DMG21401

Silicon NPN epitaxial planar type (Tr1)
Silicon PNP epitaxial planar type (Tr2)

For low frequency amplification

■ 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: T6

■ Basic Part Number

DSC2001 + DRA0143G (Individual)

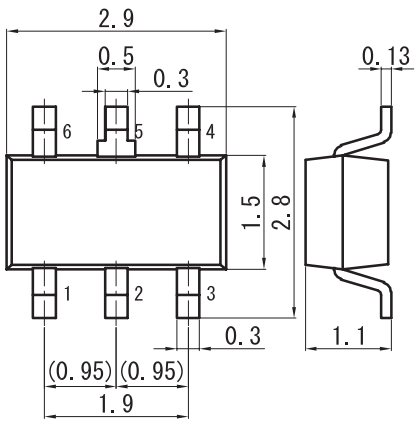
■ Packaging

DMG214010R Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25°C$

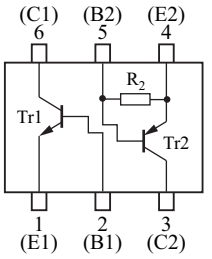
Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	60	V
	Collector-emitter voltage (Base open)	V_{CEO}	50	V
	Emitter-base voltage (Collector open)	V_{EBO}	7	V
	Collector current	I_C	100	mA
	Peak collector current	I_{CP}	200	mA
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	–50	V
	Collector-emitter voltage (Base open)	V_{CEO}	–50	V
	Collector current	I_C	–100	mA
Overall	Total power dissipation	P_T	300	mW
	Junction temperature	T_j	150	°C
	Operating ambient temperature	T_{opr}	–40 to +85	°C
	Storage temperature	T_{stg}	–55 to +150	°C

Unit: mm



1: Emitter (Tr1) 4: Emitter (Tr2)
2: Base (Tr1) 5: Base (Tr2)
3: Collector (Tr2) 6: Collector (Tr1)

Panasonic	Mini6-G4-B
JEITA	SC-74
Code	SOT-457



Resistance value	Tr2	R_2	4.7	kΩ

■ Electrical Characteristics T_a = 25°C±3°C

• Tr1

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	7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 10 V, I_B = 0			100	µA
Forward current transfer ratio	h_{FE}	V_{CB} = 10 V, I_C = 2 mA	210		460	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 100 mA, I_B = 10 mA		0.13	0.30	V
Transition frequency	f_T	V_{CB} = 10 V, I_E = 2 mA		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz		1.5		pF

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

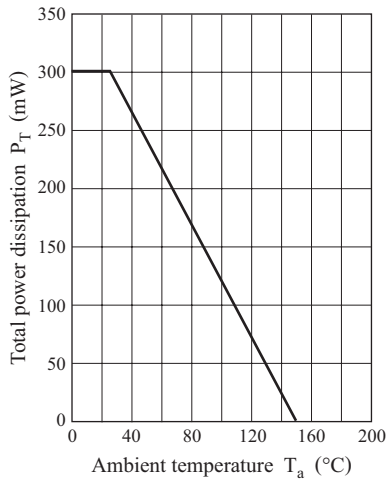
• Tr2

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	I_C = –10 µA, I_E = 0	–50			V
Collector-emitter voltage (Base open)	V_{CEO}	I_C = –2 mA, I_B = 0	–50			V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = –50 V, I_E = 0			– 0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = –50 V, I_B = 0			– 0.5	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = –6 V, I_C = 0			–2.0	mA
Forward current transfer ratio	h_{FE}	V_{CE} = –10 V, I_C = –5 mA	20			—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = –10 mA, I_B = – 0.5 mA			– 0.25	V
Input voltage (ON)	$V_{I(on)}$	V_{CE} = – 0.2 V, I_C = –5 mA	– 0.9			V
Input voltage (OFF)	$V_{I(off)}$	V_{CE} = –5 V, I_C = –100 µA			– 0.4	V
Between emitter base resistance	R_2		–30%	4.7	+30%	kΩ

