

# 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

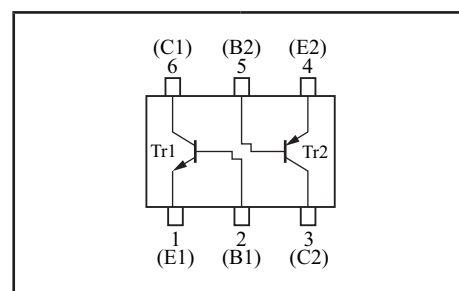
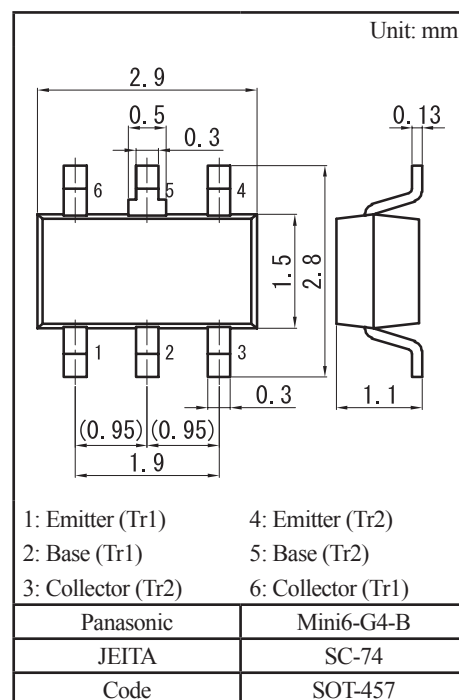
DSC2501 + DSA2401 (Individual)

## ■ Packaging

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

## ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

	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	$^\circ\text{C}$
	Operating ambient temperature	$T_{opr}$	-40 to +85	$^\circ\text{C}$
	Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



■ Electrical Characteristics  $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

