DMG204A0

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

For low frequency amplification

■ 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: C2

■ Basic Part Number

DSC2501 + DSA2401 (Individual)

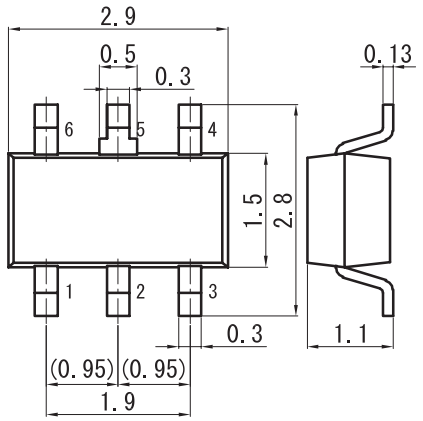
■ Packaging

DMG204A00R Embossed type (Thermo-compression sealing): 3 000 pcs / reel (standard)

■ Absolute Maximum Ratings $T_a = 25°C$

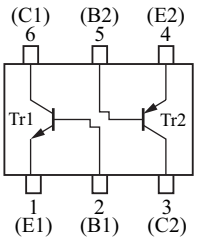
Parameter		Symbol	Rating	Unit
Tr1	Collector-base voltage (Emitter open)	V_{CBO}	25	V
	Collector-emitter voltage (Base open)	V_{CEO}	20	V
	Emitter-base voltage (Collector open)	V_{EBO}	12	V
	Collector current	I_C	0.5	A
	Peak collector current	I_{CP}	1	A
Tr2	Collector-base voltage (Emitter open)	V_{CBO}	–15	V
	Collector-emitter voltage (Base open)	V_{CEO}	–10	V
	Emitter-base voltage (Collector open)	V_{EBO}	–7	V
	Collector current	I_C	– 0.5	A
	Peak collector current	I_{CP}	–1	A
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



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

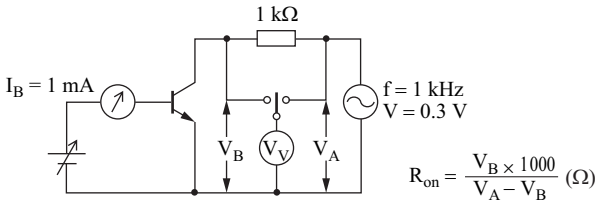
• Tr1

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu A$, $I_E = 0$	25			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1$ mA, $I_B = 0$	20			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10\ \mu A$, $I_C = 0$	12			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 25$ V, $I_E = 0$			100	nA
Forward current transfer ratio	h_{FE}	$V_{CE} = 2$ V, $I_C = 0.5$ A	200		800	—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 0.5$ A, $I_B = 20$ mA		0.18	0.40	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 0.5$ A, $I_B = 50$ mA			1.2	V
Transition frequency	f_T	$V_{CE} = 10$ V, $I_C = 50$ mA		150		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 10$ V, $I_E = 0$, f = 1 MHz		6		pF
ON resistance *2	R_{on}			1.0		Ω

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

2. *1: Pulse measurement

*2: Ron measurement circuit



• Tr2

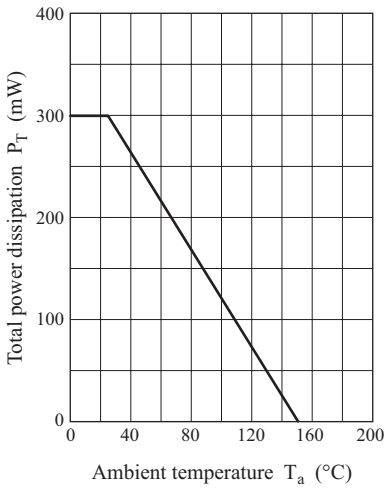
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -10\ \mu A$, $I_E = 0$	–15			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -1$ mA, $I_B = 0$	–10			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = -10\ \mu A$, $I_C = 0$	–7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -10$ V, $I_E = 0$			–100	nA
Forward current transfer ratio *1	h_{FE1}	$V_{CE} = -2$ V, $I_C = -0.5$ A	130		350	—
	h_{FE2}	$V_{CE} = -2$ V, $I_C = -1$ A	60			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -0.4$ A, $I_B = -8$ mA		– 0.15	– 0.30	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = -0.4$ A, $I_B = -8$ mA		– 0.8	–1.2	V
Transition frequency	f_T	$V_{CE} = -10$ V, $I_C = -50$ mA		250		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		18		pF

