To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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

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2SD1366

Silicon NPN Epitaxial

RENESAS

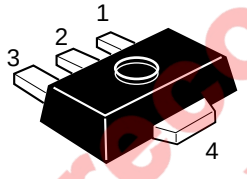
ADE-208-1145 (Z)
1st. Edition
Mar. 2001

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	$i_{C(peak)}$*1	1.5	A
Collector power dissipation	P_C*2	1	W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

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

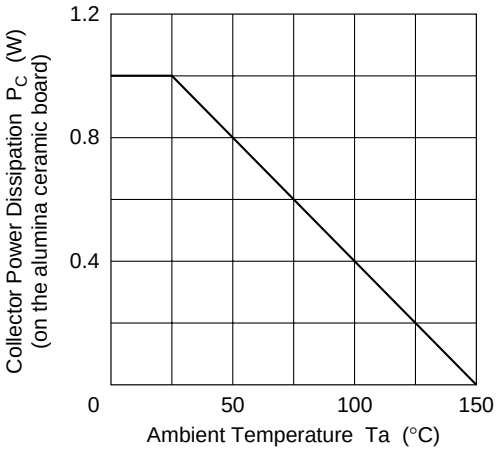
Electrical Characteristics (Ta = 25°C)

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

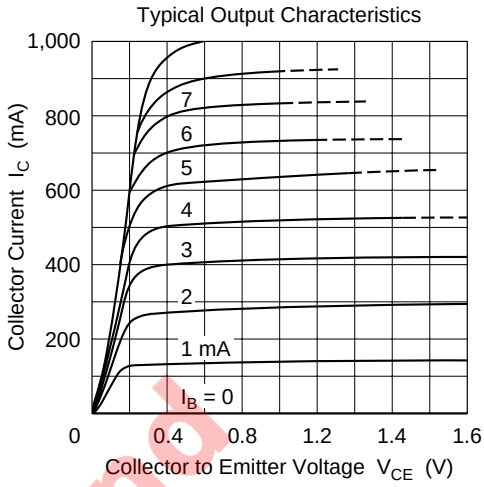
Note: 1. The 2SD1366 is grouped by h_{FE} as follows.