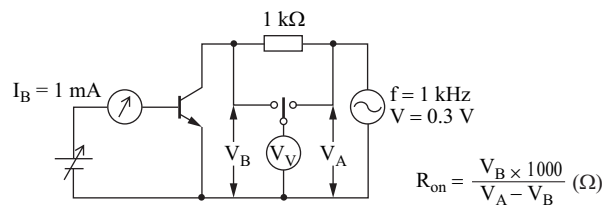
• Tr1

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

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



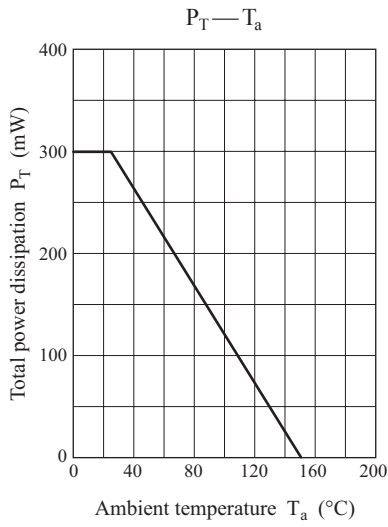
• Tr2

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

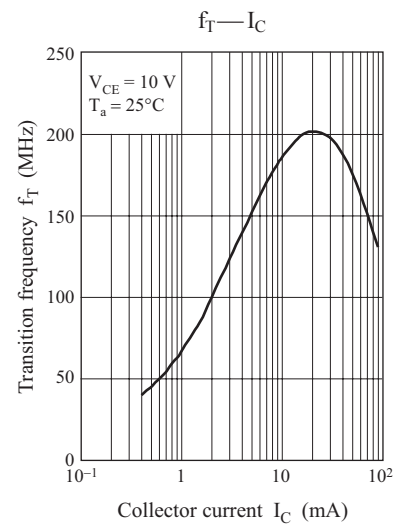
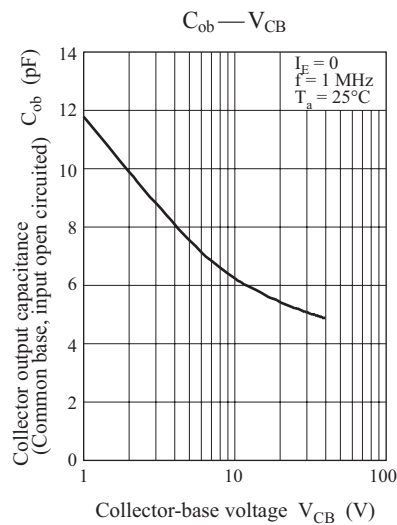
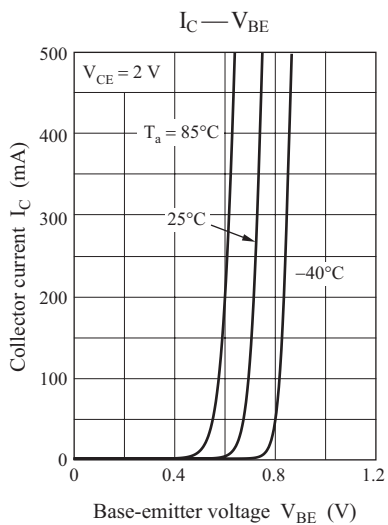
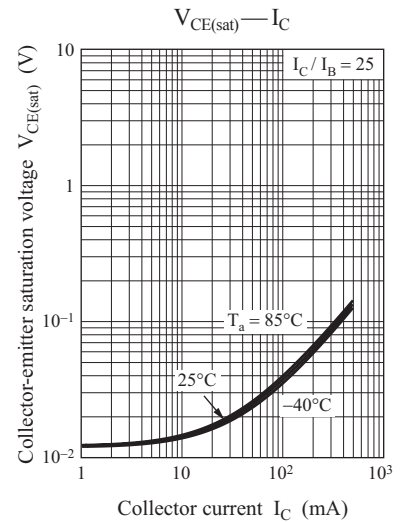
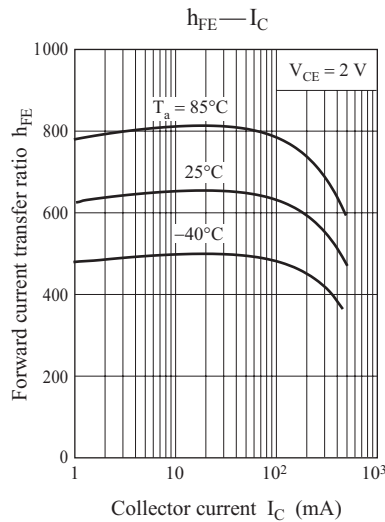
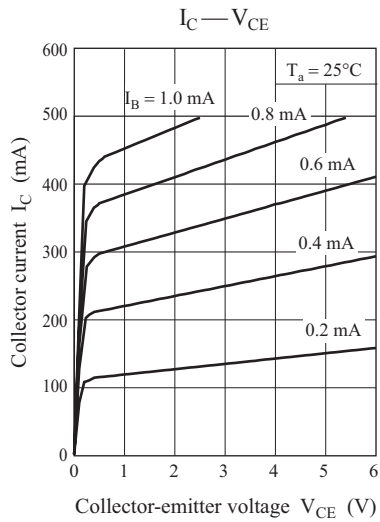
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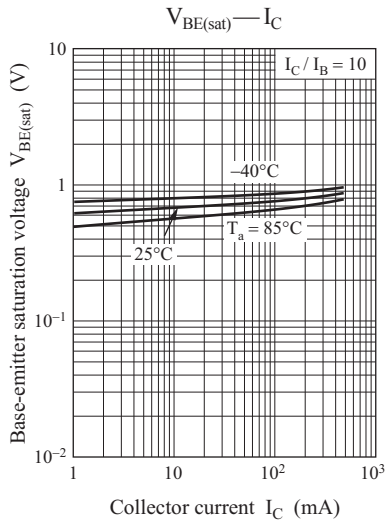
2. \*1: Pulse measurement