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

2. *1: Pulse measurement

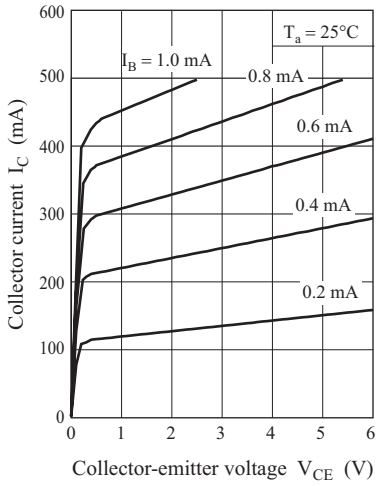
Common characteristics chart

P_T — T_a

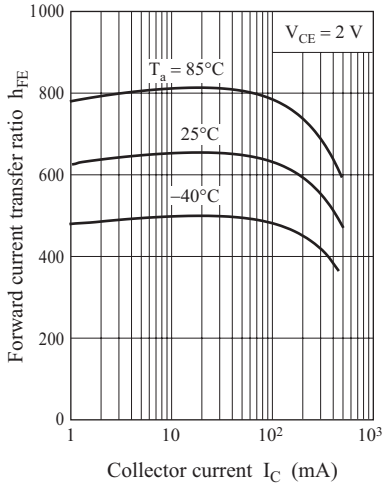


Characteristics charts of Tr1

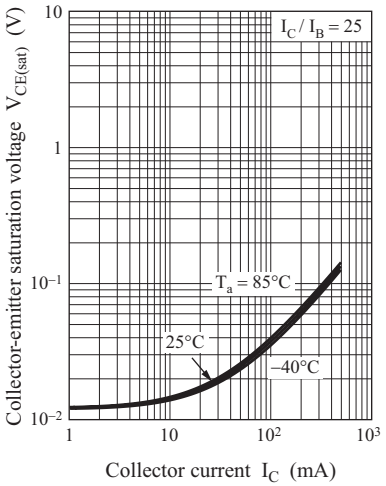
I_C — V_{CE}



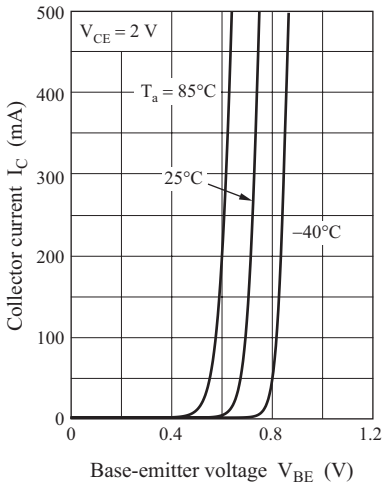
h_{FE} — I_C



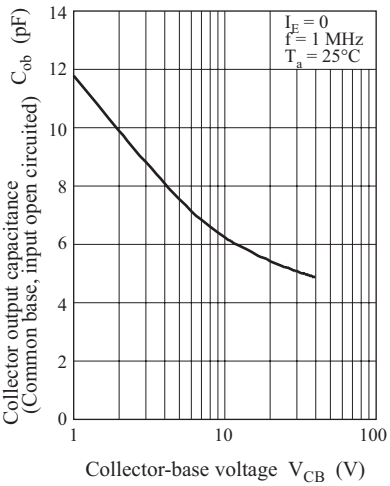
$V_{CE(sat)}$ — I_C



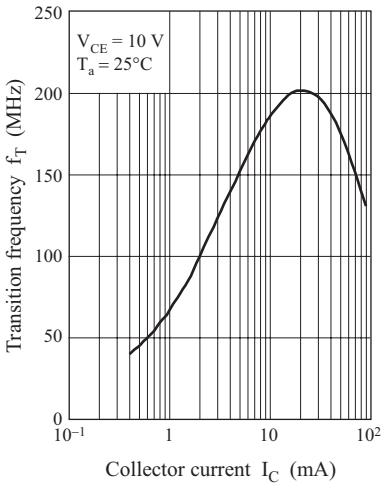
