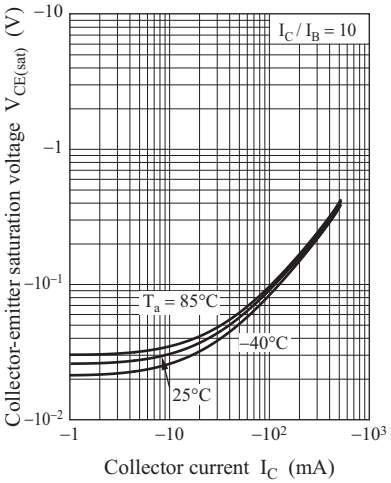
I_C — V_{CE}



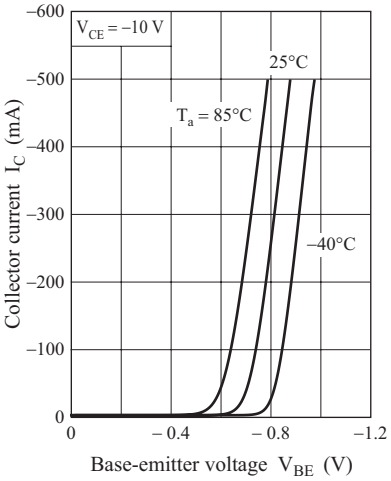
h_{FE} — I_C



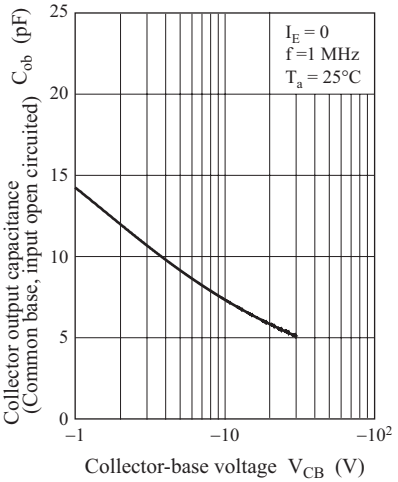
$V_{CE(sat)}$ — I_C



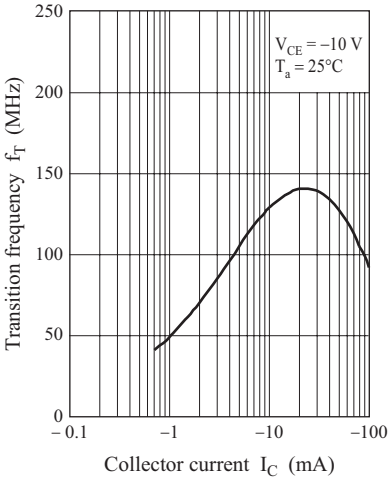
I_C — V_{BE}



C_{ob} — V_{CB}

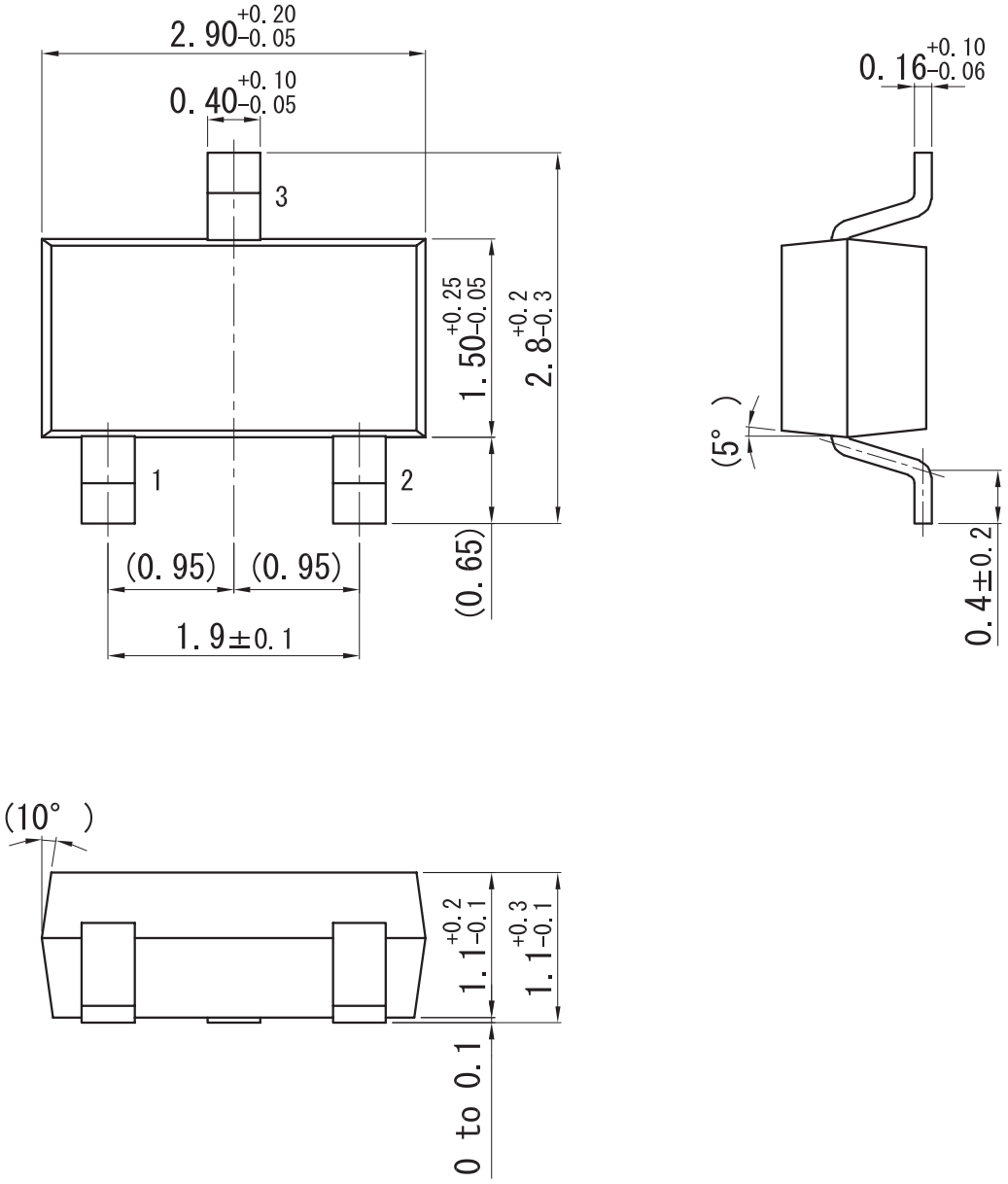


f_T — I_C

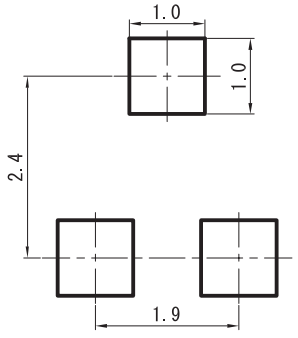


Mini3-G3-B-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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