

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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# 2SA1566

Silicon PNP Epitaxial

**RENESAS**

ADE-208-1021 (Z)  
1st. Edition  
Mar. 2001

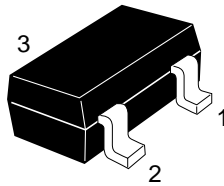
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## Application

Low frequency amplifier

## Outline

MPAK



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

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

Item	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-120	V
Collector to emitter voltage	$V_{CEO}$	-120	V
Emitter to base voltage	$V_{EBO}$	-5	V
Collector current	$I_C$	-100	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

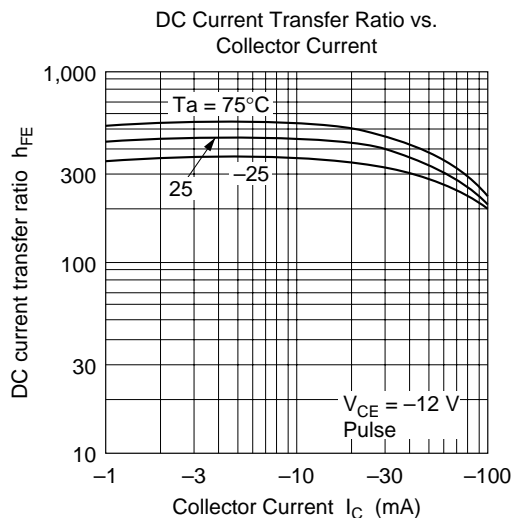
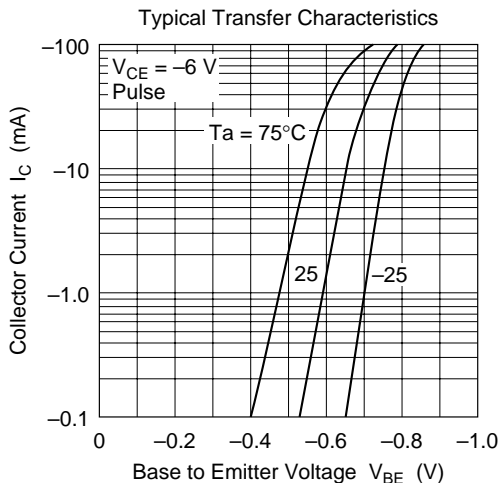
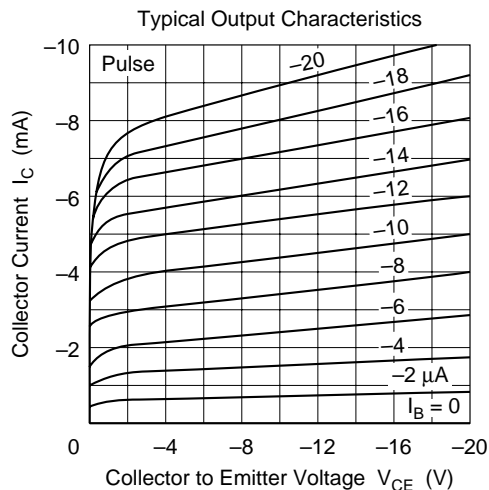
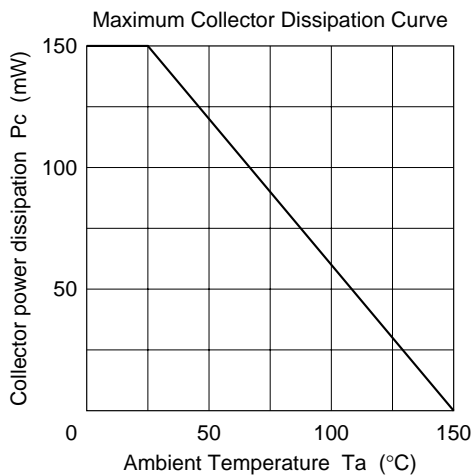
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-120	—	—	V	$I_C = -10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-120	—	—	V	$I_C = -1 \text{ mA}, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10 \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-0.1	$\mu A$	$V_{CB} = -70 \text{ V}, I_E = 0$
Emitter cutoff current	$I_{EBO}$	—	—	-0.1	$\mu A$	$V_{EB} = -2 \text{ V}, I_C = 0$
DC current transfer ratio	$h_{FE}^{*1}$	250	—	800		$V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-0.15	V	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}^{*2}$
Base to emitter voltage	$V_{BE(sat)}$	—	—	-1.0	V	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}^{*2}$