I_C — V_{BE}



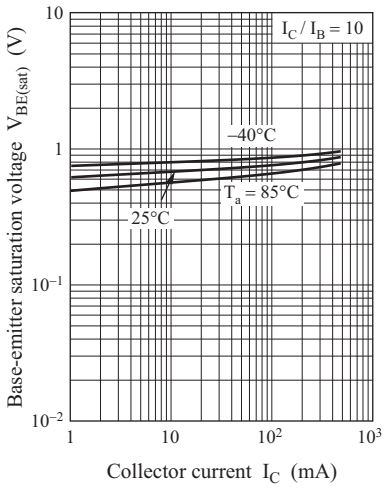
C_{ob} — V_{CB}



f_T — I_C

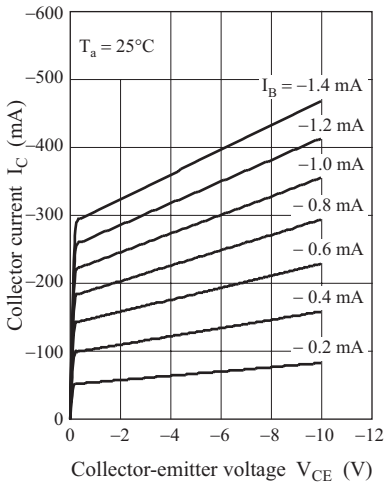


$V_{BE(sat)}$ — I_C

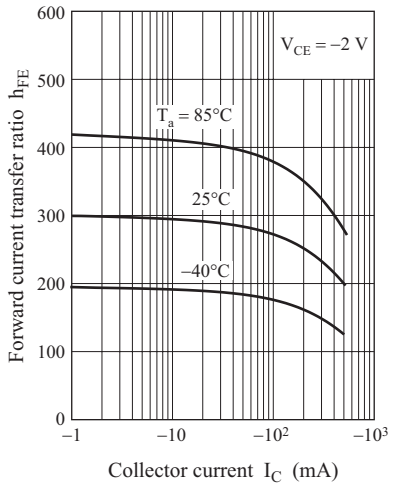


Characteristics charts of Tr2

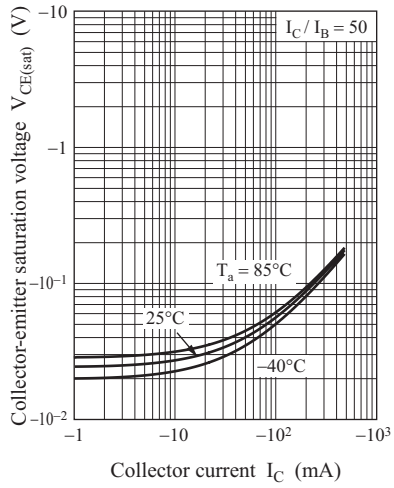
I_C — V_{CE}



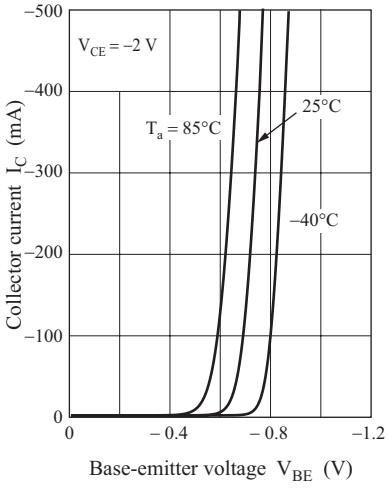
h_{FE} — I_C



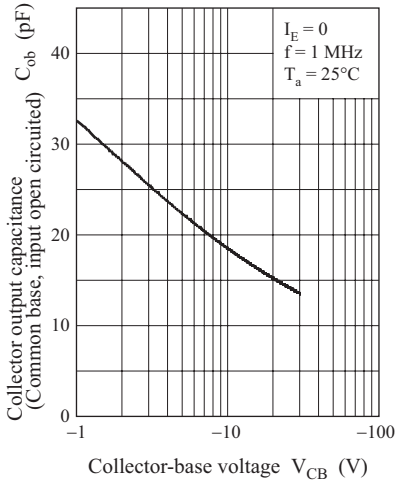
$V_{CE(sat)}$ — I_C



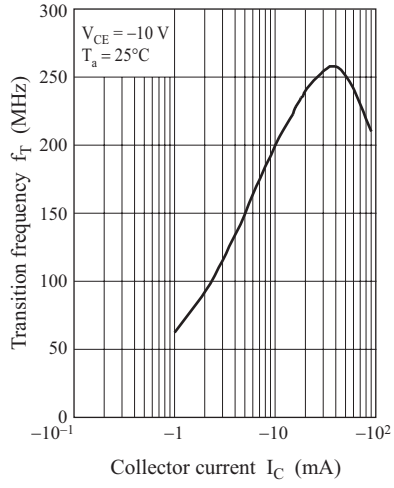
I_C — V_{BE}

