To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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2SD1418

Silicon NPN Epitaxial

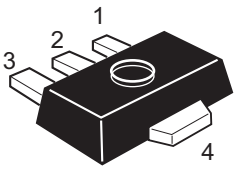
REJ03G0787-0200
(Previous ADE-208-1149)
Rev.2.00
Aug.10.2005

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	Tj	150	°C
Storage temperature	Tstg	–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)

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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 µA, I_E = 0
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	80	—	—	V	I_C = 1 mA, R_{BE} = ∞
Emitter to base breakdown voltage	$V_{(BR)EBO}$	5	—	—	V	I_E = 10 µA, 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	Cob	—	12	—	pF	V_{CB} = 10 V, I_E = 0, f = 1 MHz

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

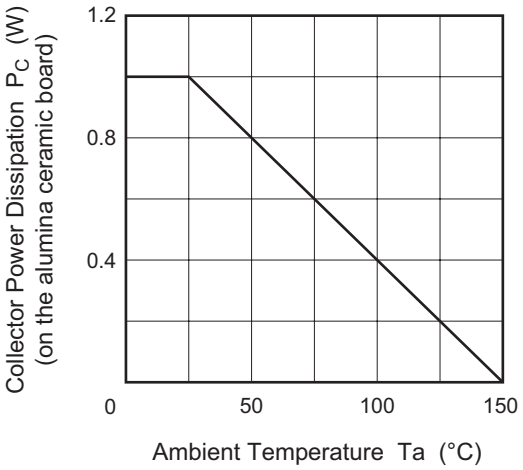
2. Pulse test

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

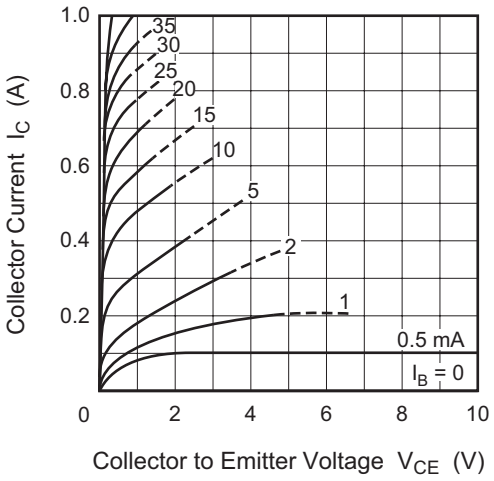
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Main Characteristics