Common characteristics chart

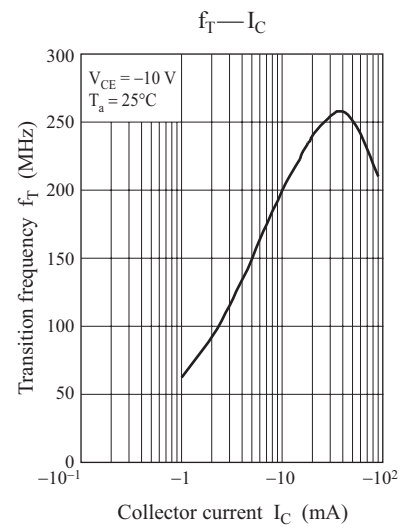
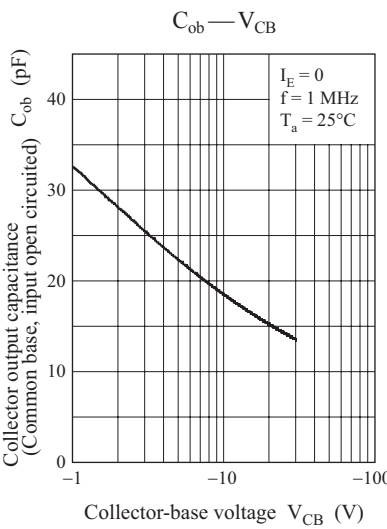
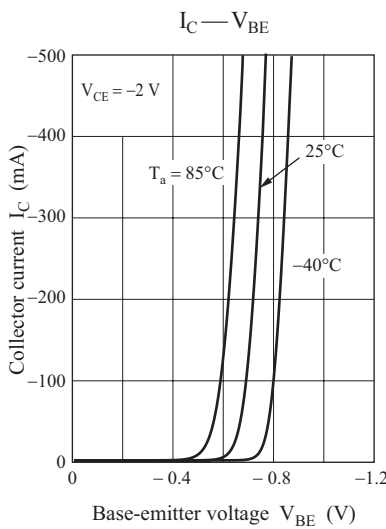
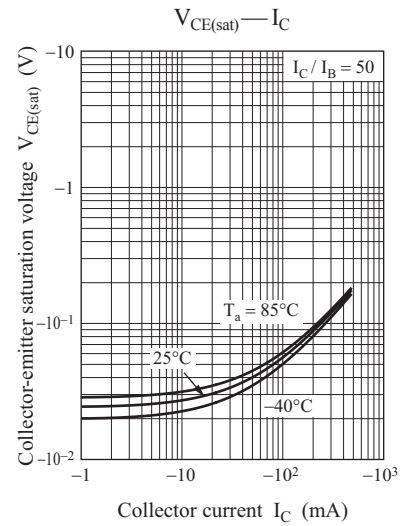
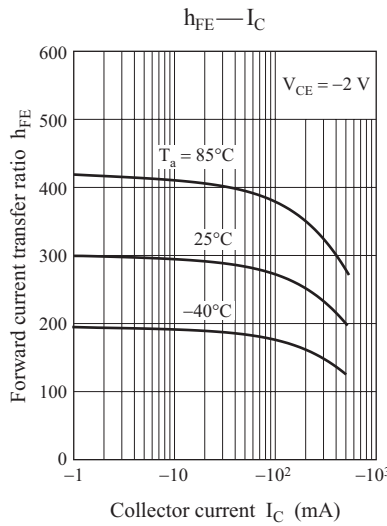
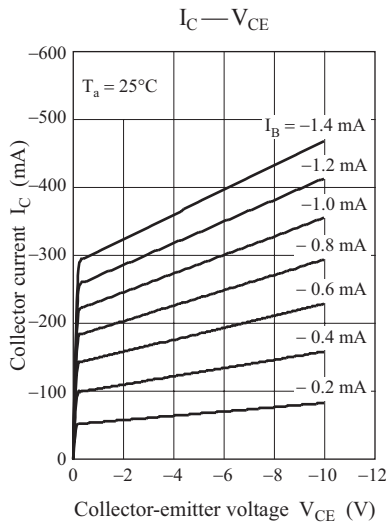


