

## 2SB1025

Silicon PNP Epitaxial

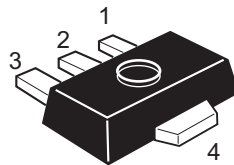
REJ03G0661-0200  
(Previous ADE-208-1036)  
Rev.2.00  
Aug.10.2005

### Application

- Low frequency power amplifier
- Complementary pair with 2SD1418

### Outline

RENESAS Package code: PLZZ0004CA-A  
(Package name: UPAK<sup>®</sup>)



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 × 20 × 0.7 mm)

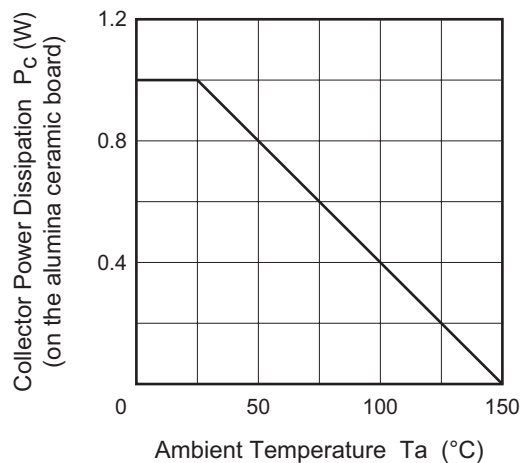
## Electrical Characteristics

(Ta = 25°C)

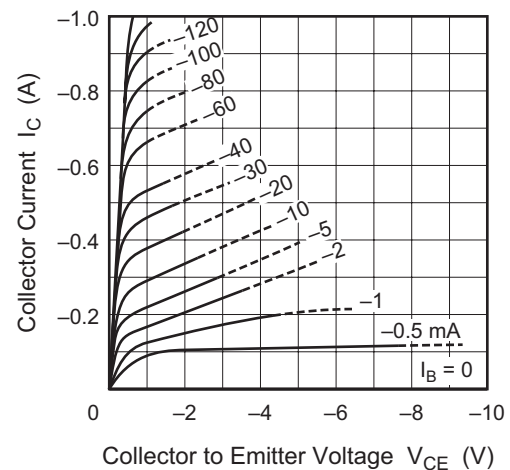
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to base breakdown voltage	$V_{(BR)CBO}$	-120	—	—	V	$I_C = -10\ \mu A, I_E = 0$
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-80	—	—	V	$I_C = -1\ mA, R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10\ \mu A, I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-10	$\mu A$	$V_{CB} = -100\ V, I_E = 0$
DC current transfer ratio	$h_{FE1}$	100	—	200		$V_{CE} = -5\ V, I_C = -150\ mA$
	$h_{FE2}$	30	—	—		$V_{CE} = -5\ V,$ $I_C = -500\ mA$ (Pulse test)
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-1	V	$I_C = -500\ mA,$ $I_B = -50\ mA$ (Pulse test)
Base to emitter voltage	$V_{BE}$	—	—	-0.9	V	$V_{CE} = -5\ V, I_C = -150\ mA$
Gain bandwidth product	$f_T$	—	140	—	MHz	$V_{CE} = -5\ V, I_C = -150\ mA$
Collector output capacitance	$C_{ob}$	—	20	—	pF	$V_{CB} = -10\ V, I_E = 0,$ $f = 1\ MHz$

