

2SD1418

Silicon NPN Epitaxial

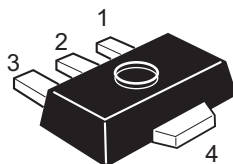
REJ03G0787-0200
(Previous ADE-208-1149)
Rev.2.00
Aug.10.2005

Application

- Low frequency power amplifier
- Complementary pair with 2SB1025

Outline

RENESAS Package code: PLZZ0004CA-A
(Package name: UPAK[®])



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

*UPAK is a trademark of Renesas Technology Corp.

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)

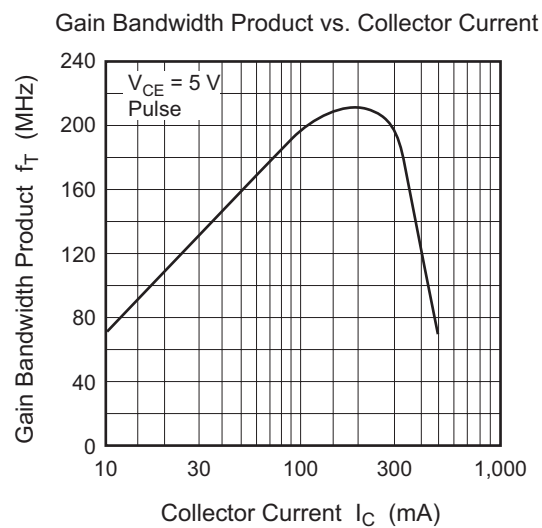
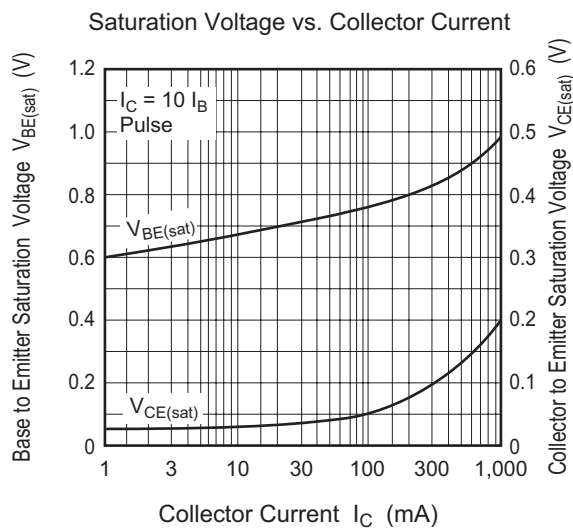
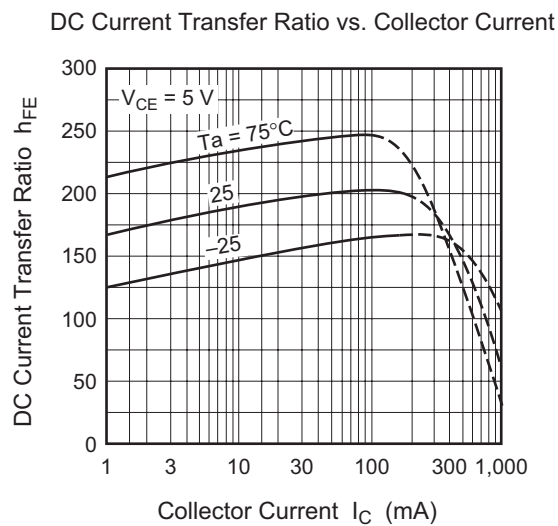
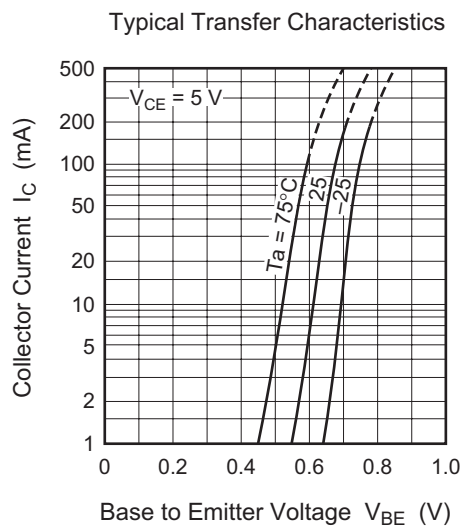
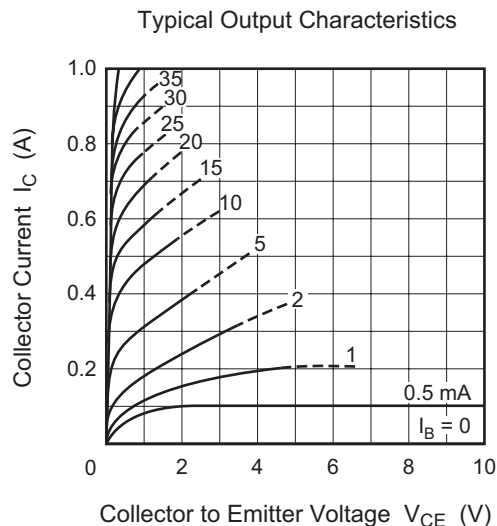
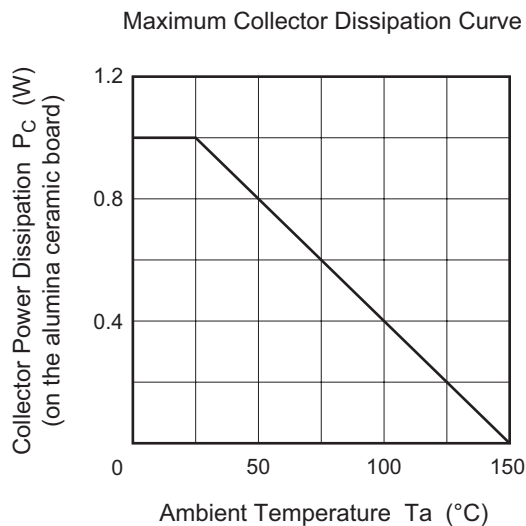
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	120	—	—	V	$I_C = 10\ \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	$I_C = 1\ mA, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	$I_E = 10\ \mu A, I_C = 0$
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	$V_{CB} = 10\ V, I_E = 0, f = 1\ MHz$

