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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	Ratings	Unit
Collector to base voltage	$V_{CBO}$	120	V
Collector to emitter voltage	$V_{CEO}$	80	V
Emitter to base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	1	A
Collector peak current	$i_{C(\text{peak})}^{*1}$	2	A
Collector power dissipation	$P_C^{*2}$	1	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{\text{stg}}$	-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)

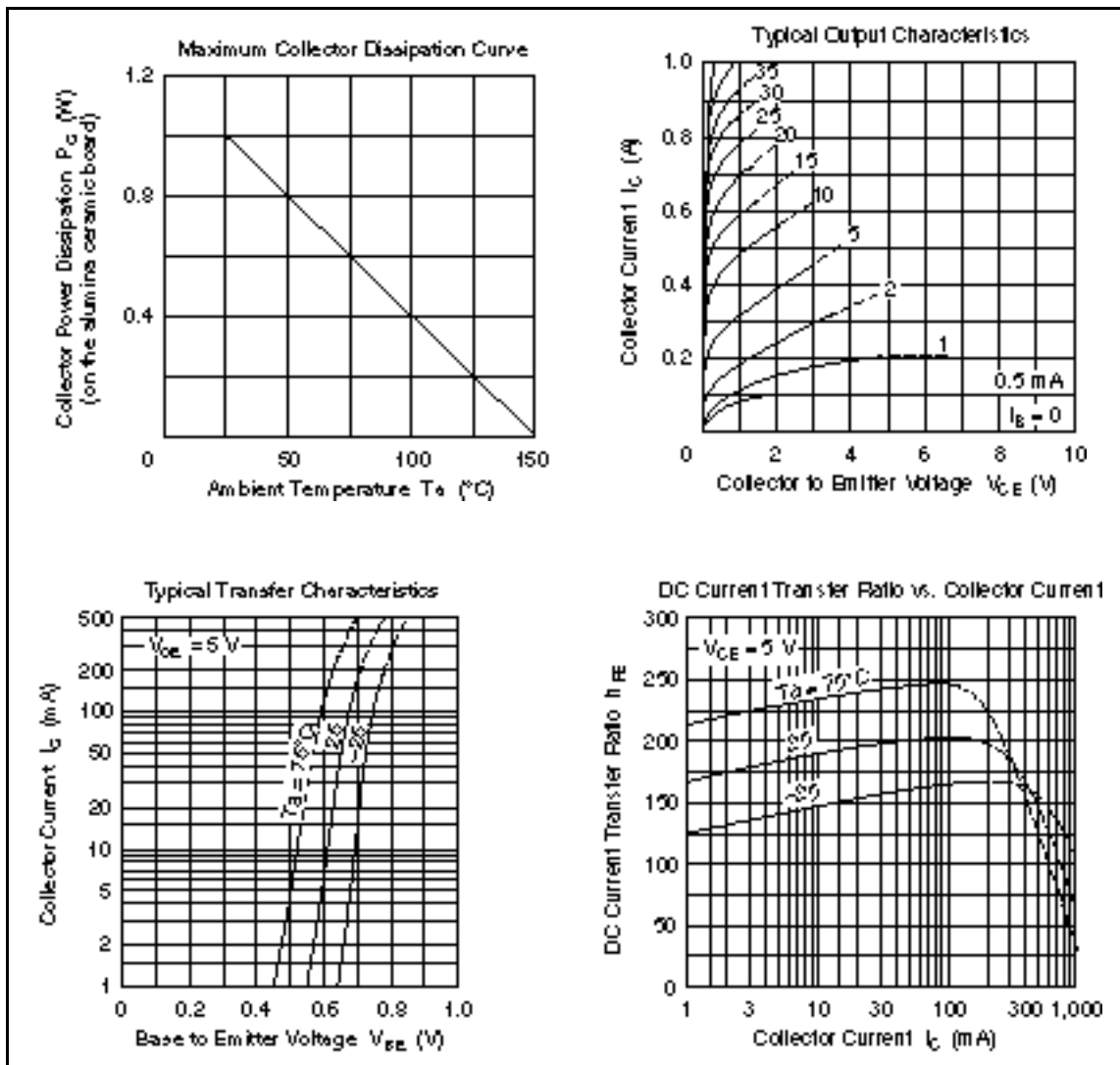
### Electrical Characteristics (Ta = 25°C)