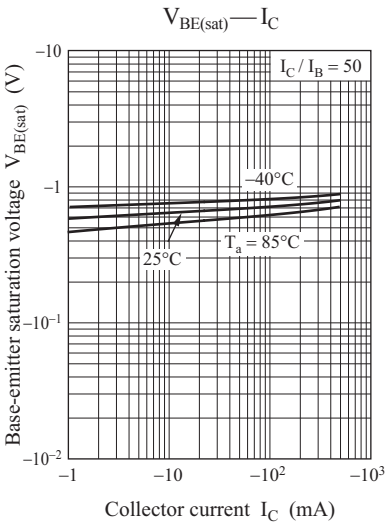


C_{ob} — V_{CB}



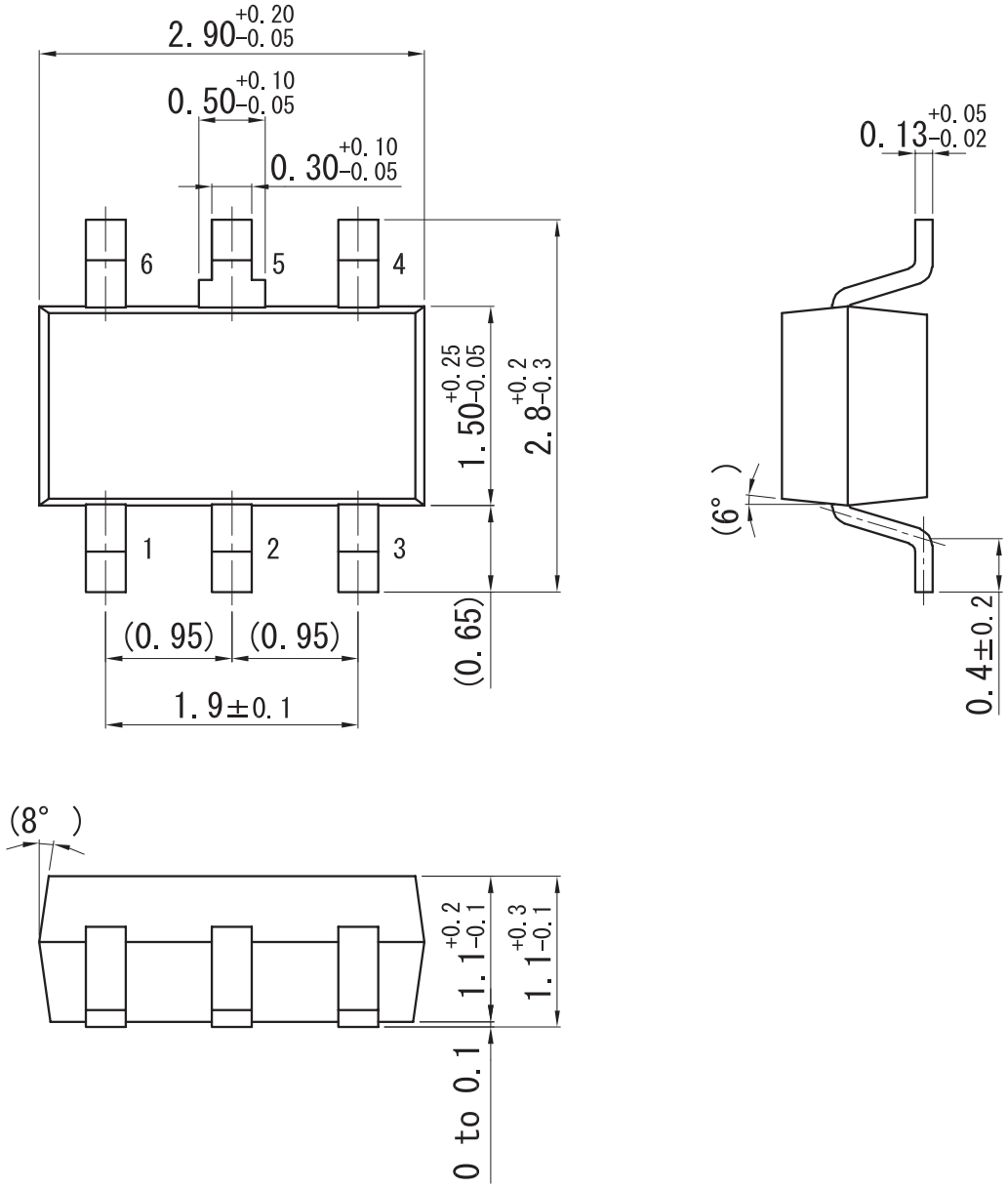
f_T — I_C



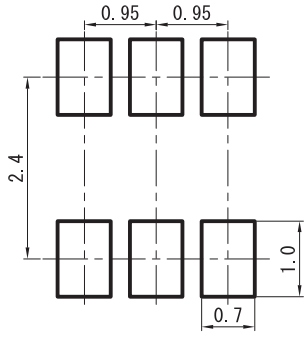

$V_{BE(sat)}$ — I_C
I_C / I_B = 50
−40°C
T_a = 85°C
25°C
Base-emitter saturation voltage $V_{BE(sat)}$ (V)
−10
−1
-10^{-1}
-10^{-2}
−1
−10
-10^{2}
-10^{3}
Collector current I_C (mA)

Mini6-G4-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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