

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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# 2SC5050

Silicon NPN Epitaxial

**RENESAS**

ADE-208-1130A (Z)  
2nd. Edition  
Mar. 2001

## Application

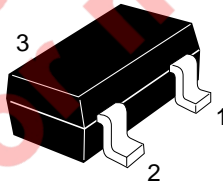
VHF / UHF wide band amplifier

## Features

- High gain bandwidth product  
 $f_T = 11 \text{ GHz Typ}$
- High gain, low noise figure  
 $PG = 14.0 \text{ dB Typ}$ ,  $NF = 1.1 \text{ dB Typ}$  at  $f = 900 \text{ MHz}$

## Outline

MPAK



1. Emitter
2. Base
3. Collector

Note: Marking is "YZ-".

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

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

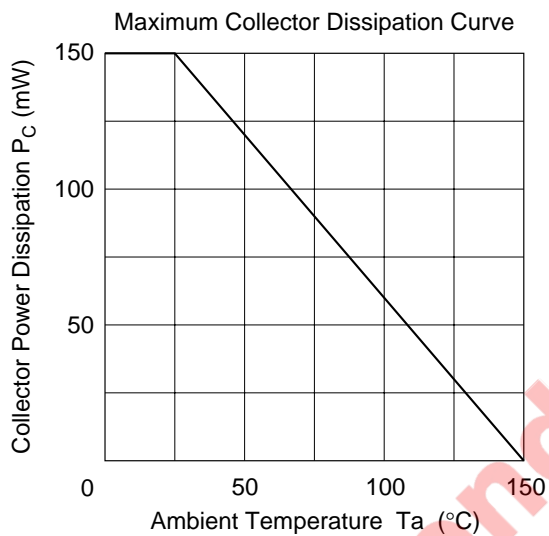
## Absolute Maximum Ratings (Ta = 25°C)

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	$I_C$	50	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 to base breakdown voltage	$V_{(BR)CBO}$	15	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu A$	$V_{CB} = 12 V, I_E = 0$
	$I_{CEO}$	—	—	1	mA	$V_{CE} = 8 V, R_{BE} =$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 1.5 V, I_C = 0$
DC current transfer ratio	$h_{FE}$	50	120	250		$V_{CE} = 5 V, I_C = 20 mA$
Collector output capacitance	$C_{ob}$	—	0.6	1.1	pF	$V_{CB} = 5 V, I_E = 0, f = 1 MHz$
Gain bandwidth product	$f_T$	8.0	11.0	—	GHz	$V_{CE} = 5 V, I_C = 20 mA$
S21 Parameter	$ S_{21} $	—	13.5	—	dB	$V_{CE} = 5 V, I_C = 20 mA, f = 1000 MHz$
Power gain	PG	11.0	14.0	—	dB	$V_{CE} = 5 V, I_C = 20 mA, f = 900 MHz$
Noise figure	NF	—	1.1	2.0	dB	$V_{CE} = 5 V, I_C = 5 mA, f = 900 MHz$

See characteristic curves of 2SC4926.

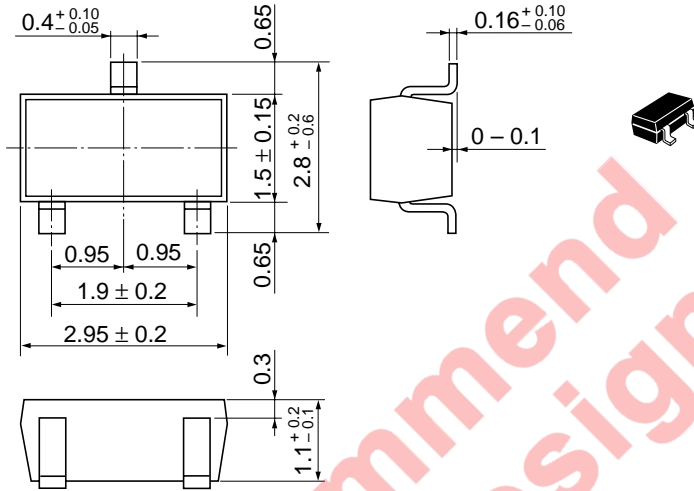


Not recommended  
for new design

Package Dimensions

As of January, 2001

Unit: mm



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

Not recommend  
for new design

## Cautions

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