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# 2SD1420

Silicon NPN Epitaxial

# HITACHI

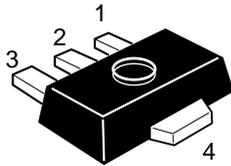
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## Application

Low frequency power amplifier

## Outline

UPAK



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

## 2SD1420

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

Item	Symbol	Rated	Unit
Collector to base voltage	V <sub>CBO</sub>	180	V
Collector to emitter voltage	V <sub>CEO</sub>	120	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	1.5	A
Collector peak current	i <sub>C(peak)</sub> *1	3	A
Collector power dissipation	P <sub>C</sub> *2	1	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

Notes: 1. PW ≤ 10 ms, Duty cycle ≤ 20%

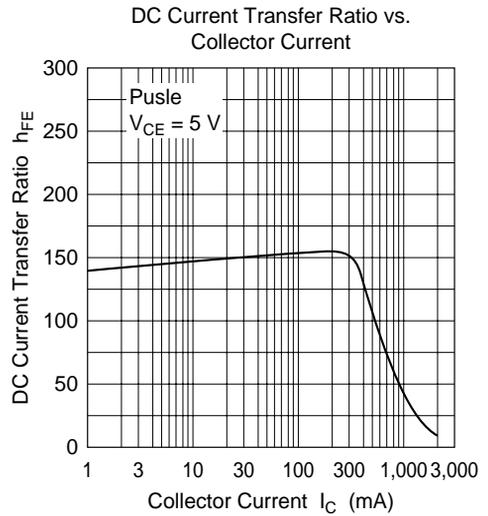
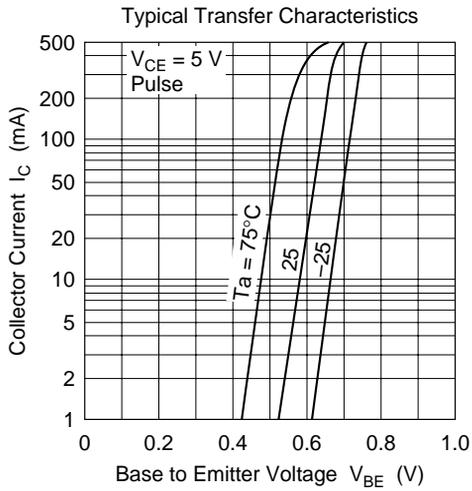
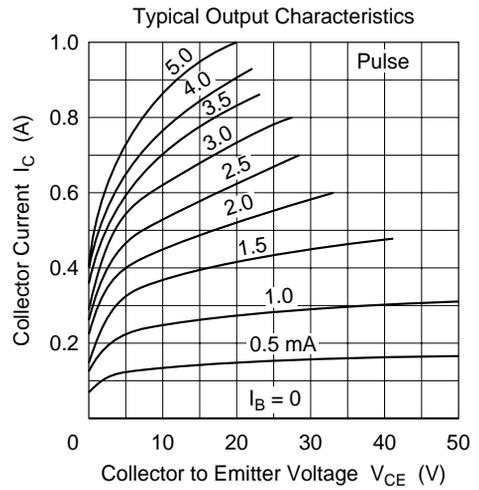
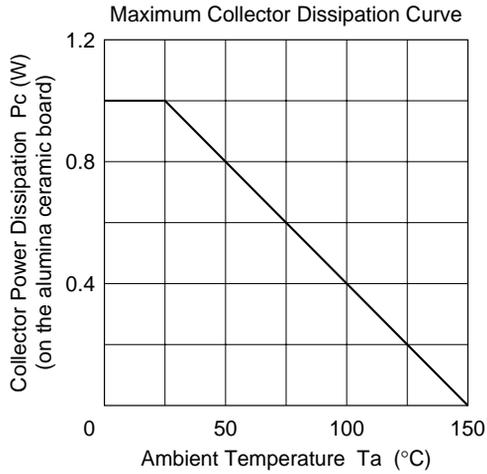
2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

### Electrical Characteristics (Ta = 25°C)

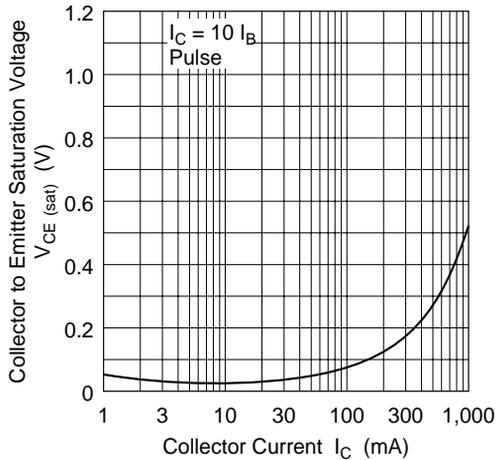
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	180	—	—	V	I <sub>C</sub> = 1 mA, I <sub>E</sub> = 0
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	120	—	—	V	I <sub>C</sub> = 10 mA, R <sub>BE</sub> = ∞
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	5	—	—	V	I <sub>E</sub> = 1 mA, I <sub>C</sub> = 0
Collector cutoff current	I <sub>CBO</sub>	—	—	10	μA	V <sub>CB</sub> = 160 V, I <sub>E</sub> = 0
DC current transfer ratio	h <sub>FE1</sub> *1	60	—	320		V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.15 A
	h <sub>FE2</sub>	30	—	—		V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.5 A
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	1.0	V	I <sub>C</sub> = 0.5 A, I <sub>B</sub> = 50 mA, Pulse voltage
Base to emitter voltage	V <sub>BE</sub>	—	—	0.9	V	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 0.15 A, Pulse

