
2SD1418

Silicon NPN Epitaxial

HITACHI

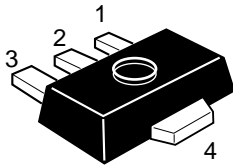
ADE-208-1149 (Z)
1st. Edition
Mar. 2001

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	$i_{C(peak)}^{*1}$	2	A
Collector power dissipation	P_C^{*2}	1	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10$ ms, Duty cycle $\leq 20\%$

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

Electrical Characteristics (Ta = 25°C)

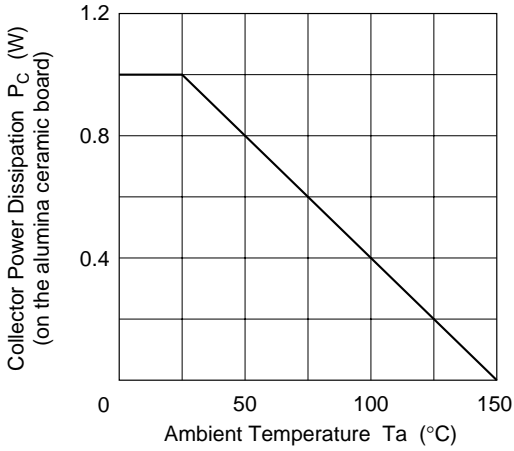
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	120	—	—	V	$I_C = 10 \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	$I_C = 1$ mA, $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10 \mu A, I_C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