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

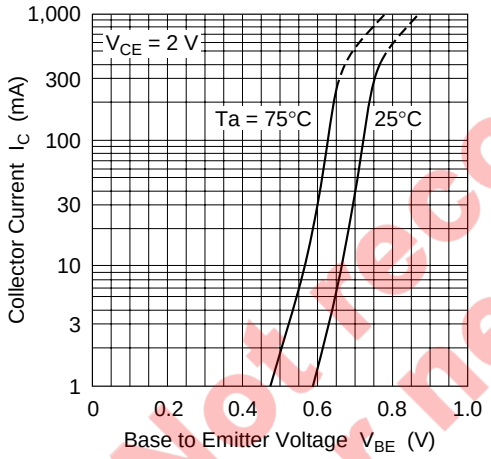
Maximum Collector Dissipation Curve



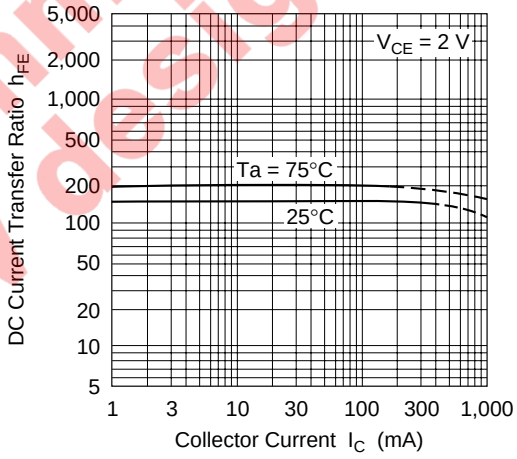
Typical Output Characteristics



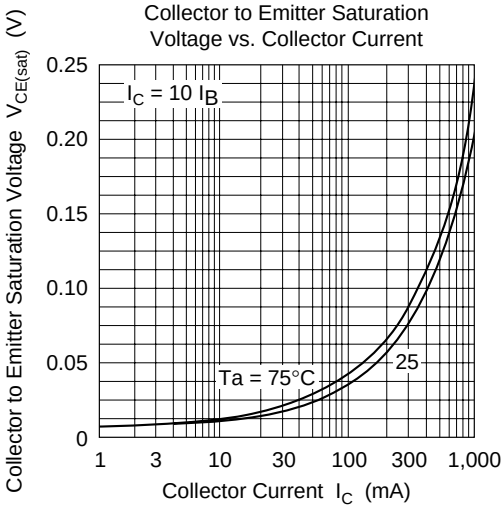
Typical Transfer Characteristics



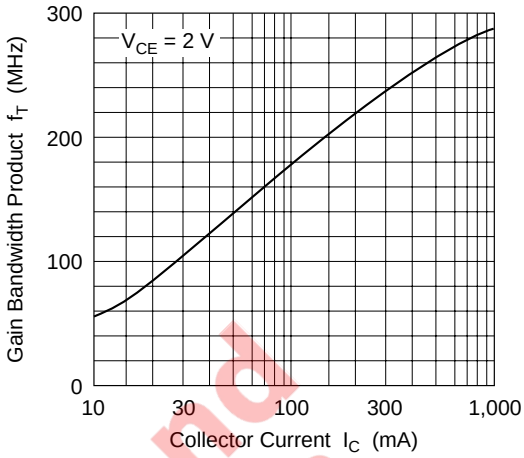
DC Current Transfer Ratio vs. Collector Current



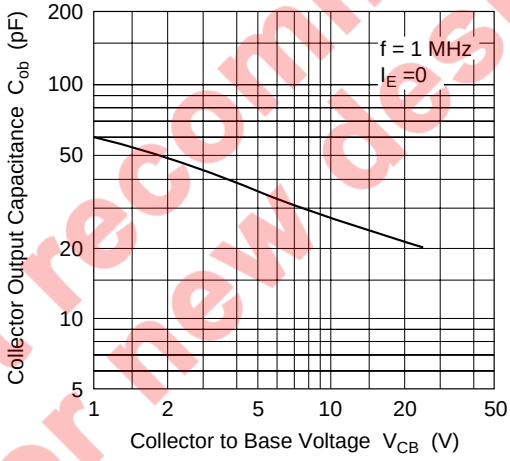
Collector to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current



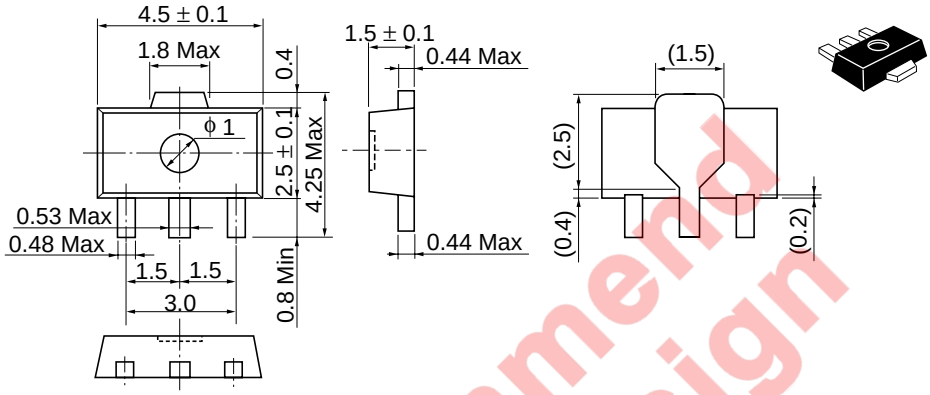
Collector Output Capacitance vs. Collector to Base Voltage



Package Dimensions

As of January, 2001

Unit: mm



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

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