DMG56302

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

For digital circuits
DMG26302 in SMini5 type package

■ 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: F6

■ Basic Part Number

DRC2124E + DRA2124E (Collector-base connection)

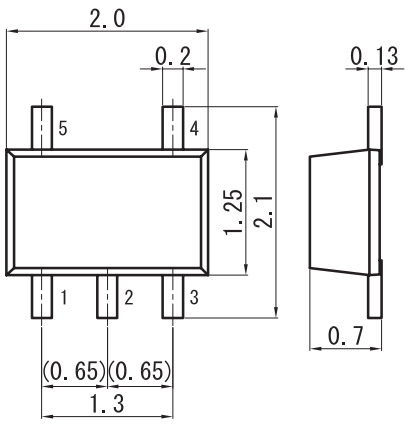
■ Packaging

DMG563020R Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25°C$

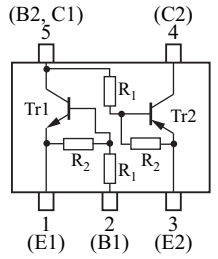
Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	50	V
	Collector-emitter voltage (Base open)	V_{CEO}	50	V
	Collector current	I_C	100	mA
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	–50	V
	Collector-emitter voltage (Base open)	V_{CEO}	–50	V
	Collector current	I_C	–100	mA
Overall	Total power dissipation	P_T	150	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: Collecter (Tr2)
2: Base (Tr1) 5: Base (Tr2)
3: Emitter (Tr2) Collecter (Tr1)

Panasonic	SMini5-F3-B
JEITA	SC-113CB
Code	SOT-353



Resistance value	Tr1	R_1	22	kΩ
		R_2	22	kΩ
	Tr2	R_1	22	kΩ
		R_2	22	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	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			0.2	mA
Forward current transfer ratio	h_{FE}	V_{CE} = 10 V, I_C = 5 mA	60			—
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	2.6			V
Input voltage (OFF)	$V_{I(off)}$	V_{CE} = 5 V, I_C = 100 µA			0.8	V
Input resistance	R_1		–30%	22	+30%	kΩ
Resistance ratio	R_1 / R_2		0.8	1.0	1.2	—

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

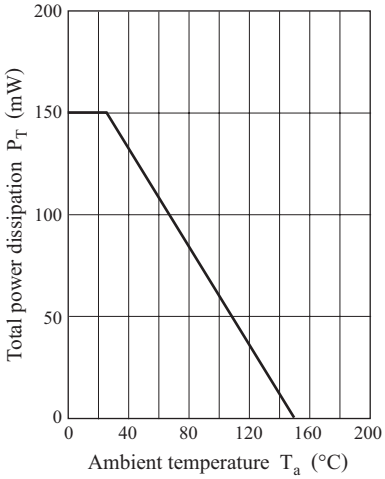
• Tr2

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			– 0.2	mA
Forward current transfer ratio	h_{FE}	V_{CE} = –10 V, I_C = –5 mA	60			—
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	–2.6			V
Input voltage (OFF)	$V_{I(off)}$	V_{CE} = –5 V, I_C = –100 µA			– 0.8	V
Input resistance	R_1		–30%	22	+30%	kΩ
Resistance ratio	R_1 / R_2		0.8	1.0	1.2	—

