

## 2SD1472

Silicon NPN Epitaxial, Darlington

REJ03G0792-0300

Rev.3.00

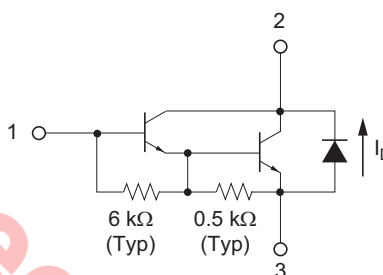
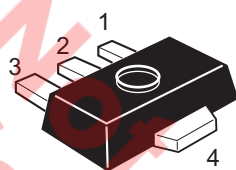
Nov 30, 2007

### Application

Low frequency power amplifier

### Outline

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



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

Note: Marking is "CT".

\*UPAK is a trademark of Renesas Technology Corp.

### Absolute Maximum Ratings

( $T_a = 25^\circ\text{C}$ )

| Item                         | Symbol                    | Ratings     | Unit             |
|------------------------------|---------------------------|-------------|------------------|
| Collector to base voltage    | $V_{CBO}$                 | 120         | V                |
| Collector to emitter voltage | $V_{CEO}$                 | 120         | V                |
| Emitter to base voltage      | $V_{EBO}$                 | 7           | V                |
| Collector current            | $I_C$                     | 1.5         | A                |
| Collector peak current       | $i_{C(\text{peak})}^{*1}$ | 3.0         | A                |
| Collector power dissipation  | $P_C^{*2}$                | 1.0         | W                |
| Junction temperature         | $T_j$                     | 150         | $^\circ\text{C}$ |
| Storage temperature          | $T_{\text{stg}}$          | -55 to +150 | $^\circ\text{C}$ |
| E to C diode forward current | $I_D$                     | 1.5         | A                |

Notes: 1. Pulse  $\leq 10$  ms, Duty cycle  $\leq 20\%$

2. Value on the alumina ceramic board (12.5 x 30 x 0.7 mm)

## Electrical Characteristics

(Ta = 25°C)

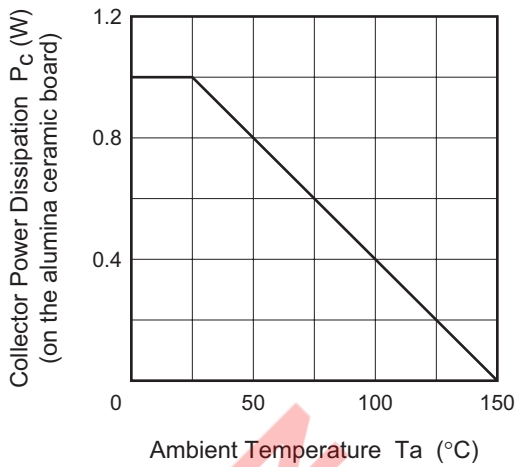
| Item                                    | Symbol         | Min  | Typ | Max   | Unit          | Test conditions                                  |
|---|----------------|------|-----|-------|---------------|--|
| Collector to base breakdown voltage     | $V_{(BR)CBO}$  | 120  | —   | —     | V             | $I_C = 0.1 \text{ mA}, I_E = 0$                  |
| Collector to emitter breakdown voltage  | $V_{(BR)CEO}$  | 120  | —   | —     | V             | $I_C = 10 \text{ mA}, R_{BE} = \infty$           |
| Emitter to base breakdown voltage       | $V_{(BR)EBO}$  | 7    | —   | —     | V             | $I_E = 50 \text{ mA}, I_C = 0$                   |
| Collector cutoff current                | $I_{CBO}$      | —    | —   | 1.0   | $\mu\text{A}$ | $V_{CB} = 100 \text{ V}, I_E = 0$                |
|   | $I_{CEO}$      | —    | —   | 10    | $\mu\text{A}$ | $V_{CE} = 100 \text{ V}, R_{BE} = \infty$        |
| DC current transfer ratio               | $h_{FE}$       | 2000 | —   | 30000 |               | $V_{CE} = 3 \text{ V}, I_C = 1 \text{ A}^{*1}$   |
| Collector to emitter saturation voltage | $V_{CE(sat)1}$ | —    | —   | 1.5   | V             | $I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$     |
|   | $V_{CE(sat)2}$ | —    | —   | 2.0   | V             | $I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$ |
| Base to emitter saturation voltage      | $V_{BE(sat)1}$ | —    | —   | 2.0   | V             | $I_C = 1 \text{ A}, I_B = 1 \text{ mA}^{*1}$     |
|   | $V_{BE(sat)2}$ | —    | —   | 2.5   | V             | $I_C = 1.5 \text{ A}, I_B = 1.5 \text{ mA}^{*1}$ |
| E to C diode forward voltage            | $V_D$          | —    | —   | 3.0   | V             | $I_D = 1.5 \text{ A}^{*1}$                       |