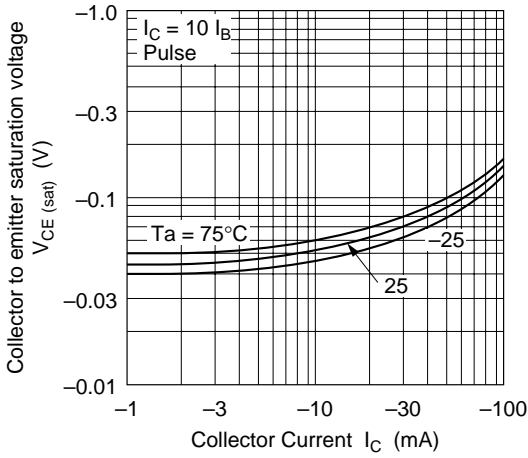
Notes: 1. The 2SA1566 is grouped by  $h_{FE}$  as follows.

2. Pulse test

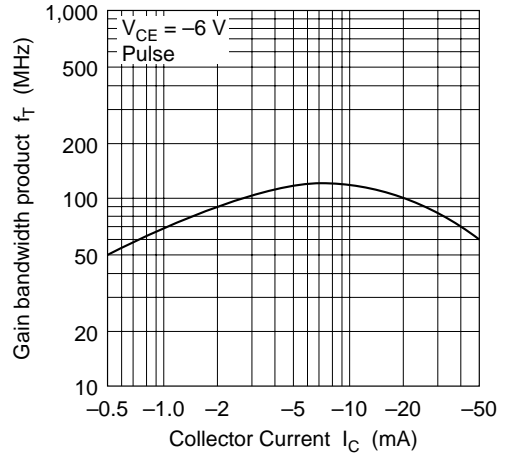
Grade	D	E
Mark	JID	JIE
$h_{FE}$	250 to 500	400 to 800



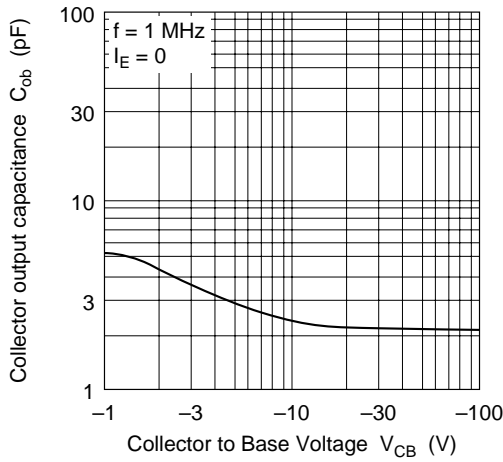
Collector to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current



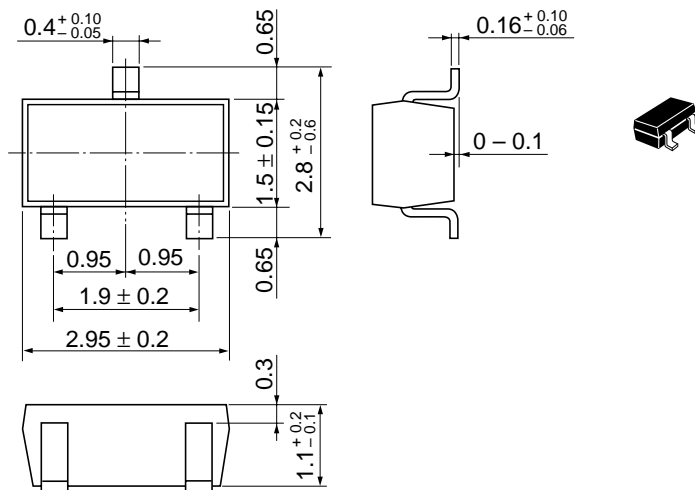
Collector Output Capacitance vs. Collector to Base Voltage



## Package Dimensions

As of January, 2001

Unit: mm



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

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