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

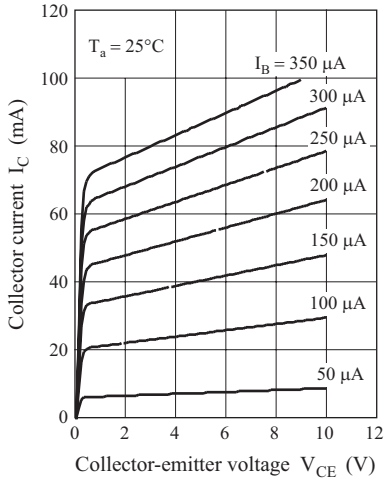
Common characteristics chart

P_T — T_a

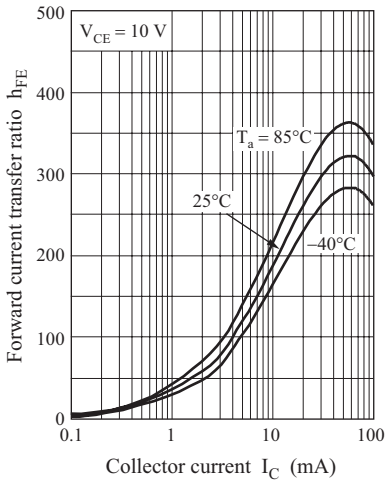


Characteristics charts of Tr1

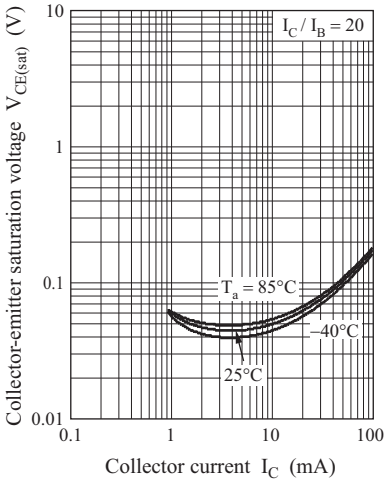
I_C — V_{CE}



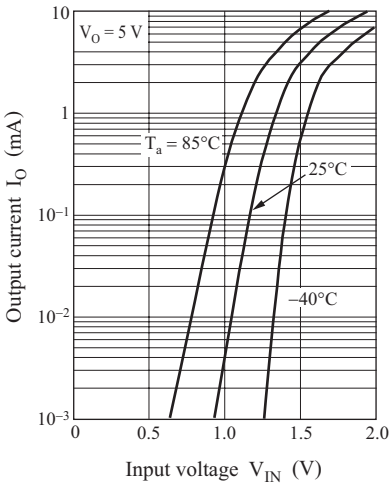
h_{FE} — I_C



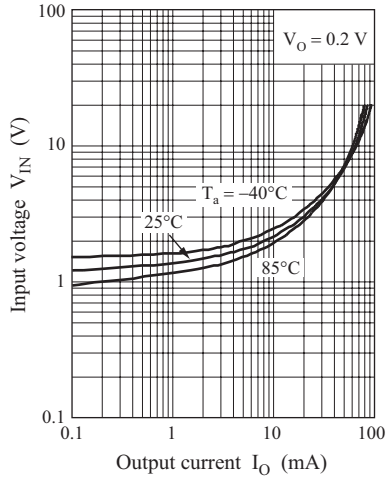
$V_{CE(sat)}$ — I_C



I_O — V_{IN}

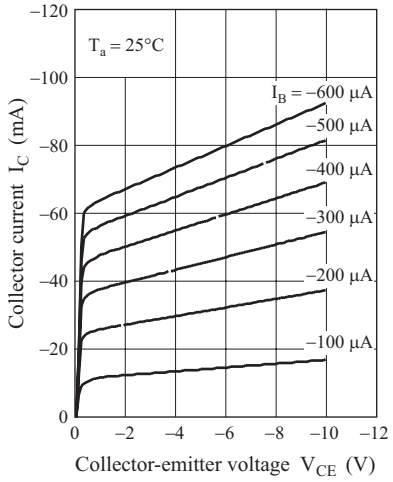


V_{IN} — I_O

