2SD1420

Silicon NPN Epitaxial

RENESAS

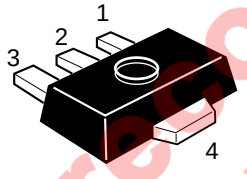
ADE-208-1151 (Z)
1st. Edition
Mar. 2001

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 ≤ 10 ms, Duty cycle ≤ 20%
2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

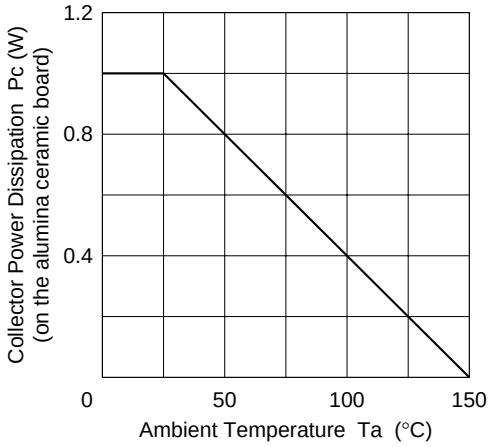
Electrical Characteristics (Ta = 25°C)

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} = ∞
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

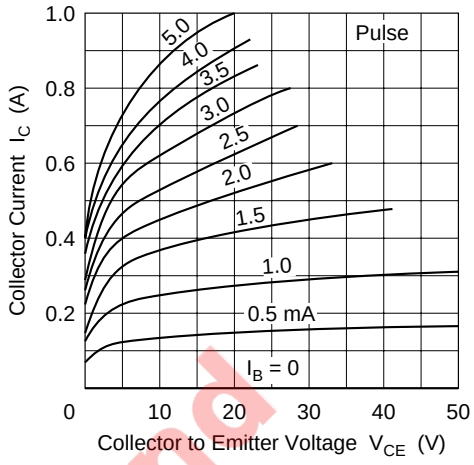
Note: 1. The 2SD1420 is grouped by h_{FE1} as follows.

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

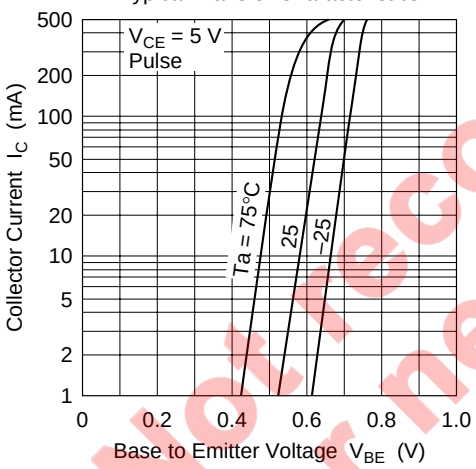
Maximum Collector Dissipation Curve



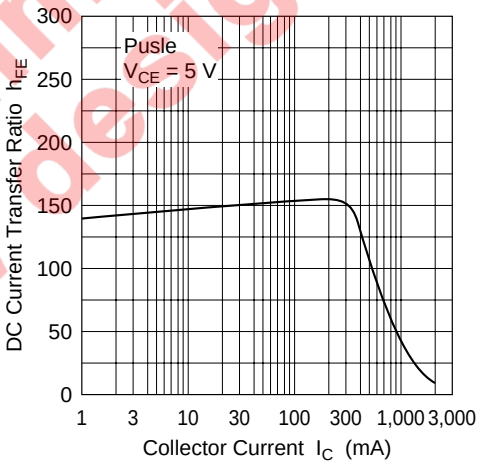
Typical Output Characteristics



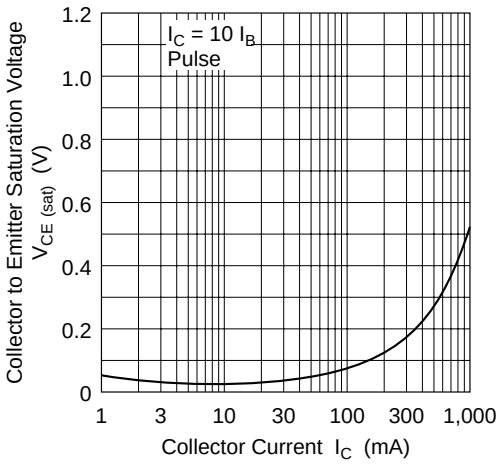
Typical Transfer Characteristics



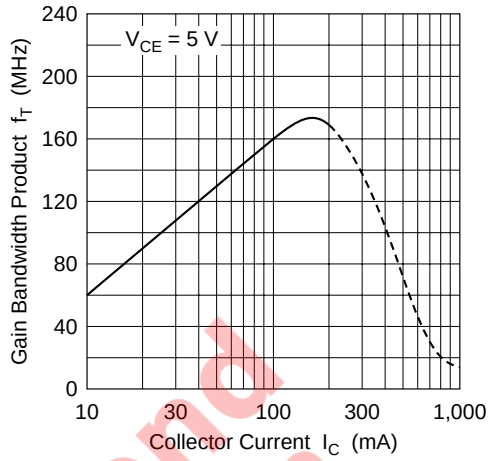
DC Current Transfer Ratio vs. Collector Current



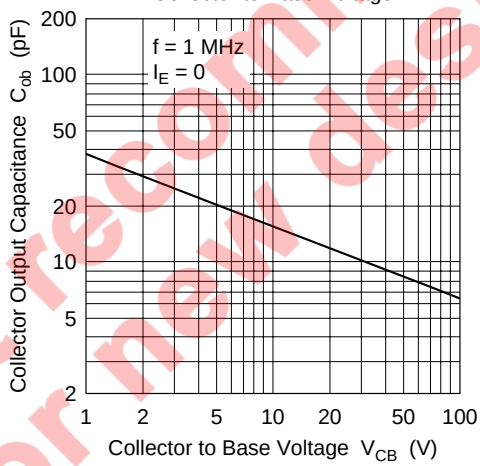
Collector to Emitter Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current



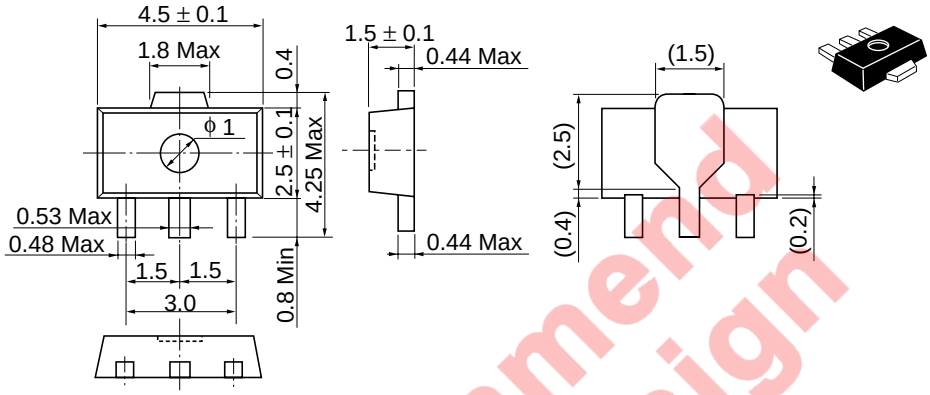
Collector Output Capacitance vs. Collector to Base Voltage



Package Dimensions

As of January, 2001

Unit: mm



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

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