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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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2SD1366

Silicon NPN Epitaxial

RENESAS

ADE-208-1145 (Z)

1st. Edition

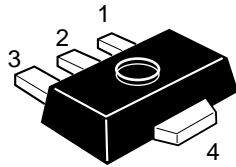
Mar. 2001

Application

Low frequency power amplifier

Outline

UPAK



1. Base
2. Collector
3. Emitter
4. Collector (Flange)

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	25	V
Collector to emitter voltage	V_{CEO}	20	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	1	A
Collector peak current	$i_{C(\text{peak})}^{*1}$	1.5	A
Collector power dissipation	P_C^{*2}	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10$ ms, Duty cycle $\leq 20\%$.

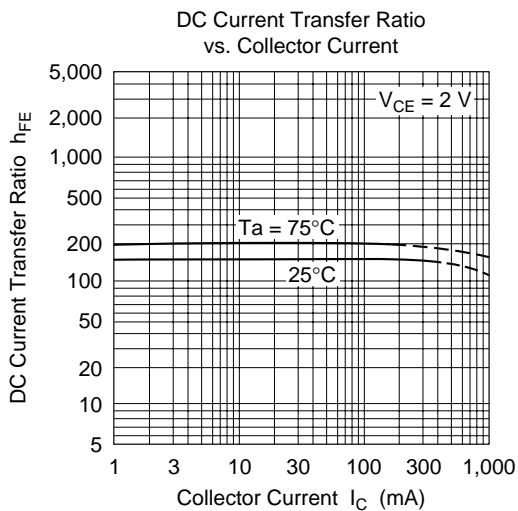
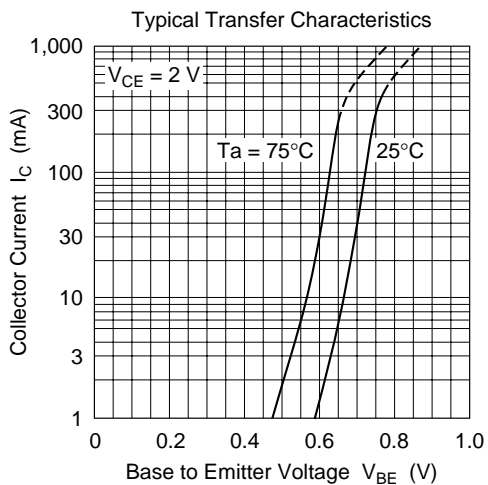
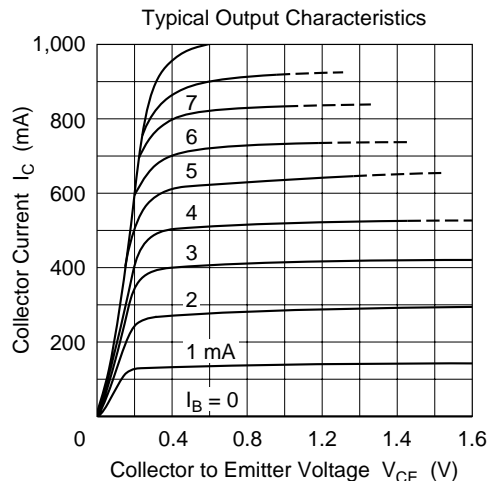
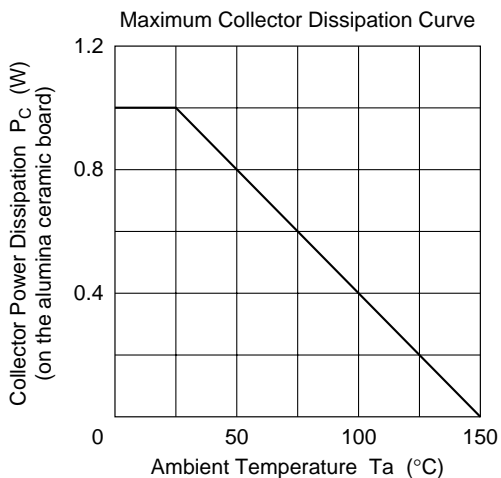
2. Value on the alumina ceramic board (12.5 × 20 × 0.7 mm)

