

To all our customers

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

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Keep safety first in your circuit designs!

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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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# 2SA1171

Silicon PNP Epitaxial

**RENESAS**

ADE-208-1010 (Z)  
1st. Edition  
Mar. 2001

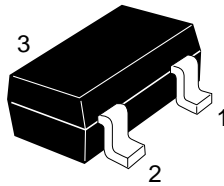
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## Application

Low frequency small signal amplifier

## Outline

MPAK



- 1. Emitter
- 2. Base
- 3. Collector

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

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-90	V
Collector to emitter voltage	$V_{CEO}$	-90	V
Emitter to base voltage	$V_{EBO}$	-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

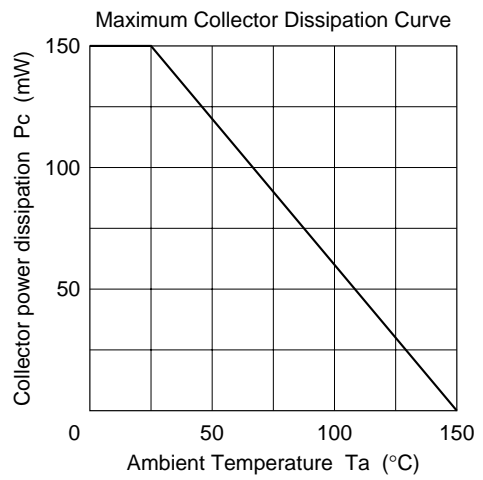
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-90	—	—	V	$I_C = -1 \text{ mA}$ , $R_{BE} = \infty$
Collector cutoff current	$I_{CBO}$	—	—	-0.5	$\mu\text{A}$	$V_{CB} = -75 \text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE}^{*1}$	250	—	800		$V_{CE} = -12 \text{ V}$ , $I_C = -2 \text{ mA}$
Base to emitter voltage	$V_{BE}$	—	—	-0.75	V	$V_{CE} = -12 \text{ V}$ , $I_C = -2 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.5	V	$I_C = -10 \text{ mA}$ , $I_B = -1 \text{ mA}$
Gain bandwidth product	$f_T$	—	200	—	MHz	$V_{CE} = -12 \text{ V}$ , $I_C = -2 \text{ mA}$
Collector output capacitance	$C_{ob}$	—	1.6	—	pF	$V_{CB} = -25 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

Note: 1. The 2SA1171 is grouped by  $h_{FE}$  as follows.

Grade	D	E
Mark	PD	PE
$h_{FE}$	250 to 500	400 to 800

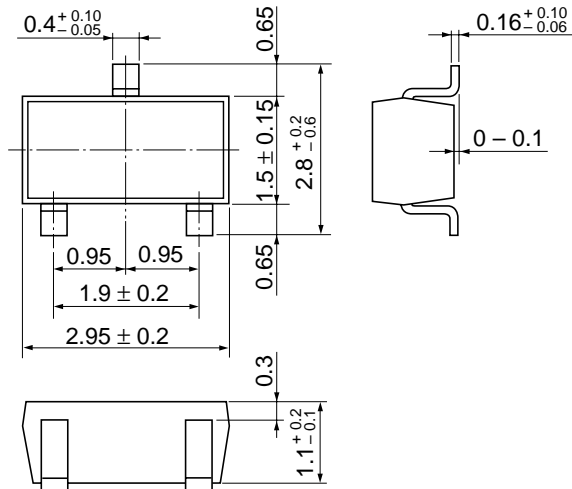
See characteristic curves of 2SA872.



Package Dimensions

As of January, 2001

Unit: mm



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

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