

To all our customers

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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

Cautions

Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.

Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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2SC5049

Silicon NPN Epitaxial

RENESAS

ADE-208-1129A (Z)
2nd. Edition
Mar. 2001

Application

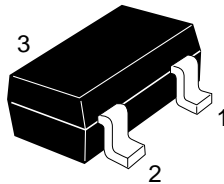
VHF / UHF wide band amplifier

Features

- High gain bandwidth product
 $f_T = 10 \text{ GHz Typ}$
- High gain, low noise figure
 $PG = 15.0 \text{ dB Typ}$, $NF = 1.2 \text{ dB Typ}$ at $f = 900 \text{ MHz}$

Outline

MPAK



1. Emitter
2. Base
3. Collector

Note: Marking is "YA-".

Attention: This device is very sensitive to electro static discharge.

It is recommended to adopt appropriate cautions when handling this transistor.

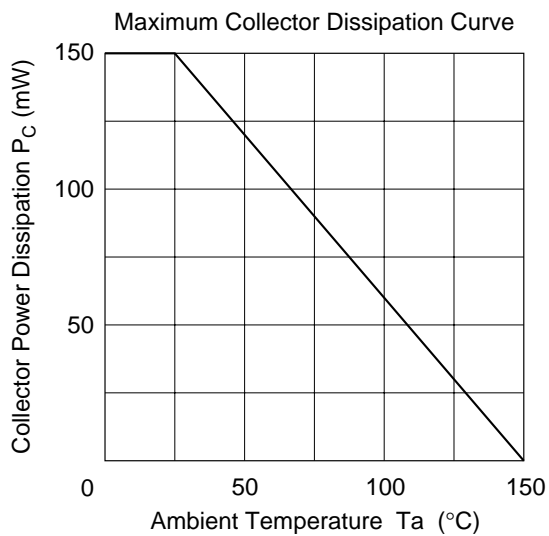
Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	15	V
Collector to emitter voltage	V_{CEO}	8	V
Emitter to base voltage	V_{EBO}	1.5	V
Collector current	I_C	20	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector cutoff current	I_{CBO}	—	—	10	μ A	$V_{CB} = 15$ V, $I_E = 0$
	I_{CEO}	—	—	1	mA	$V_{CE} = 8$ V, $R_{BE} =$
Emitter cutoff current	I_{EBO}	—	—	10	μ A	$V_{EB} = 1.5$ V, $I_C = 0$
DC current transfer ratio	h_{FE}	50	120	250		$V_{CE} = 5$ V, $I_C = 20$ mA
Collector output capacitance	C_{ob}	—	0.45	0.8	pF	$V_{CB} = 5$ V, $I_E = 0$, $f = 1$ MHz
Gain bandwidth product	f_T	7.0	10.0	—	GHz	$V_{CE} = 5$ V, $I_C = 10$ mA
Power gain	PG	12.0	15.0	—	dB	$V_{CE} = 5$ V, $I_C = 10$ mA, $f = 900$ MHz
Noise figure	NF	—	1.2	2.5	dB	$V_{CE} = 5$ V, $I_C = 5$ mA, $f = 900$ MHz

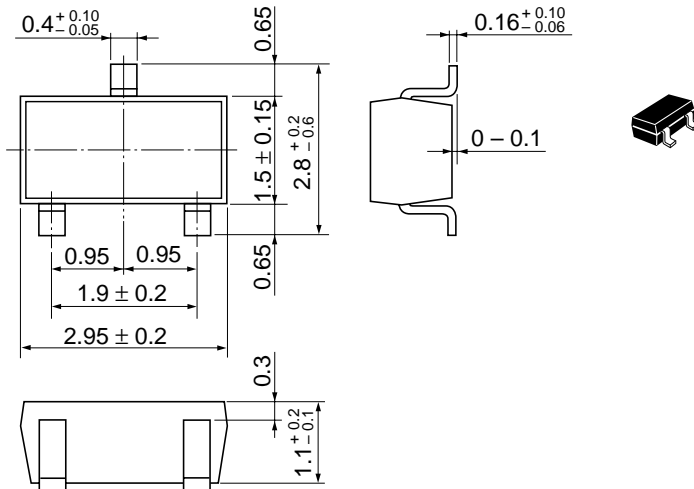
See characteristic curves of 2SC4784.



Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	MPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.011 g

Cautions

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