

# 2SD667, 2SD667A

Silicon NPN Epitaxial

REJ03G0769-0200  
 (Previous ADE-208-1137)  
 Rev.2.00  
 Aug.10.2005

## Application

- Low frequency power amplifier
- Complementary pair with 2SB647/A

## Outline

RENESAS Package code: PRSS0003DC-A  
 (Package name: TO-92 Mod)



1. Emitter
2. Collector
3. Base

## Absolute Maximum Ratings

(Ta = 25°C)

| Item                         | Symbol        | 2SD667      | 2SD667A     | Unit |
|------------------------------|---------------|-------------|-------------|------|
| Collector to base voltage    | $V_{CBO}$     | 120         | 120         | V    |
| Collector to emitter voltage | $V_{CEO}$     | 80          | 100         | V    |
| Emitter to base voltage      | $V_{EBO}$     | 5           | 5           | V    |
| Collector current            | $I_C$         | 1           | 1           | A    |
| Collector peak current       | $i_{C(peak)}$ | 2           | 2           | A    |
| Collector power dissipation  | $P_C$         | 0.9         | 0.9         | W    |
| Junction temperature         | $T_j$         | 150         | 150         | °C   |
| Storage temperature          | $T_{stg}$     | -55 to +150 | -50 to +150 | °C   |

## Electrical Characteristics

(Ta = 25°C)

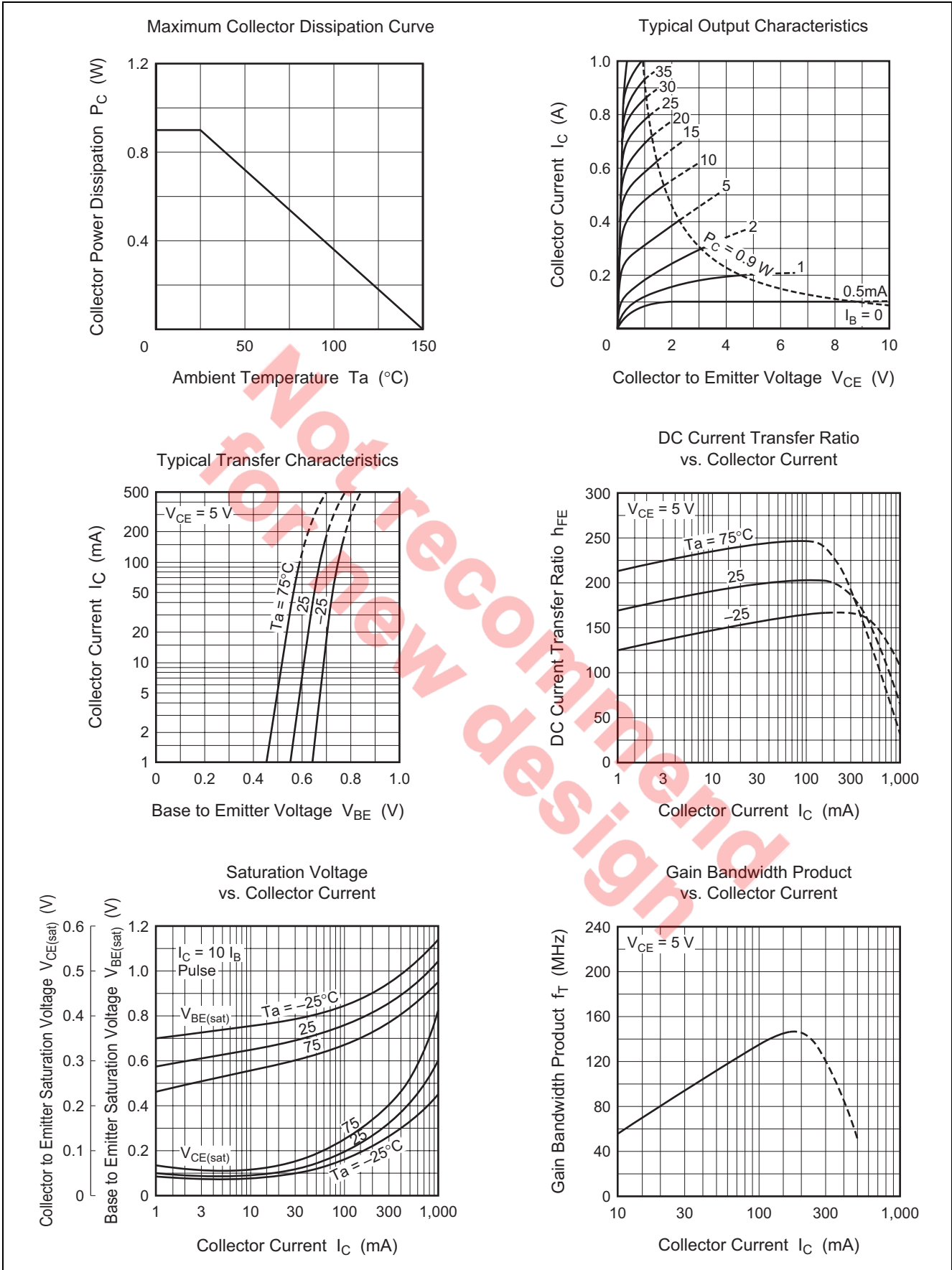
| Item                                    | Symbol         | 2SD667 |     |     | 2SD667A |     |     | Unit    | Test conditions                                     |
|---|----------------|--------|-----|-----|---------|-----|-----|---------|---|
|   |                | Min    | Typ | Max | Min     | Typ | Max |         |   |
| Collector to base breakdown voltage     | $V_{(BR)CBO}$  | 120    | —   | —   | 120     | —   | —   | V       | $I_C = 10 \mu A, I_E = 0$                           |
| Collector to emitter breakdown voltage  | $V_{(BR)CEO}$  | 80     | —   | —   | 100     | —   | —   | V       | $I_C = 1 \text{ mA}, R_{BE} = \infty$               |
| Emitter to base breakdown voltage       | $V_{(BR)EBO}$  | 5      | —   | —   | 5       | —   | —   | V       | $I_E = 10 \mu A, I_C = 0$                           |
| Collector cutoff current                | $I_{CBO}$      | —      | —   | 10  | —       | —   | 10  | $\mu A$ | $V_{CB} = 100 \text{ V}, I_E = 0$                   |
| DC current transfer ratio               | $h_{FE1}^{*1}$ | 60     | —   | 320 | 60      | —   | 200 |         | $V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*2}$   |
|   | $h_{FE2}$      | 30     | —   | —   | 30      | —   | —   |         | $V_{CE} = 5 \text{ V}, I_C = 500 \text{ mA}^{*2}$   |
| Collector to emitter saturation voltage | $V_{CE(sat)}$  | —      | —   | 1   | —       | —   | 1   | V       | $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}^{*2}$    |
| Base to emitter voltage                 | $V_{BE}$       | —      | —   | 1.5 | —       | —   | 1.5 | V       | $V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*2}$   |
| Gain bandwidth product                  | $f_T$          | —      | 140 | —   | —       | 140 | —   | MHz     | $V_{CE} = 5 \text{ V}, I_C = 150 \text{ mA}^{*2}$   |
| Collector output capacitance            | $C_{ob}$       | —      | 12  | —   | —       | 12  | —   | pF      | $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ |

