DMG96302

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

For digital circuits DMG56302 in SSMini5 type package

Features

- \bullet Low collector-emitter saturation voltage $V_{\mbox{CE(sat)}}$
- Halogen-free / RoHS compliant (EU RoHS / UL-94 V-0 / MSL: Level 1 compliant)
- Marking Symbol: F6

Basic Part Number

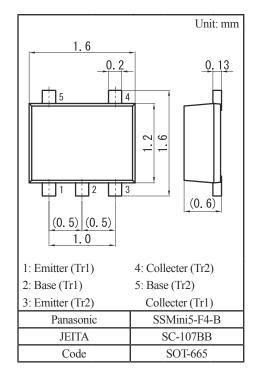
DRC2124E + DRA2124E (Collector-base connection)

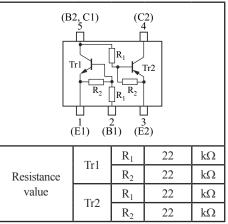
Packaging

DMG963020R Embossed type (Thermo-compression sealing): 8 000 pcs / reel (standard)

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

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	125	mW	
	Junction temperature	Tj	150	°C	
	Operating ambient temperature	T _{opr}	-40 to +85	°C	
	Storage temperature	T _{stg}	-55 to +150	°C	





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

• Tr1

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	$I_{\rm C} = 10 \ \mu {\rm A}, I_{\rm E} = 0$	50			V
Collector-emitter voltage (Base open)	V _{CEO}	$I_{\rm C} = 2 {\rm mA}, I_{\rm B} = 0$	50			V
Collector-base cutoff current (Emitter open)	I _{CBO}	$V_{CB} = 50 \text{ V}, I_E = 0$			0.1	μΑ
Collector-emitter cutoff current (Base open)	I _{CEO}	$V_{CE} = 50 \text{ V}, I_{B} = 0$			0.5	μΑ
Emitter-base cutoff current (Collector open)	I _{EBO}	$V_{\rm EB} = 6 \text{V}, \text{I}_{\rm C} = 0$			0.2	mA
Forward current transfer ratio	\mathbf{h}_{FE}	$V_{CE} = 10 \text{ V}, I_C = 5 \text{ mA}$	60			_
Collector-emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = 10 \text{ mA}, I_{\rm B} = 0.5 \text{ mA}$			0.25	V
Input voltage (ON)	V _{I(on)}	$V_{\rm CE} = 0.2$ V, $I_{\rm C} = 5$ mA	2.6			V
Input voltage (OFF)	V _{I(off)}	$V_{CE} = 5 \text{ V}, I_C = 100 \mu\text{A}$			0.8	V
Input resistance	R ₁		-30%	22	+30%	kΩ
Resistance ratio	R ₁ / R ₂		0.8	1.0	1.2	

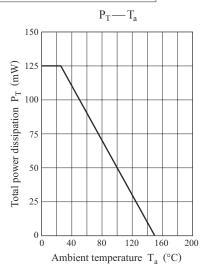
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

• Tr2

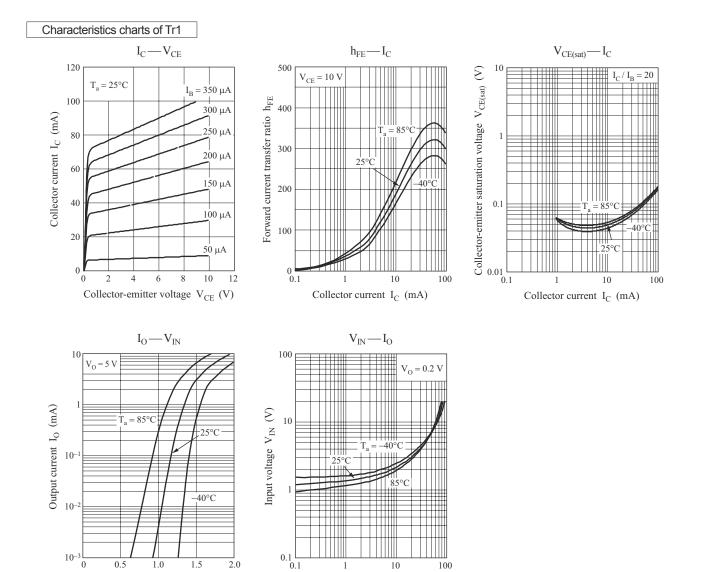
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V _{CBO}	$I_{\rm C} = -10 \ \mu {\rm A}, I_{\rm E} = 0$	-50			V
Collector-emitter voltage (Base open)	V _{CEO}	$I_{\rm C} = -2 {\rm mA}, I_{\rm B} = 0$	-50			V
Collector-base cutoff current (Emitter open)	I _{CBO}	$V_{CB} = -50 \text{ V}, I_E = 0$			- 0.1	μΑ
Collector-emitter cutoff current (Base open)	I _{CEO}	$V_{\rm CE} = -50$ V, $I_{\rm B} = 0$			- 0.5	μΑ
Emitter-base cutoff current (Collector open)	I _{EBO}	$V_{EB} = -6 \text{ V}, I_C = 0$			- 0.2	mA
Forward current transfer ratio	$h_{\rm FE}$	$V_{CE} = -10 \text{ V}, I_C = -5 \text{ mA}$	60			
Collector-emitter saturation voltage	V _{CE(sat)}	$I_{\rm C} = -10 \text{ mA}, I_{\rm B} = -0.5 \text{ mA}$			-0.25	V
Input voltage (ON)	V _{I(on)}	$V_{CE} = -0.2 \text{ V}, I_C = -5 \text{ mA}$	-2.6			V
Input voltage (OFF)	V _{I(off)}	$V_{CE} = -5 \text{ V}, I_C = -100 \mu\text{A}$			- 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