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

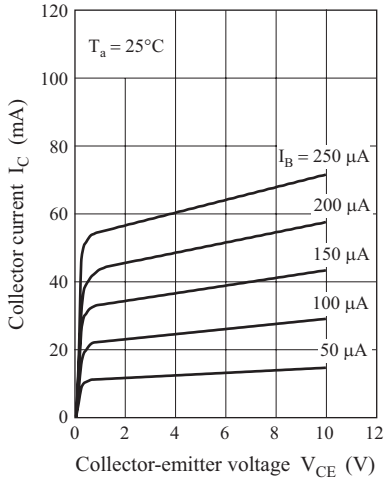
Common characteristics chart

P_T — T_a

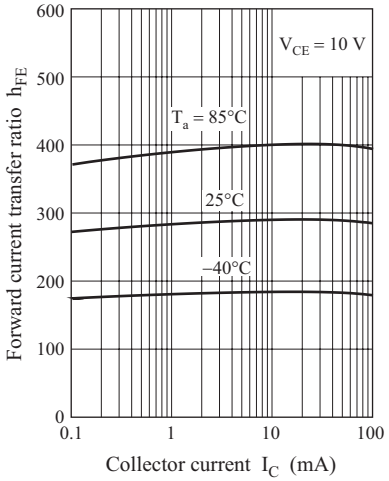


Characteristics charts of Tr1

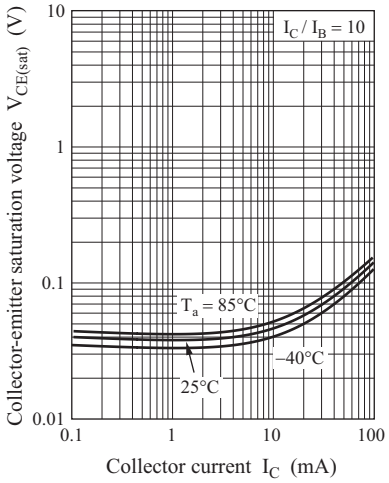
I_C — V_{CE}



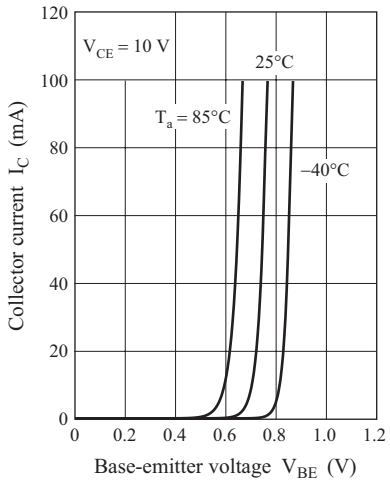
h_{FE} — I_C