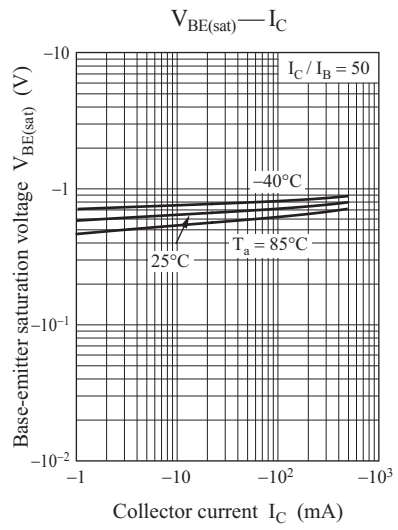
Characteristics charts of Tr1





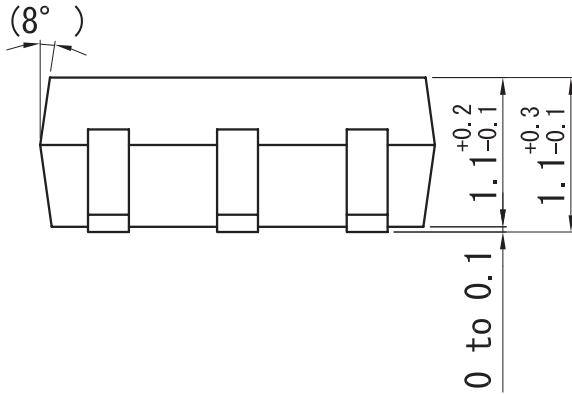
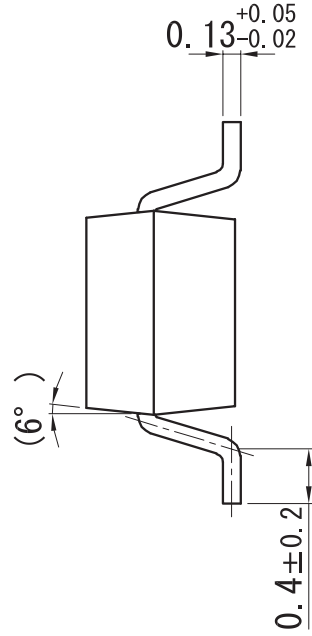
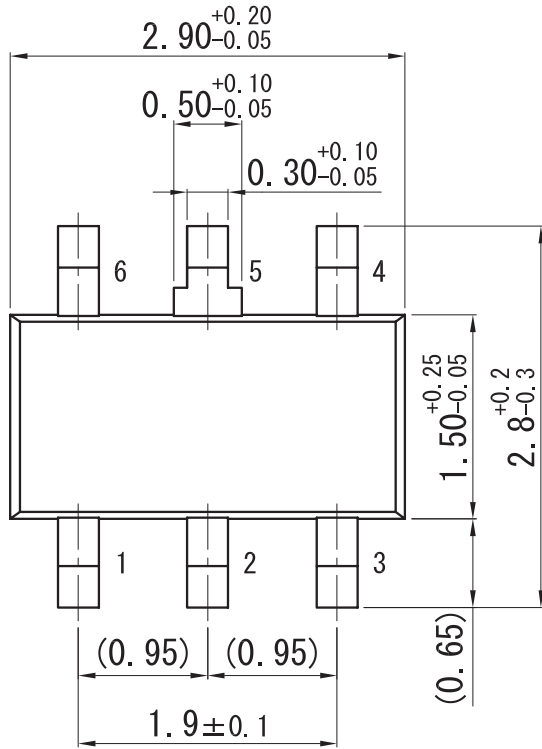
Characteristics charts of Tr2



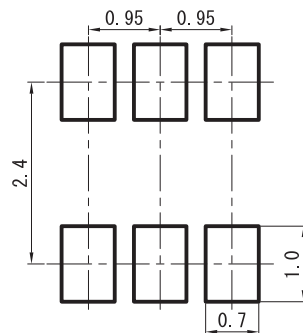


Mini6-G4-B

Unit: mm



■ Land Pattern (Reference) (Unit: mm)



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