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# 2SD1418

Silicon NPN Epitaxial

# HITACHI

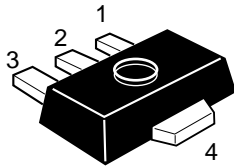
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## Application

- Low frequency power amplifier
- Complementary pair with 2SB1025

## Outline

UPAK



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

# 2SD1418

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

Item	Symbol	Rated	Unit
Collector to base voltage	V <sub>CBO</sub>	120	V
Collector to emitter voltage	V <sub>CEO</sub>	80	V
Emitter to base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	1	A
Collector peak current	i <sub>C(peak)</sub> *1	2	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)

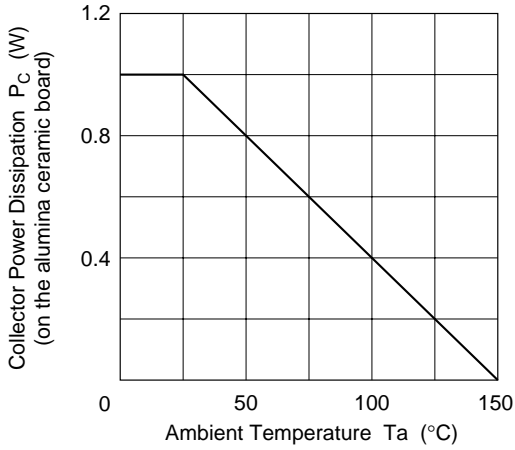
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	V <sub>(BR)CBO</sub>	120	—	—	V	I <sub>C</sub> = 10 μA, I <sub>E</sub> = 0
Collector to emitter breakdown voltage	V <sub>(BR)CEO</sub>	80	—	—	V	I <sub>C</sub> = 1 mA, R <sub>BE</sub> = ∞
Emitter to base breakdown voltage	V <sub>(BR)EBO</sub>	5	—	—	V	I <sub>E</sub> = 10 μA, I <sub>C</sub> = 0
Collector cutoff current	I <sub>CBO</sub>	—	—	10	μA	V <sub>CB</sub> = 100 V, I <sub>E</sub> = 0
DC current transfer ratio	h <sub>FE1</sub> *1	60	—	320		V <sub>EB</sub> = 5 V, I <sub>C</sub> = 150 mA*2
	h <sub>FE2</sub>	30	—	—		V <sub>CE</sub> = 5 V, I <sub>C</sub> = 500 mA*2
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	1	V	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA*2
Base to emitter voltage	V <sub>BE</sub>	—	—	1.5	V	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 150 mA*2
Gain bandwidth product	f <sub>T</sub>	—	140	—	MHz	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 150 mA*2
Collector output capacitance	C <sub>ob</sub>	—	12	—	pF	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1 MHz

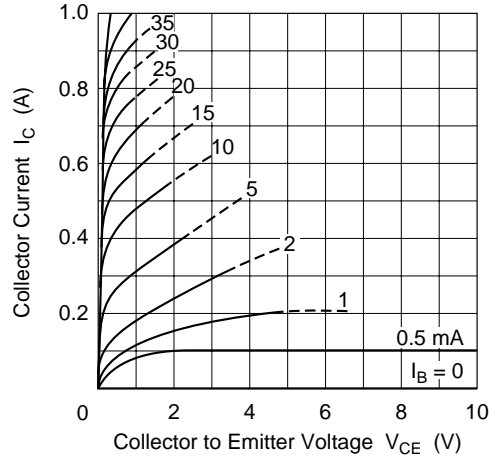
- Notes: 1. The 2SD1418 is grouped by h<sub>FE1</sub> as follows.  
2. Pulse test