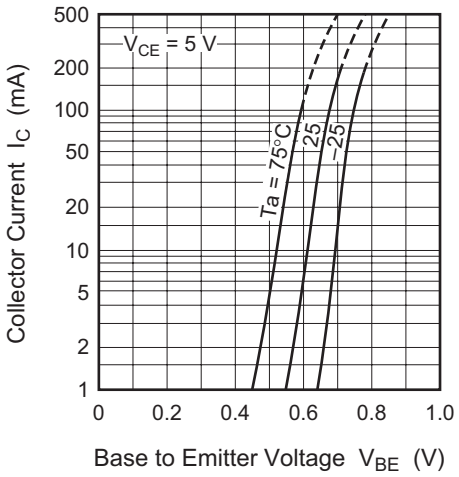
Maximum Collector Dissipation Curve



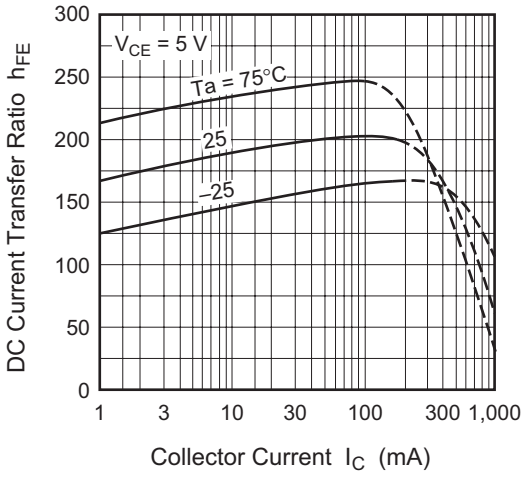
Typical Output Characteristics



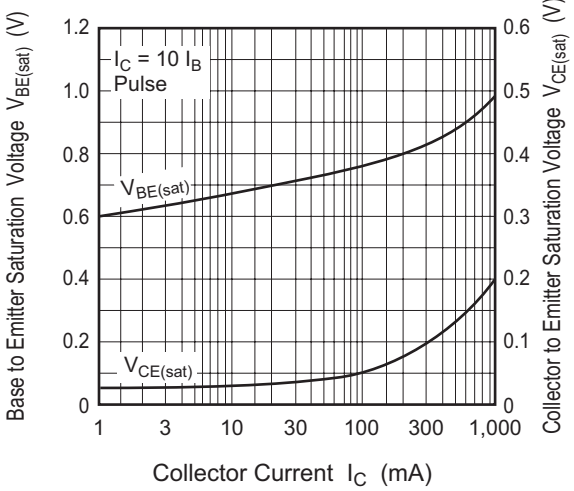
Typical Transfer Characteristics



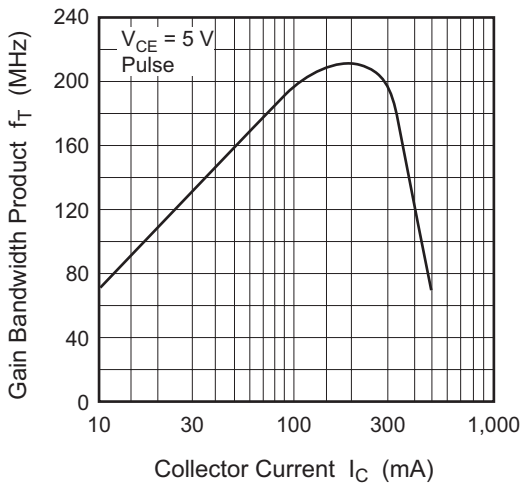
DC Current Transfer Ratio vs. Collector Current



Saturation Voltage vs. Collector Current

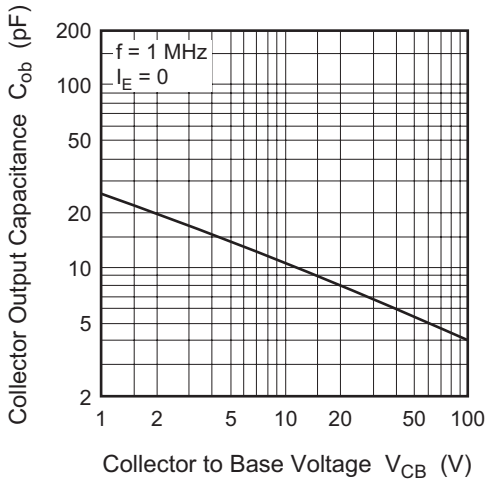


Gain Bandwidth Product vs. Collector Current



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Collector Output Capacitance vs.
Collector to Base Voltage

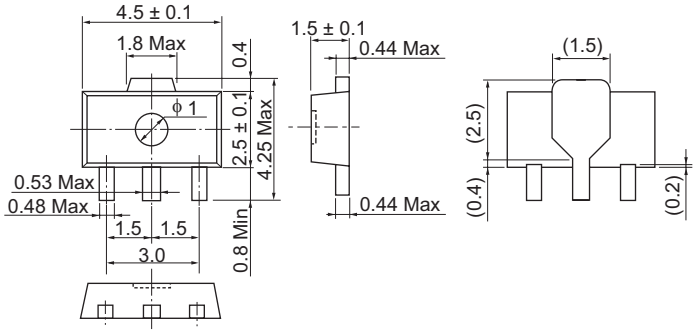


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Package Dimensions

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

Unit: mm



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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