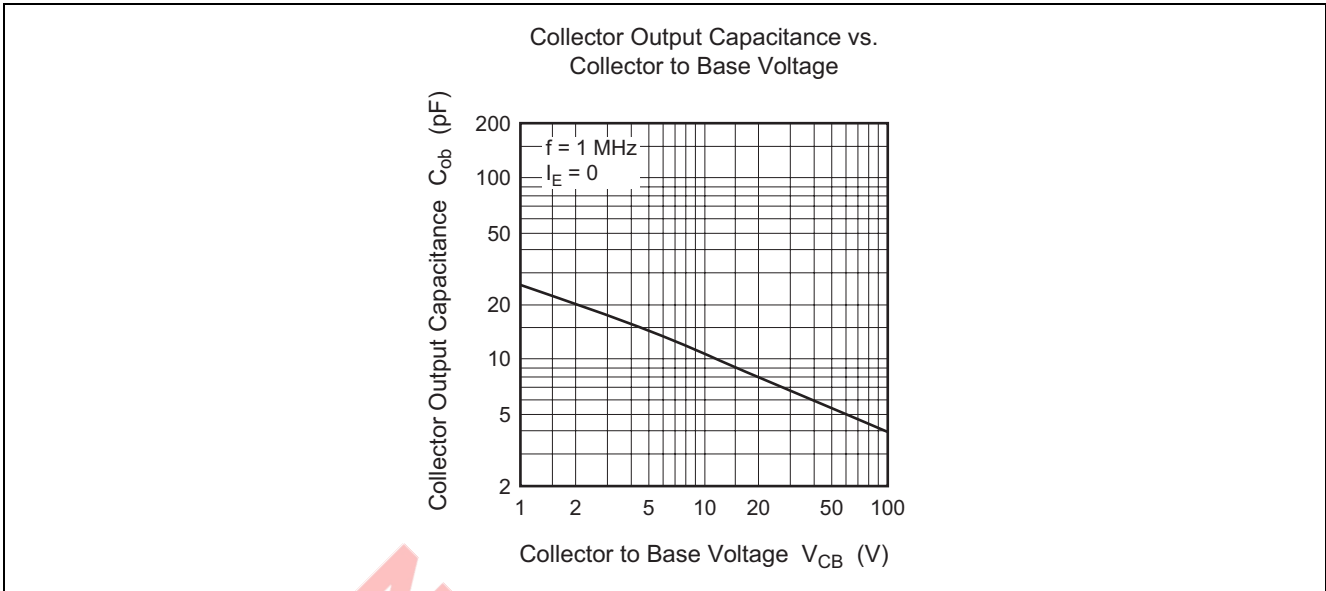
Notes: 1. The 2SD667 and 2SD667A are grouped by  $h_{FE1}$  as follows.