Mark	DA	DB	DC
h <sub>FE1</sub>	60 to 120	100 to 200	160 to 320

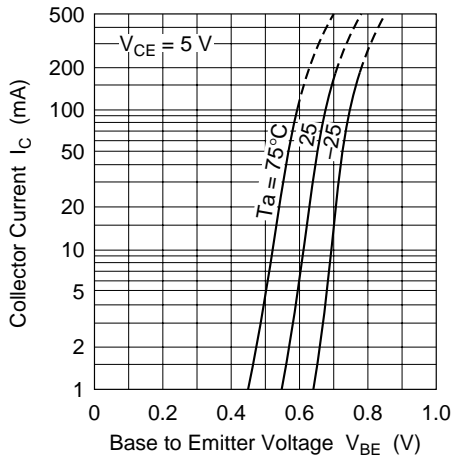
Maximum Collector Dissipation Curve



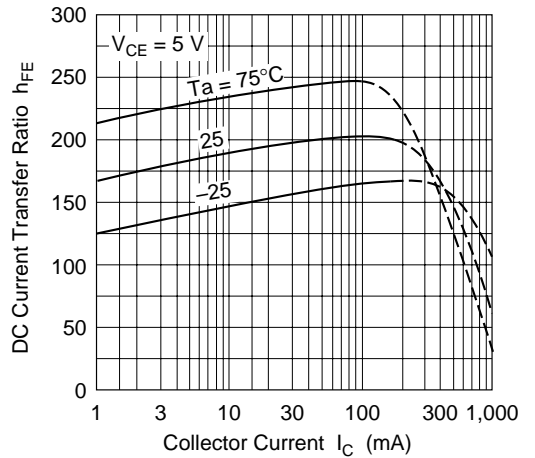
Typical Output Characteristics

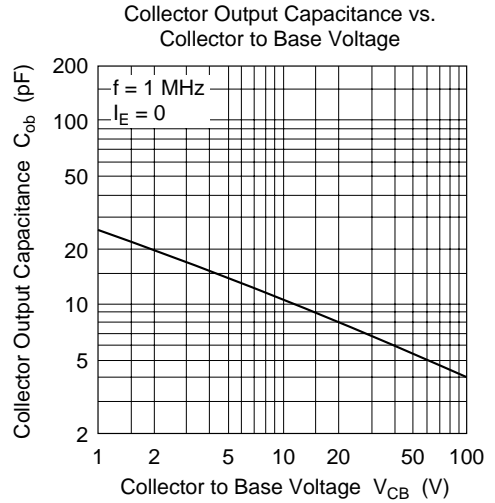
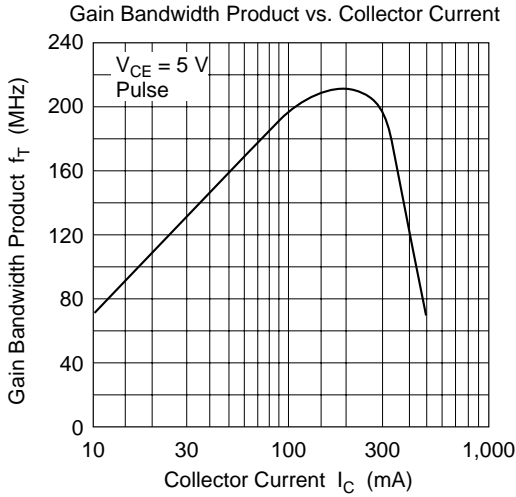
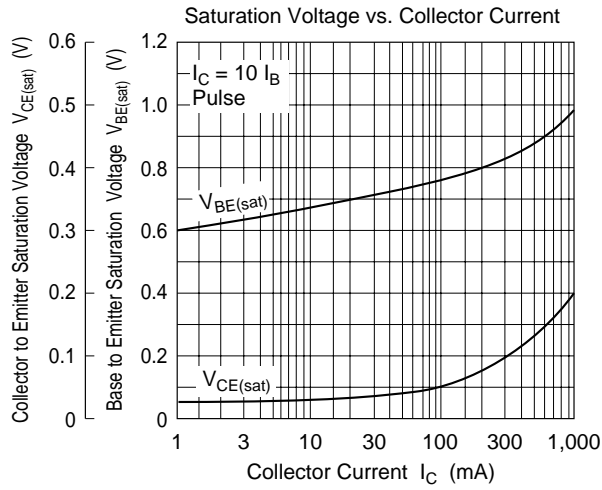


Typical Transfer Characteristics



DC Current Transfer Ratio vs. Collector Current







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

## Cautions

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## Hitachi, Ltd.

Semiconductor & Integrated Circuits.  
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan  
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL      North America      : <http://semiconductor.hitachi.com/>  
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## For further information write to:

Hitachi Semiconductor  
(America) Inc.  
179 East Tasman Drive,  
San Jose, CA 95134  
Tel: <1> (408) 433-1990  
Fax: <1> (408) 433-0223

Hitachi Europe GmbH  
Electronic components Group  
Dornacher Straße 3  
D-85622 Feldkirchen, Munich  
Germany  
Tel: <49> (89) 9 9180-0  
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.  
Electronic Components Group.  
Whitebrook Park  
Lower Cookham Road  
Maidenhead  
Berkshire SL6 8YA, United Kingdom  
Tel: <44> (1628) 585000  
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.  
16 Collyer Quay #20-00  
Hitachi Tower  
Singapore 049318  
Tel: 535-2100  
Fax: 535-1533

Hitachi Asia Ltd.  
Taipei Branch Office  
3F, Hung Kuo Building, No.167,  
Tun-Hwa North Road, Taipei (105)  
Tel: <886> (2) 2718-3666  
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.  
Group III (Electronic Components)  
7/F., North Tower, World Finance Centre,  
Harbour City, Canton Road, Tsim Sha Tsui,  
Kowloon, Hong Kong  
Tel: <852> (2) 735 9218  
Fax: <852> (2) 730 0281  
Telex: 40815 HITEC HX

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