Note: 1. The 2SD1420 is grouped by h<sub>FE1</sub> as follows.

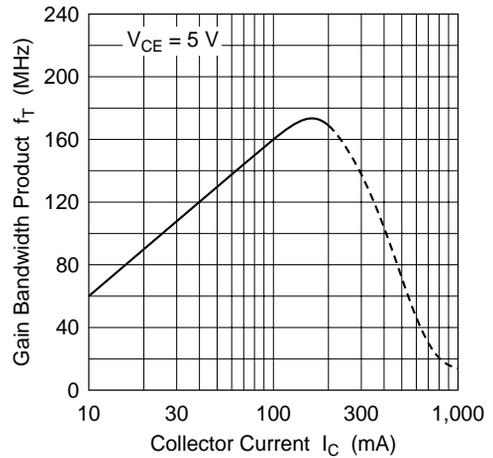
Mark	EA	EB	EC
h <sub>FE1</sub>	60 to 120	100 to 200	160 to 320



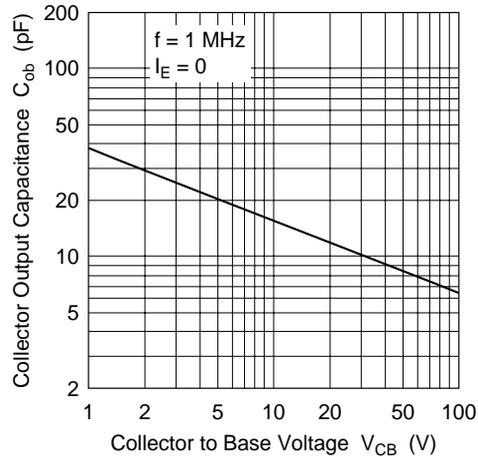
Collector to Emitter Saturation Voltage vs. Collector Current

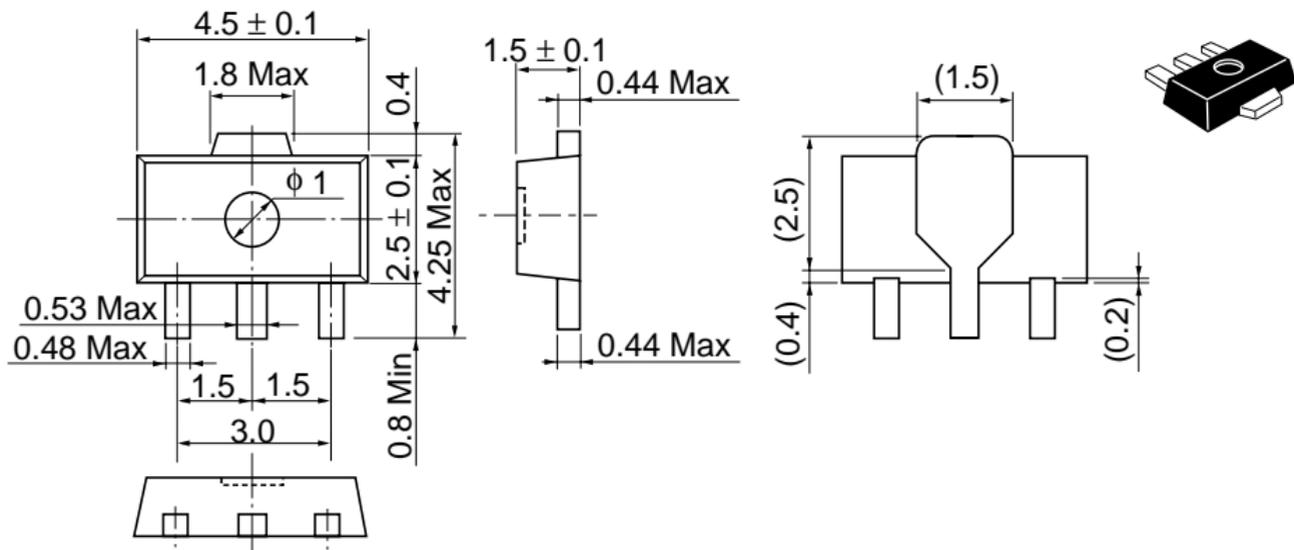


Gain Bandwidth Product vs. Collector Current



Collector Output Capacitance vs. Collector to Base Voltage





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

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