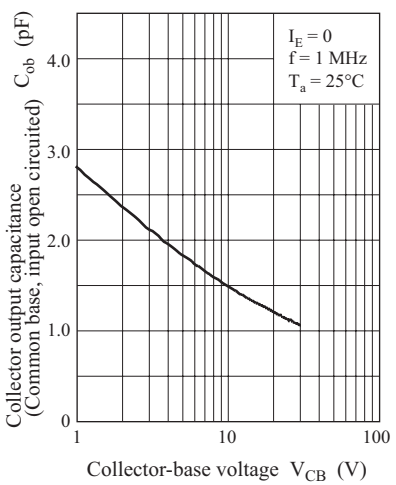
$V_{CE(sat)}$ — I_C



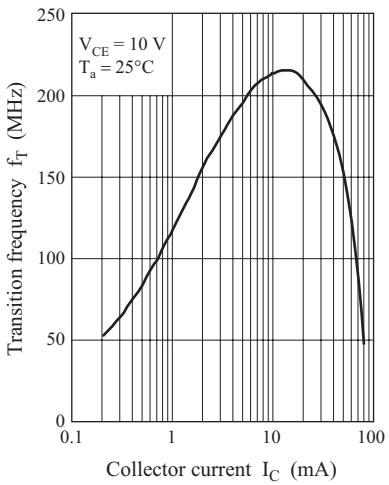
I_C — V_{BE}



C_{ob} — V_{CB}

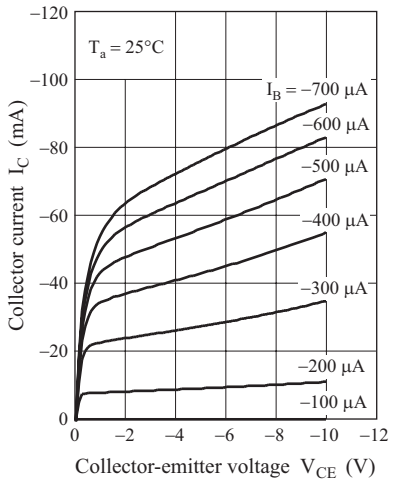


f_T — I_C

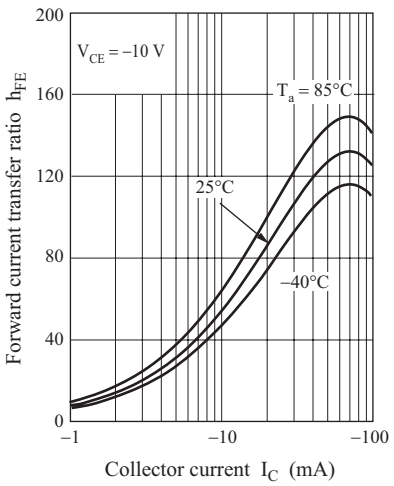


Characteristics charts of Tr2

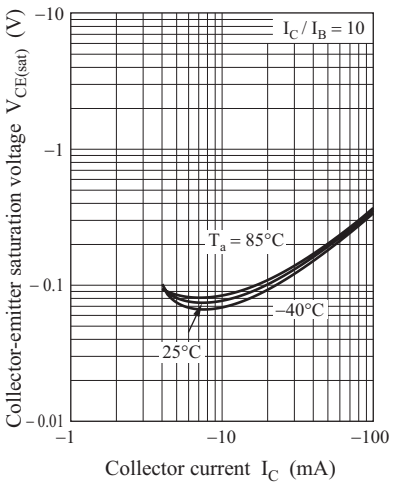
I_C — V_{CE}



