

PRELIMINARY

Notice: this is not a final specification.
Some parametric limits are subject to change.

RT1C3904-T12

Transistor
For General purpose Application
Silicon NPN Epitaxial Type

RT1C3904 is a one chip transistor.

FEATURE

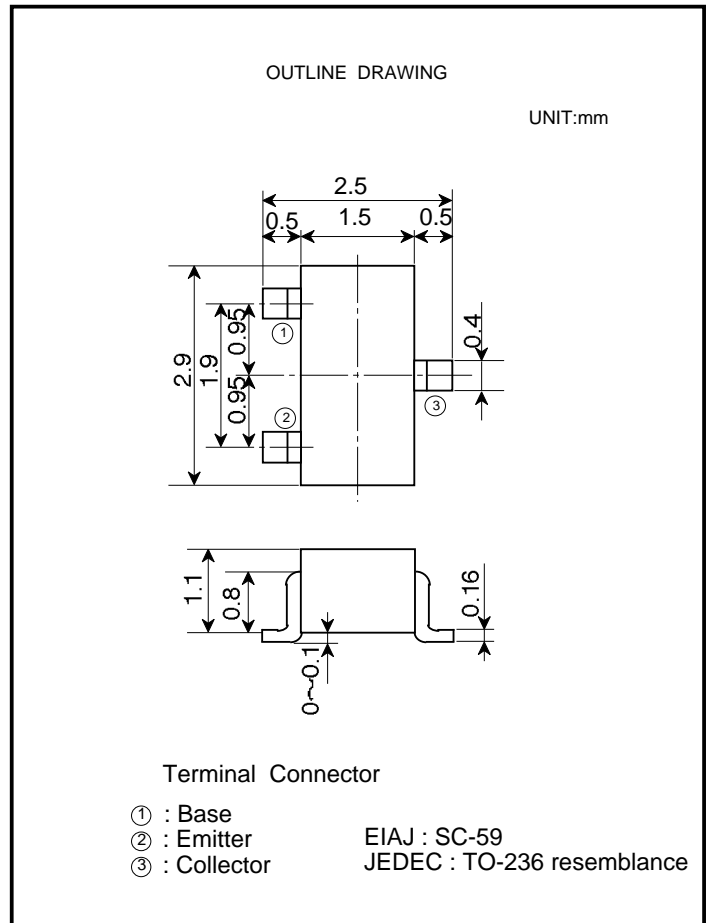
- Mini package for easy mounting.

APPLICATION

General purpose transistor

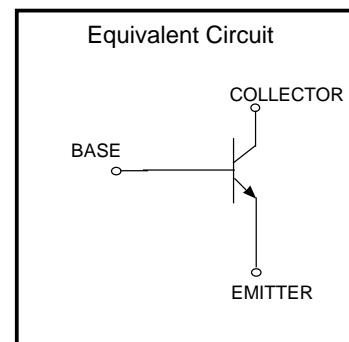
MAXIMUM RATINGS (Ta=25 °C)

SYMBOL	PARAMETER	RATINGS	UNIT
V _{CEO}	Collector to Emitter voltage	40	V
V _{CBO}	Collector to Base voltage	60	V
V _{EBO}	Emitter to Base voltage	6.0	V
I _C	Collector current	200	mA



THERMAL CHARACTERISTICS

SYMBOL	Characteristics	RATINGS	UNIT
P _D	Total Device Dissipation Glass-Epoxy Board ⁽¹⁾ Ta=25	225	mW
	Derate Above 25	1.8	mW/°C
R _{JA}	Thermal Resistance Junction to Ambient	556	/mW
	Total Device Dissipation Alumina Substrate ⁽²⁾ Ta=25	300	mW
R _{JA}	Derate Above 25	2.4	mW/°C
	Thermal Resistance Junction to Ambient	417	/mW
T _j	Junction temperature	+150	
T _{stg}	Storage temperature	-55 to +150	



ELECTRICAL CHARACTERISTICS (Ta=25 °C unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
V _{(BR)CEO}	C to E break down voltage ⁽³⁾	I _C =1.0mA, I _B =0	40			V
V _{(BR)CBO}	C to B break down voltage	I _C =10 μA, I _E =0	60			V
V _{(BR)EBO}	E to B break down voltage	I _C =10 μA, I _C =0	6			V
I _{BL}	Base cut off current	V _{CE} =30V, V _{EB} =3.0V			50	nA
I _{CEX}	Collector cut off current	V _{CE} =30V, V _{EB} =3.0V			50	nA

- 1.Glass-Epoxy=1.0 × 0.75 × 3.2in
- 2.Alumina=0.4 × 0.3 × 3.2 in
- 3.Pulse test

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SYMBOL	PARAMETER	TESTCONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
hFE	DC current gain	I _C =0.1mA, V _{CE} =1.0V	40		-	
		I _C =1.0mA, V _{CE} =1.0V	70		-	
		I _C =10mA, V _{CE} =1.0V	100		300	
		I _C =50mA, V _{CE} =1.0V	60		-	
		I _C =100mA, V _{CE} =1.0V	30		-	
V _{CE(sat)}	Collector-Emitter saturation Voltage	I _C =10mA, I _B =1.0mA	-		0.2	V
		I _C =50mA, I _B =5.0mA	-		0.3	V
V _{BE(sat)}	Base-Emitter saturation Voltage	I _C =10mA, I _B =1.0mA	0.65		0.85	V
		I _C =50mA, I _B =5.0mA	-		0.95	V
f _T	Current Gain Bandwidth product	I _C =10mA, V _{CE} =20V, f=100MHz	300		-	MHz
C _{obo}	Output Capacitance	V _{CB} =5V, I _E =0, f _T =1.0MHz	-		4.0	pF



Marketing division, Marketing planning department

6-41 Tsukuba, Isahaya, Nagasaki, 854-0065 Japan

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