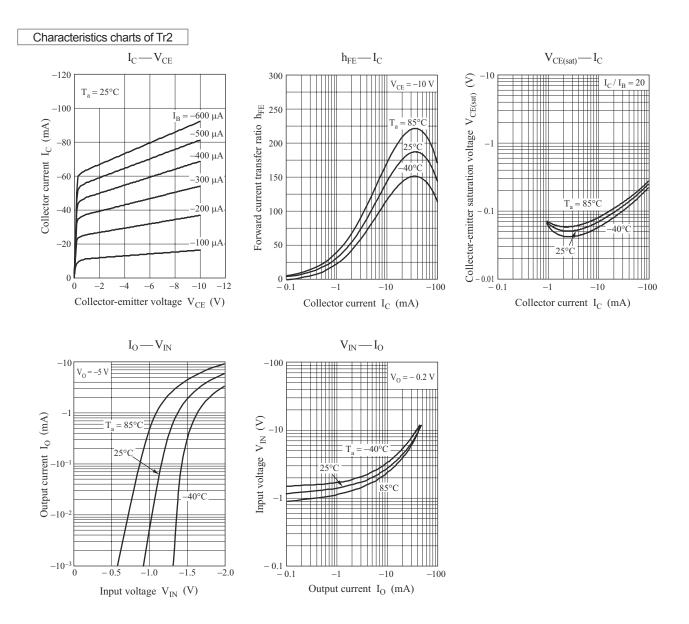
Input voltage V_{IN} (V)



1

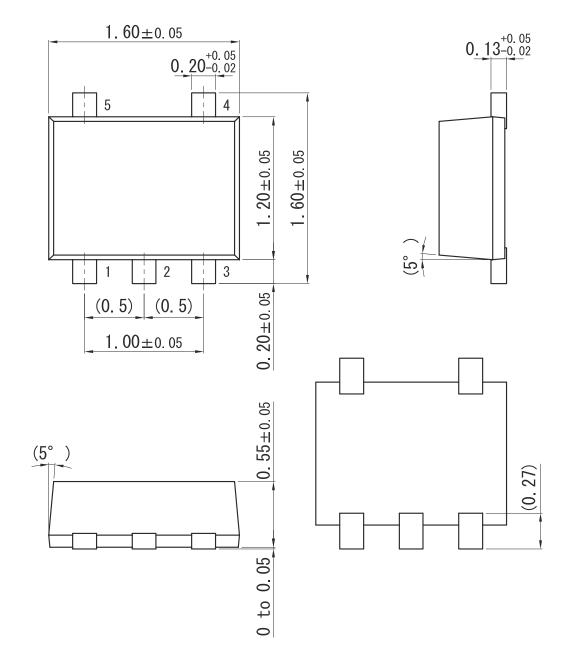
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Output current I_O (mA)

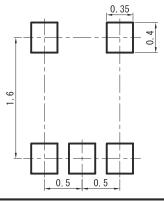


SSMini5-F4-B

Unit: mm



Land Pattern (Reference) (Unit: mm)



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