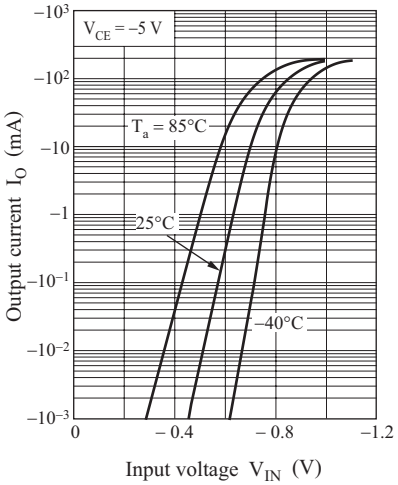
h_{FE} — I_C



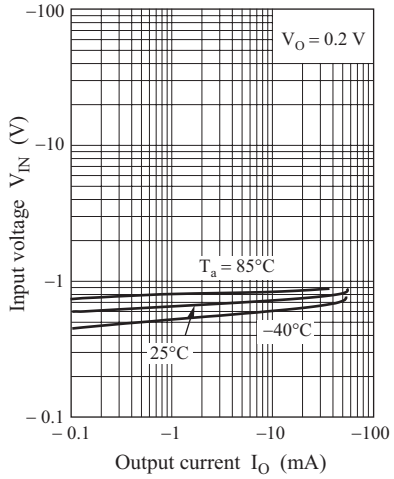
$V_{CE(sat)}$ — I_C



I_O — V_{IN}

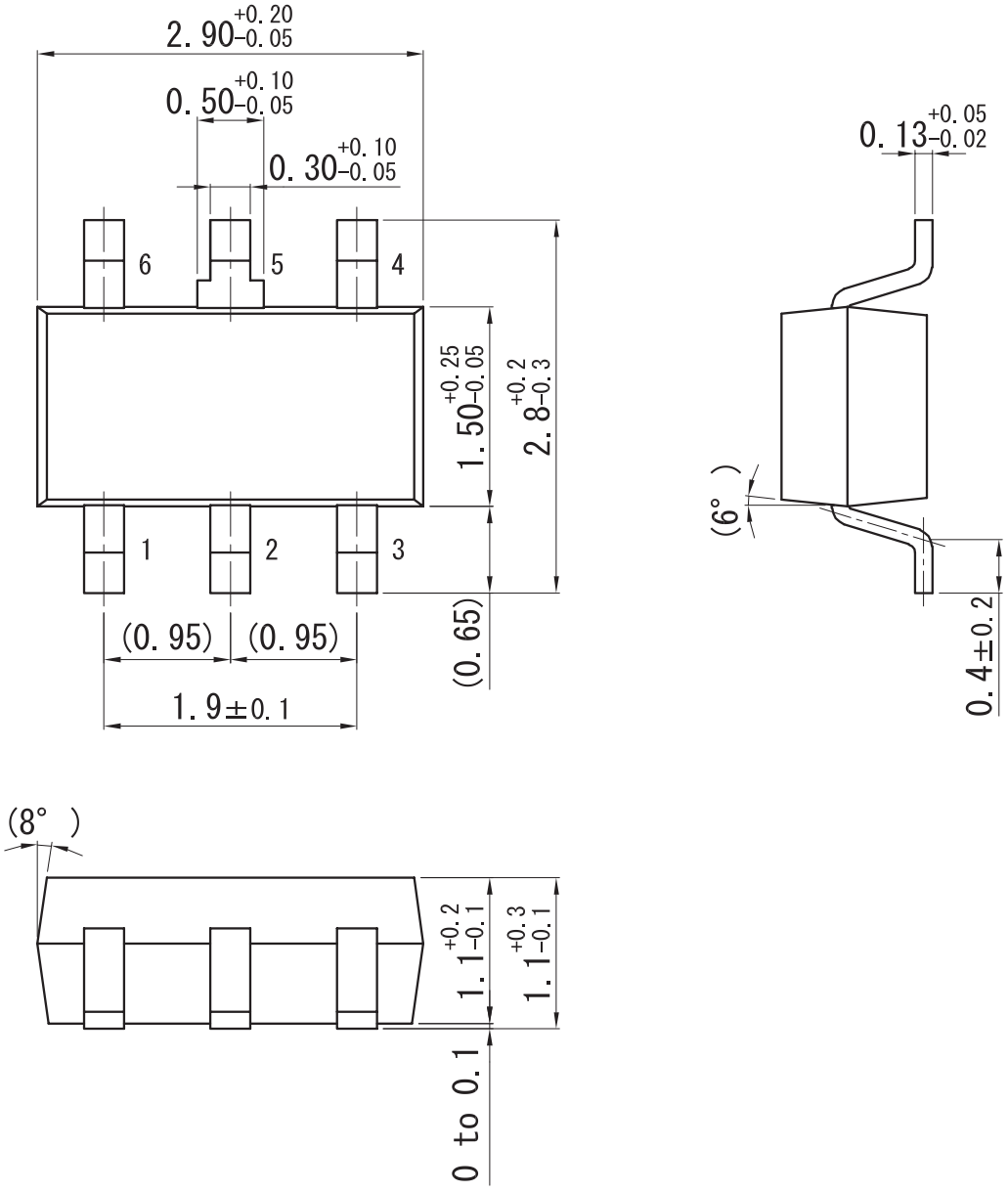


V_{IN} — I_O

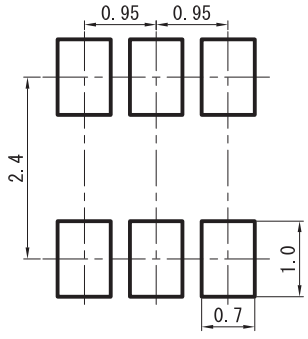


Mini6-G4-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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