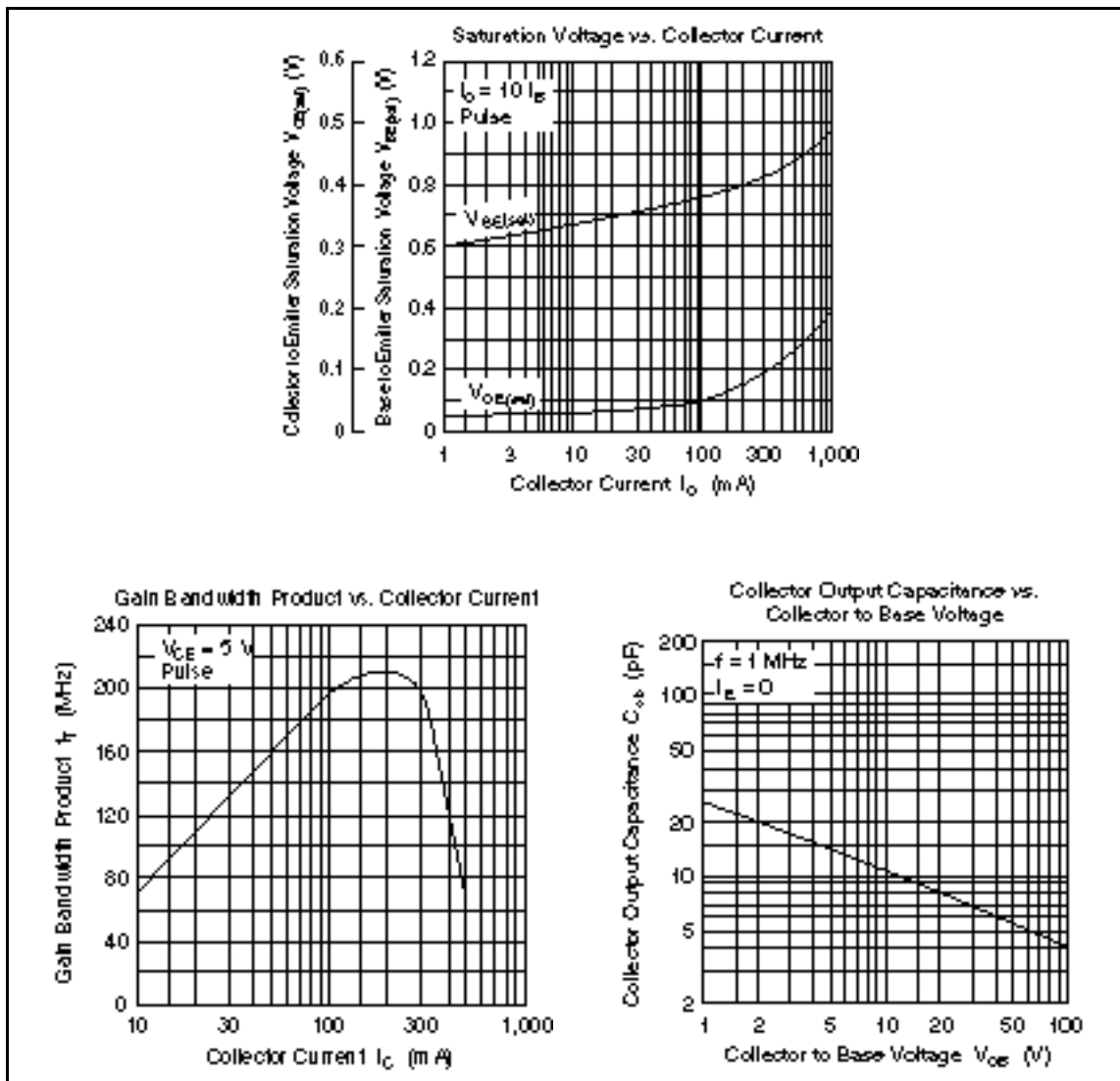
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	120	—	—	V	$I_C = 10 \mu\text{A}$ , $I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	$I_C = 1 \text{ mA}$ , $R_{BE} =$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu\text{A}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	10	$\mu\text{A}$	$V_{CB} = 100 \text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	60	—	320		$V_{EB} = 5 \text{ V}$ , $I_C = 150 \text{ mA}^{*2}$
	$h_{FE2}$	30	—	—		$V_{CE} = 5 \text{ V}$ , $I_C = 500 \text{ mA}^{*2}$
Collector to emitter saturation voltage	$V_{CE(\text{sat})}$	—	—	1	V	$I_C = 500 \text{ mA}$ , $I_B = 50 \text{ mA}^{*2}$
Base to emitter voltage	$V_{BE}$	—	—	1.5	V	$V_{CE} = 5 \text{ V}$ , $I_C = 150 \text{ mA}^{*2}$
Gain bandwidth product	$f_T$	—	140	—	MHz	$V_{CE} = 5 \text{ V}$ , $I_C = 150 \text{ mA}^{*2}$
Collector output capacitance	$C_{ob}$	—	12	—	pF	$V_{CB} = 10 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

Notes: 1. The 2SD1418 is grouped by  $h_{FE1}$  as follows.

2. Pulse test

Mark	DA	DB	DC
$h_{FE1}$	60 to 120	100 to 200	160 to 320





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