## Main Characteristics

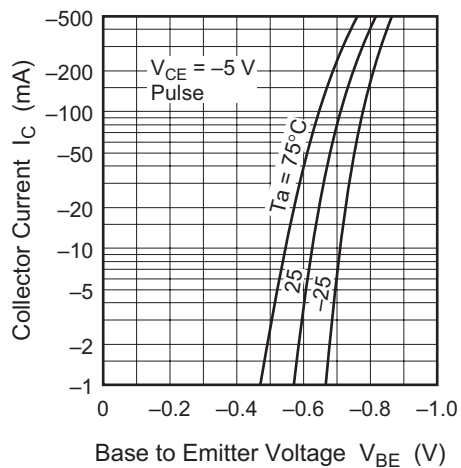
Maximum Collector Dissipation Curve



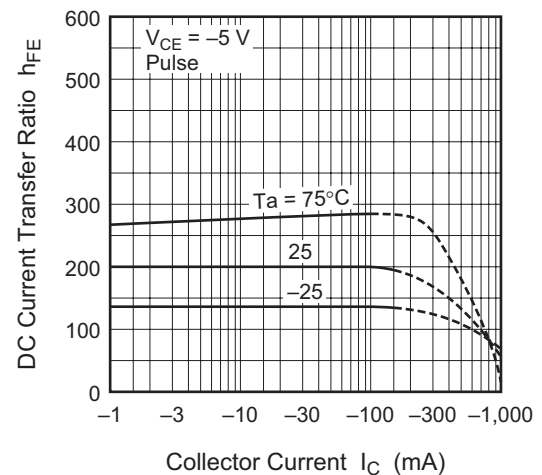
Typical Output Characteristics



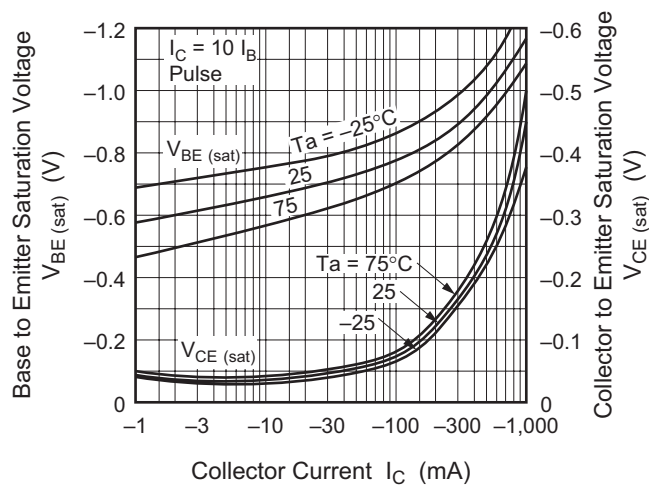
Typical Output Characteristics



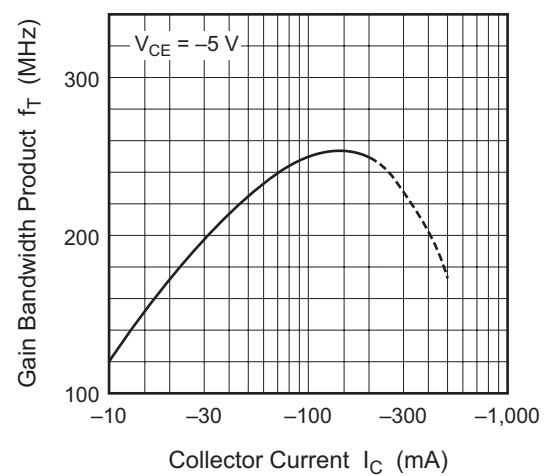
DC Current Transfer Ratio vs. Collector Current

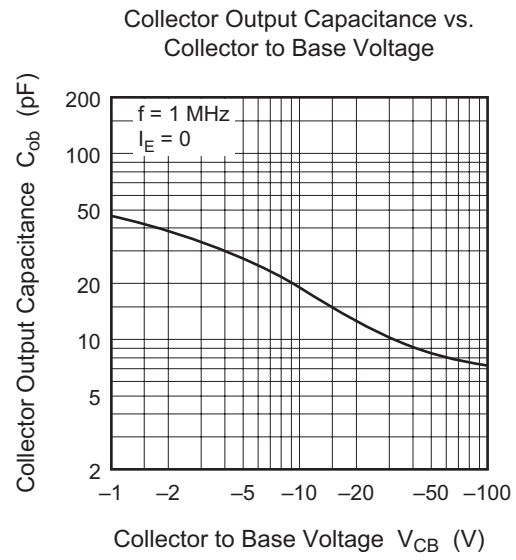


Saturation Voltage vs. Collector Current



Gain Bandwidth Product vs. Collector Current





## 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: a top view, a side view, and an end view. The top view shows a rectangular package with a central circular feature of diameter  $\phi 1$ . Dimensions include a width of  $4.5 \pm 0.1$  mm, a length of  $1.8$  Max mm, a thickness of  $0.4$  mm, and a central feature diameter of  $\phi 1$ . The side view shows a height of  $1.5 \pm 0.1$  mm and a width of  $0.44$  Max mm. The end view shows a width of  $1.5$  mm and a height of  $0.44$  Max mm. Other dimensions include  $0.53$  Max mm,  $0.48$  Max mm,  $1.5$  mm,  $3.0$  mm,  $0.8$  Min mm,  $2.5 \pm 0.1$  mm, and  $4.25$  Max mm.

## Ordering Information

Part Name	Quantity	Shipping Container
2SB1025DJTL-E	1000	$\phi$ 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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