

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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2SD1420

Silicon NPN Epitaxial

RENESAS

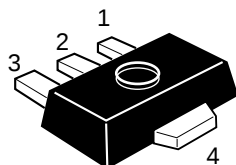
ADE-208-1151 (Z)
1st. Edition
Mar. 2001

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}	180	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	5	V
Collector current	I_C	1.5	A
Collector peak current	$i_{C(peak)}^{*1}$	3	A
Collector power dissipation	P_C^{*2}	1	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

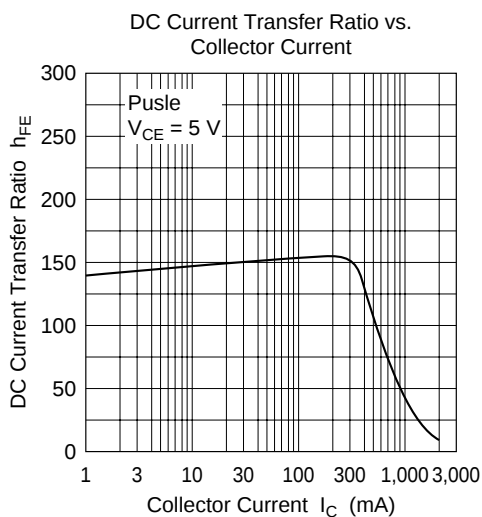
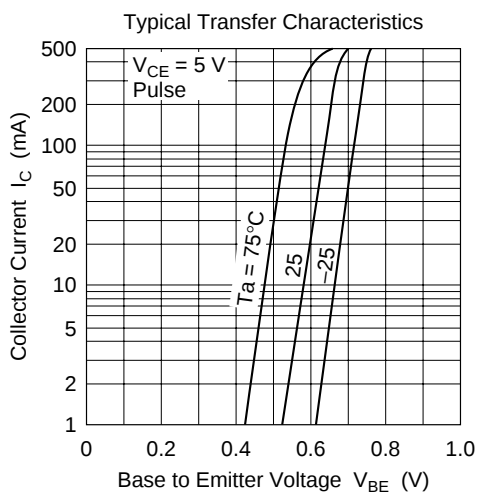
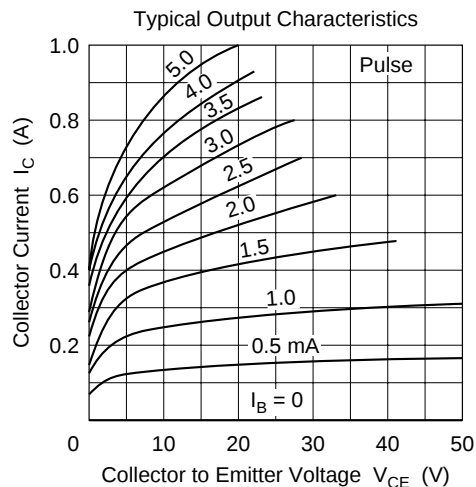
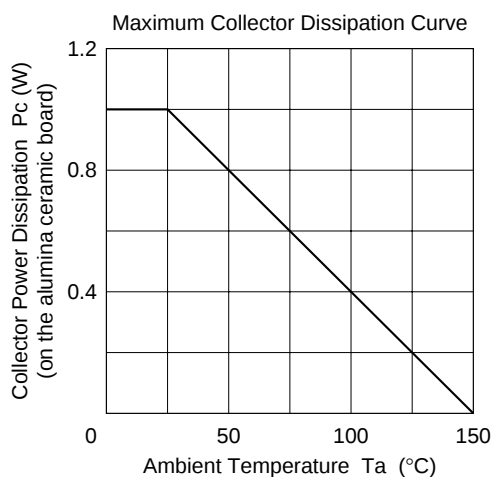
Notes: 1. $PW \leq 10$ ms, Duty cycle $\leq 20\%$
2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