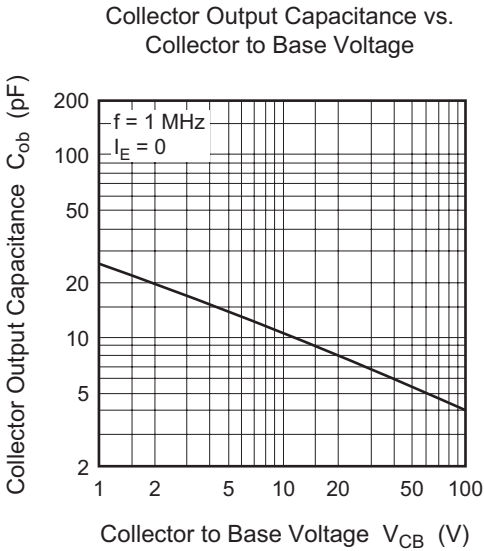
Notes: 1. The 2SD1418 is grouped by h_{FE1} as follows.

2. Pulse test

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

Main Characteristics





Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]	Unit: mm
SC-62	PLZZ0004CA-A	UPAK / UPAKV	0.050g	

The drawing shows three views of the package:

- Top View:** Overall width is 4.5 ± 0.1 mm. The central circular feature has a diameter of $\phi 1$ mm. The distance from the center to the side leads is 1.8 Max mm. The total width of the leads is 3.0 mm, with individual lead widths of 1.5 mm. The distance from the center to the bottom leads is 2.5 ± 0.1 mm. The lead thickness is 0.53 Max mm and 0.48 Max mm.
- Side View:** The package height is 1.5 ± 0.1 mm. The lead height is 0.44 Max mm. The distance from the center to the side leads is 0.44 Max mm.
- End View:** The package width is 1.5 mm. The lead width is 0.4 mm (labeled as (0.4)). The distance from the center to the side leads is 2.5 mm (labeled as (2.5)). The lead thickness is 0.2 mm (labeled as (0.2)).

Ordering Information

Part Name	Quantity	Shipping Container
2SD1418DATR-E 2SD1418DBTR-E 2SD1418DCTR-E	1000	ϕ 178 mm Reel, 12 mm Emboss Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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