
2SD1418

Silicon NPN Epitaxial

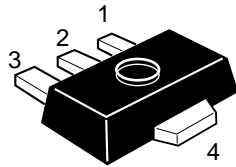
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Application

- 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_{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)

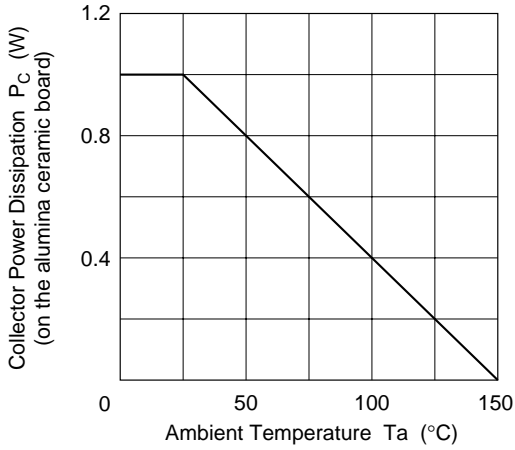
Electrical Characteristics (Ta = 25°C)

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

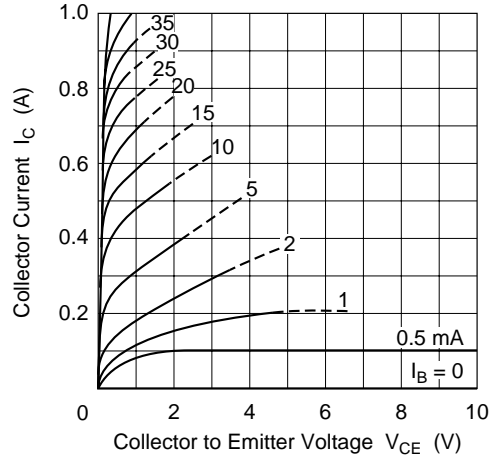
- Notes: 1. The 2SD1418 is grouped by h_{FE1} as follows.
2. Pulse test

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

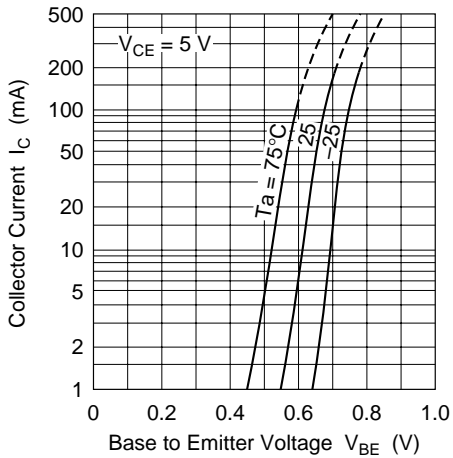
Maximum Collector Dissipation Curve



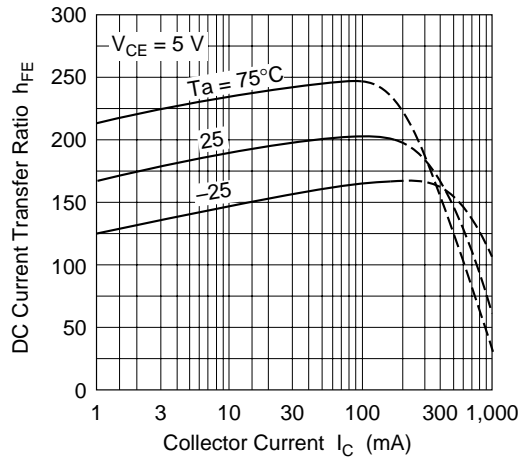
Typical Output Characteristics

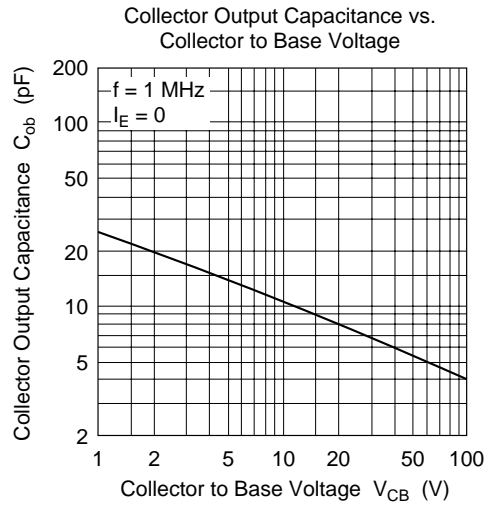
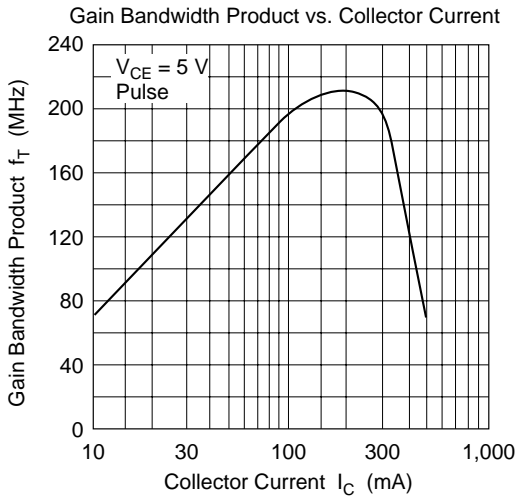
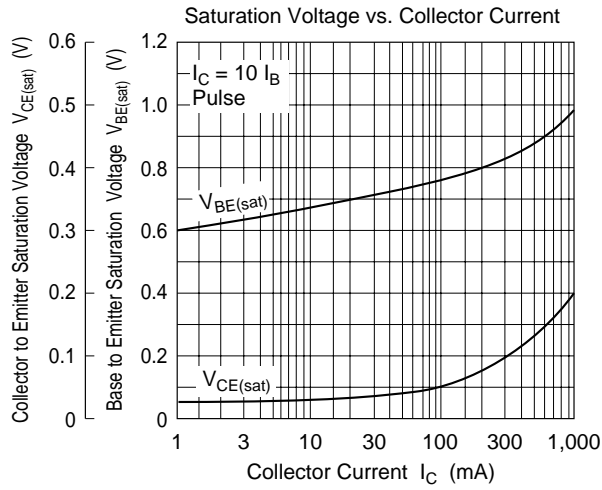


Typical Transfer Characteristics



DC Current Transfer Ratio vs. Collector Current







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

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