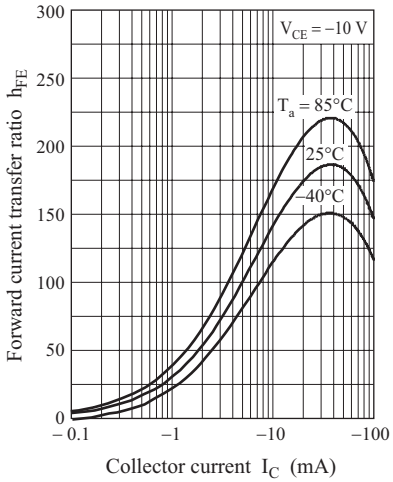


Characteristics charts of Tr2

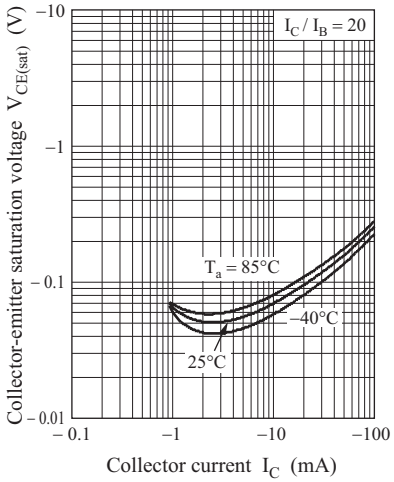
I_C — V_{CE}



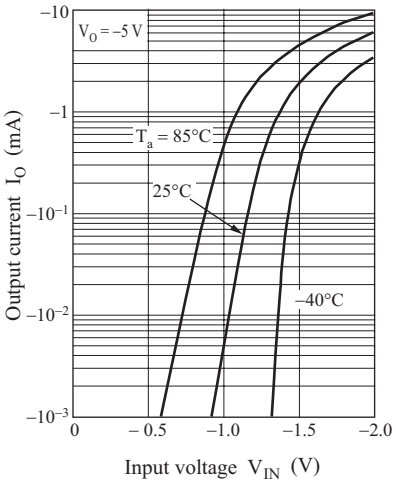
h_{FE} — I_C



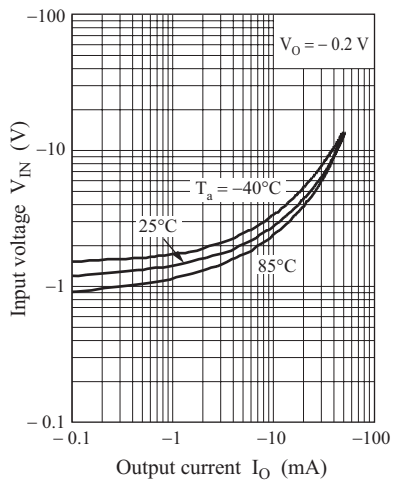
$V_{CE(sat)}$ — I_C



I_O — V_{IN}

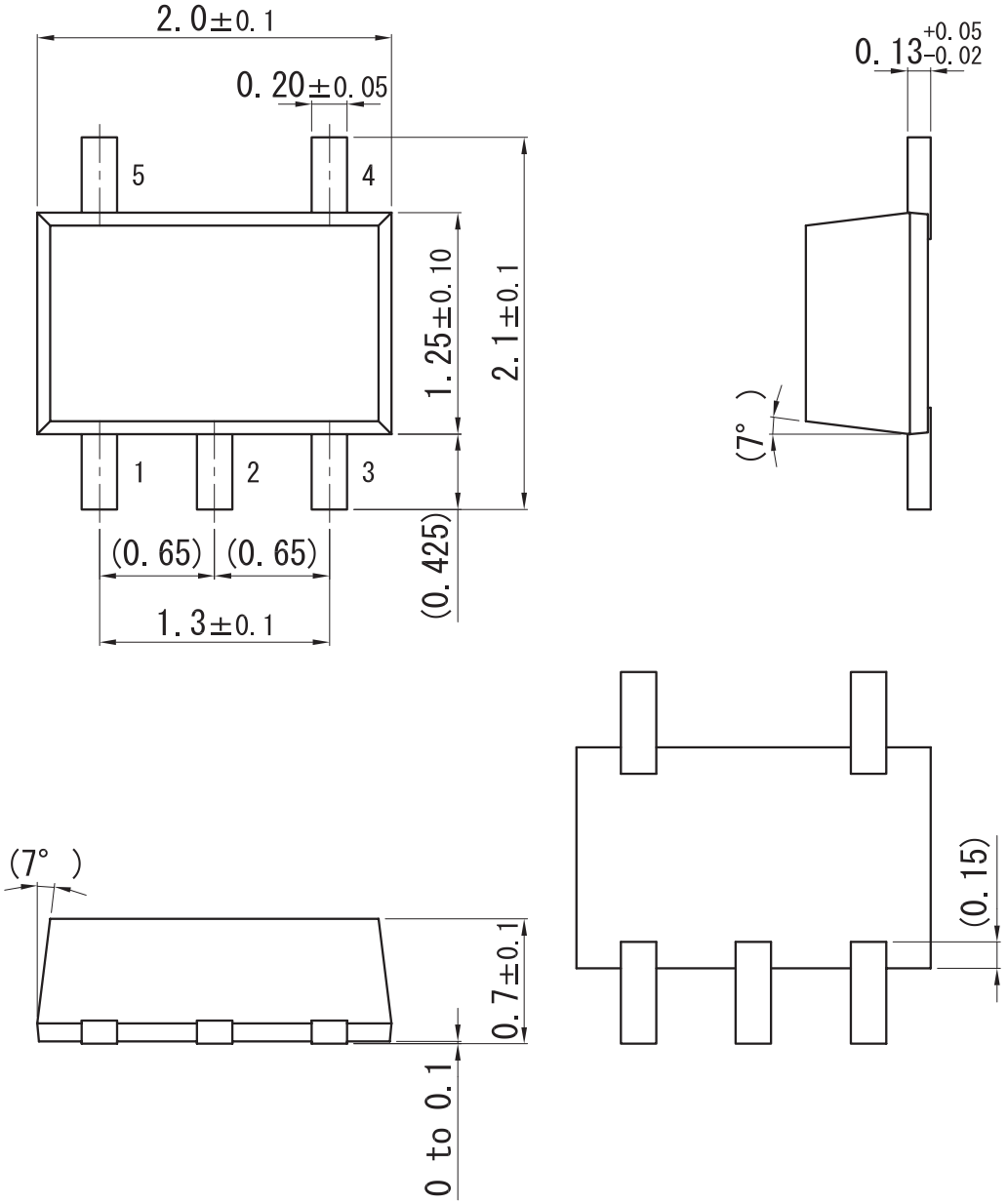


V_{IN} — I_O

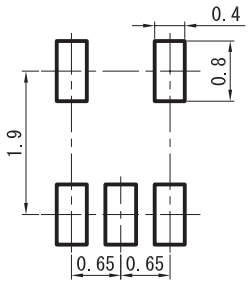


SMini5-F3-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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