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

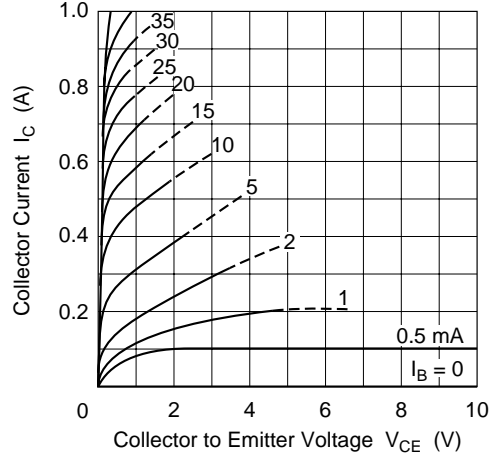
2. Pulse test

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

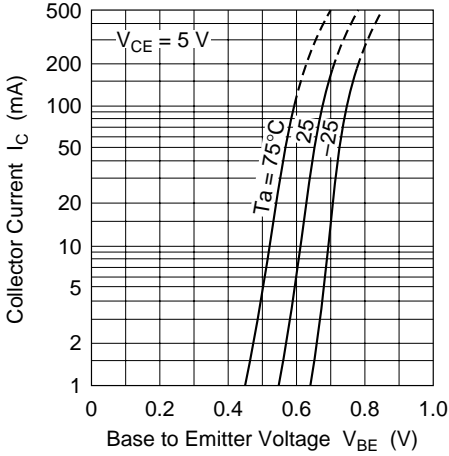
Maximum Collector Dissipation Curve



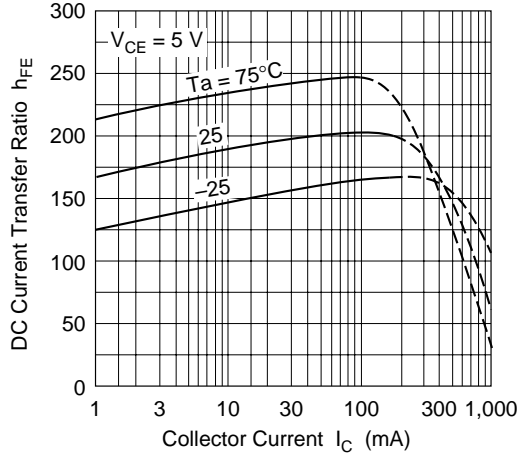
Typical Output Characteristics

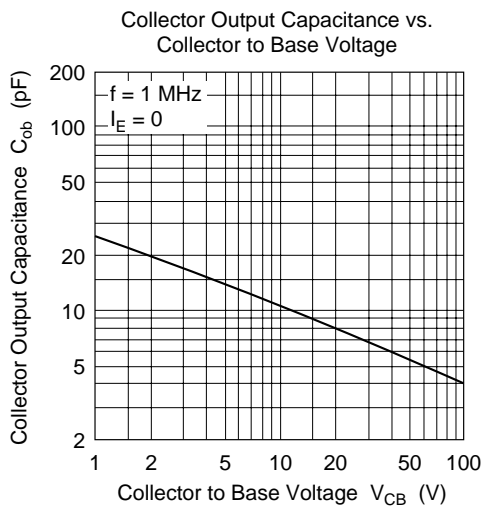
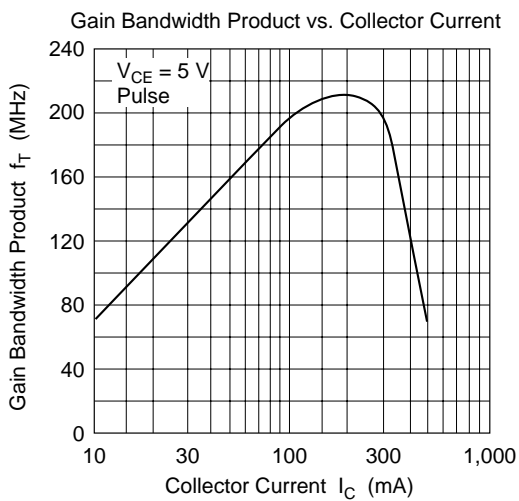
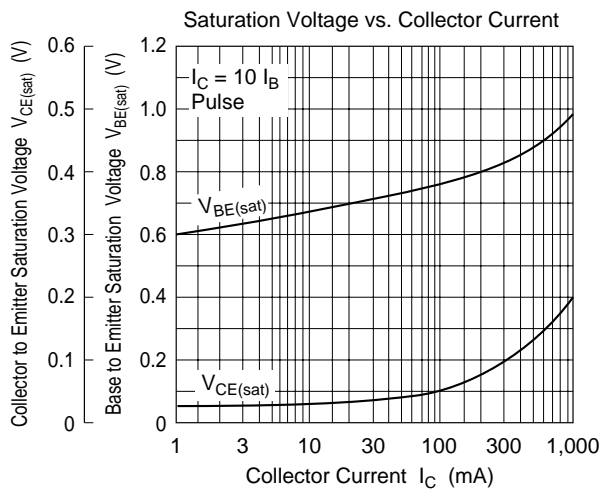


Typical Transfer Characteristics



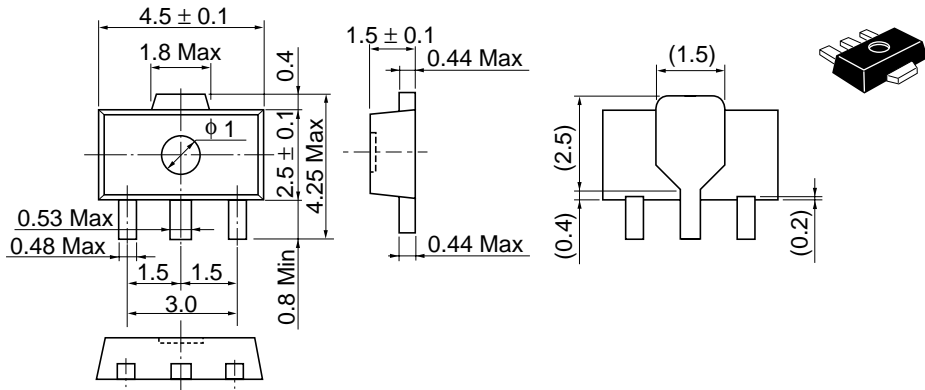
DC Current Transfer Ratio vs. Collector Current





Package Dimensions

As of January, 2001
Unit: mm



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

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