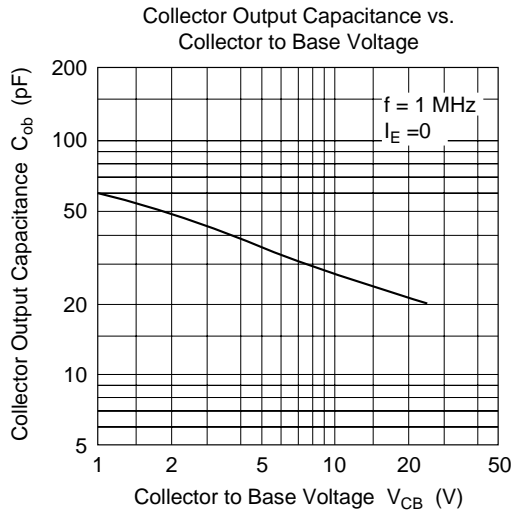
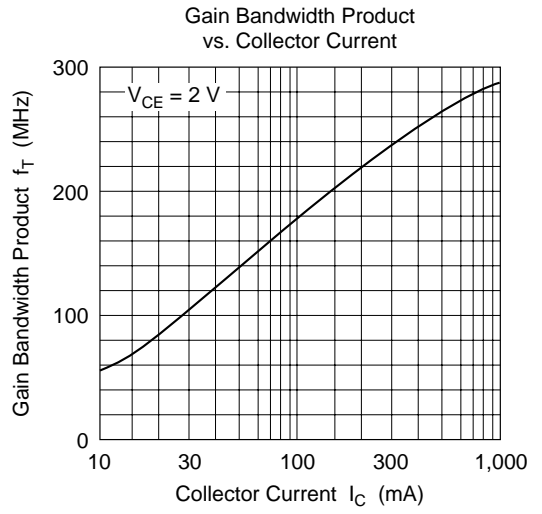
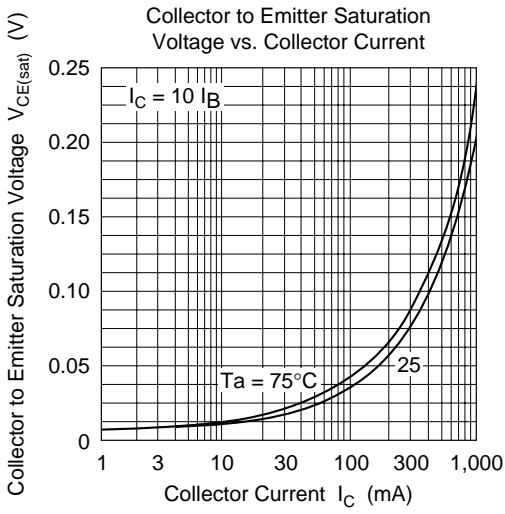
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	25	—	—	V	$I_C = 10 \mu\text{A}$, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	20	—	—	V	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu\text{A}$, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB} = 20 \text{ V}$, $I_E = 0$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB} = 4 \text{ V}$, $I_C = 0$
DC current transfer ratio	h_{FE}^{*1}	85	—	240		$V_{CE} = 2 \text{ V}$, $I_C = 0.5 \text{ A}$, Pulse
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	—	0.15	0.3	V	$I_C = 0.8 \text{ A}$, $I_B = 0.08 \text{ A}$, Pulse
Base to emitter saturation voltage	$V_{BE(\text{sat})}$	—	0.9	1.0	V	$I_C = 0.8 \text{ A}$, $I_B = 0.08 \text{ A}$, Pulse
Gain bandwidth product	f_T	—	240	—	MHz	$V_{CE} = 2 \text{ V}$, $I_C = 0.5 \text{ A}$, Pulse
Collector output capacitance	C_{ob}	—	22	—	pF	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$

Note: 1. The 2SD1366 is grouped by h_{FE} as follows.

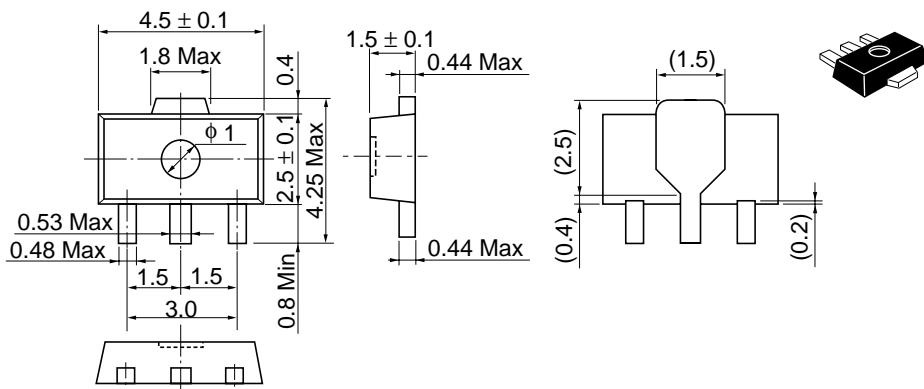
Mark	AA	AB
h_{FE}	85 to 170	120 to 240





Package Dimensions

As of January, 2001
Unit: mm



Hitachi Code	UPAK
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.050 g

Cautions

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