2. Pulse test

|         | B         | C          | D          |
|---------|-----------|------------|------------|
| 2SD667  | 60 to 120 | 100 to 200 | 160 to 320 |
| 2SD667A | 60 to 120 | 100 to 200 |            |

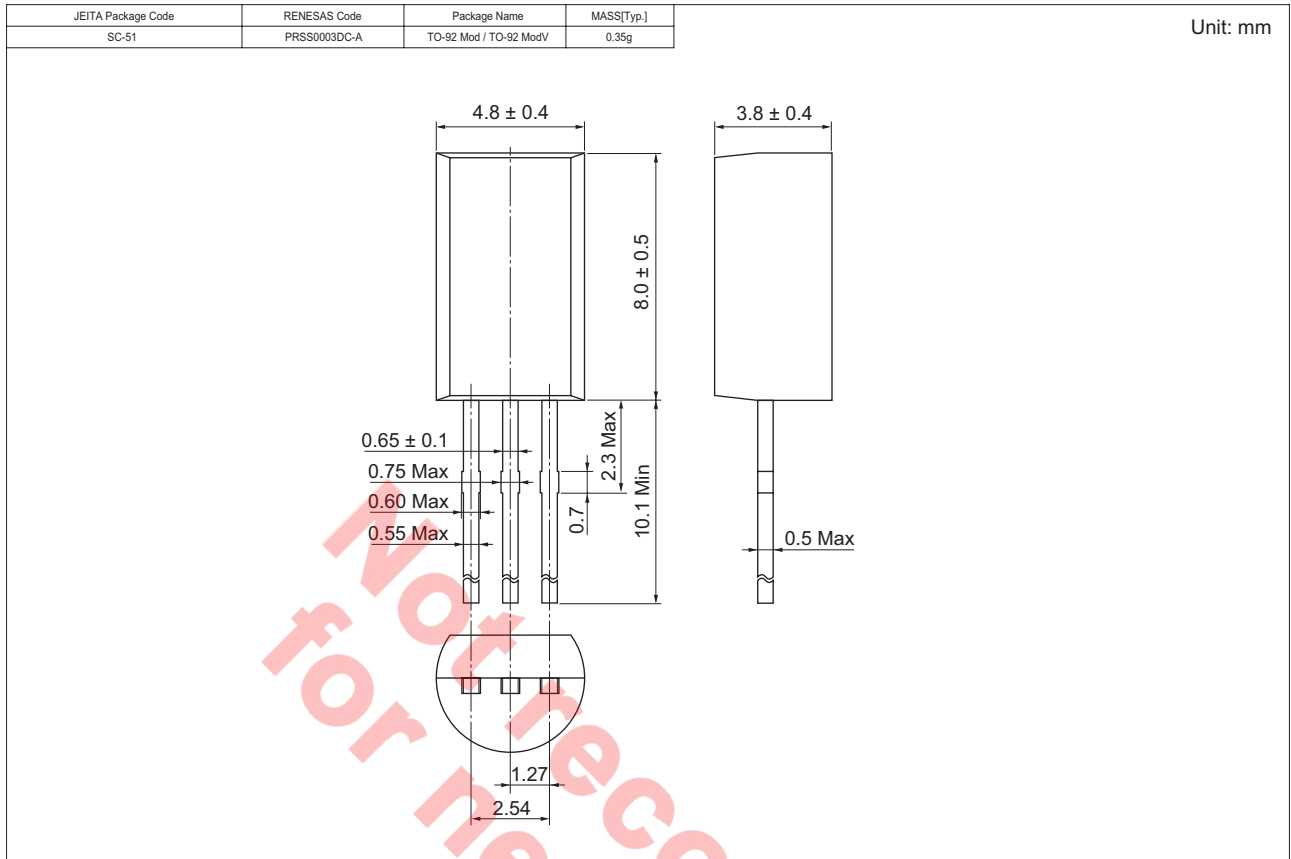
Main Characteristics





Not recommend  
for new design

### Package Dimensions



### Ordering Information

| Part Name   | Quantity | Shipping Container      |
|---|----------|-------------------------|
| 2SD667BTZ-E<br>2SD667CTZ-E<br>2SD667DTZ-E<br>2SD667ABTZ-E<br>2SD667ACTZ-E | 2500     | Hold Box, Radial 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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