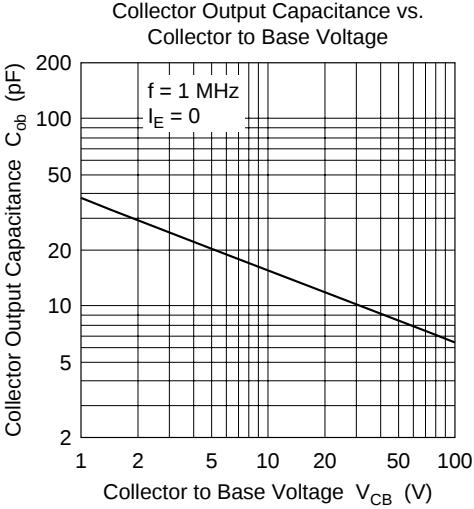
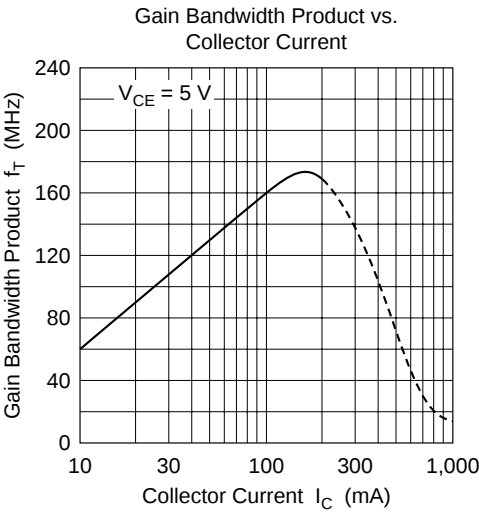
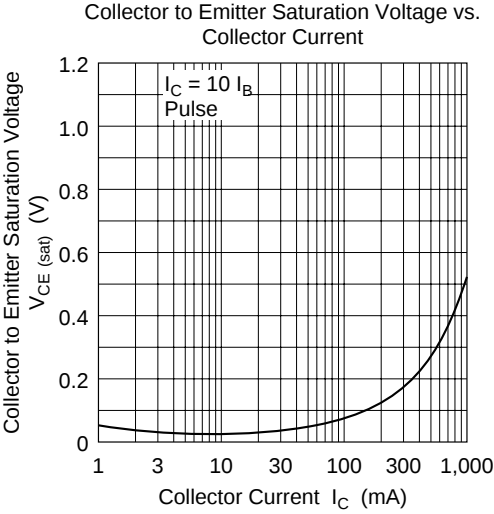
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	180	—	—	V	$I_C = 1$ mA, $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	120	—	—	V	$I_C = 10$ mA, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 1$ mA, $I_C = 0$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 160$ V, $I_E = 0$
DC current transfer ratio	h_{FE1}^{*1}	60	—	320		$V_{CE} = 5$ V, $I_C = 0.15$ A
	h_{FE2}	30	—	—		$V_{CE} = 5$ V, $I_C = 0.5$ A
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C = 0.5$ A, $I_B = 50$ mA, Pulse
Base to emitter voltage	V_{BE}	—	—	0.9	V	$V_{CE} = 5$ V, $I_C = 0.15$ A, Pulse

Note: 1. The 2SD1420 is grouped by h_{FE1} as follows.

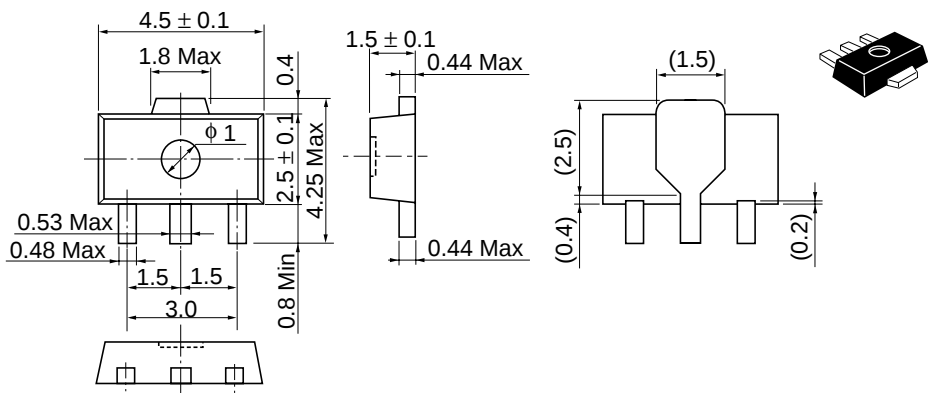
Mark	EA	EB	EC
h_{FE1}	60 to 120	100 to 200	160 to 320





Package Dimensions

As of January, 2001
Unit: mm



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

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