Notes: 1. Pulse test

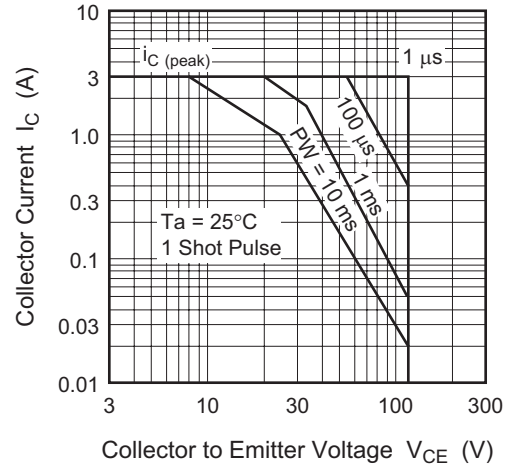
Not recommend  
for new design

Main Characteristics

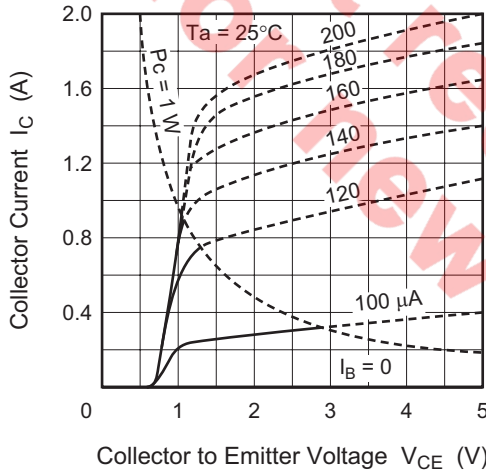
Maximum Collector Dissipation Curve



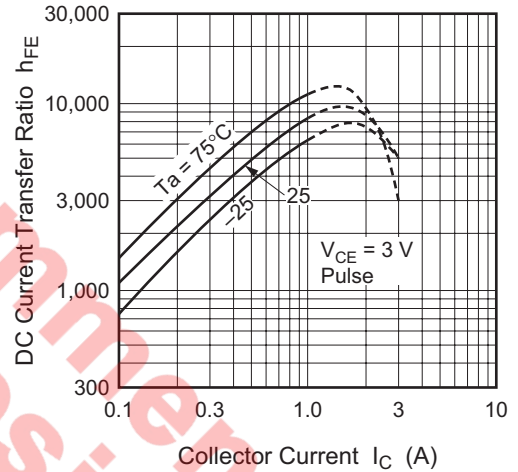
Area of Safe Operation



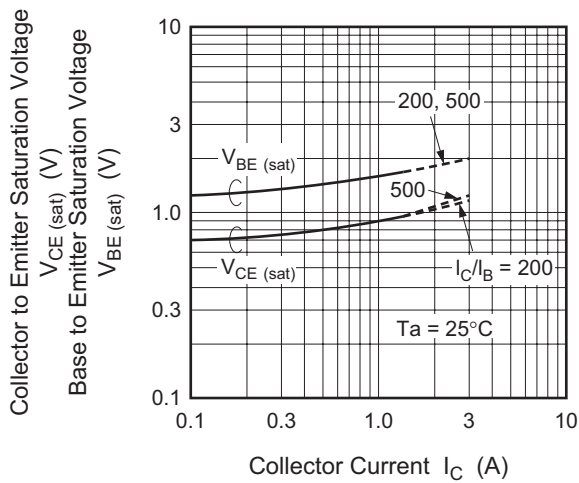
Typical Output Characteristics

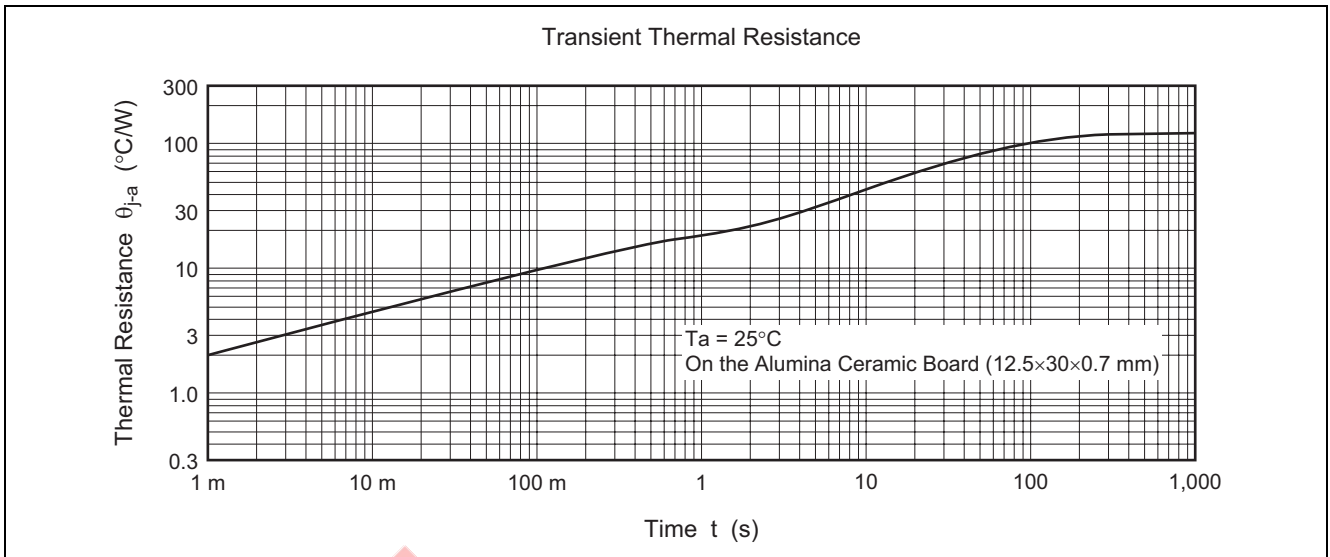


DC Current Transfer Ratio vs. Collector Current



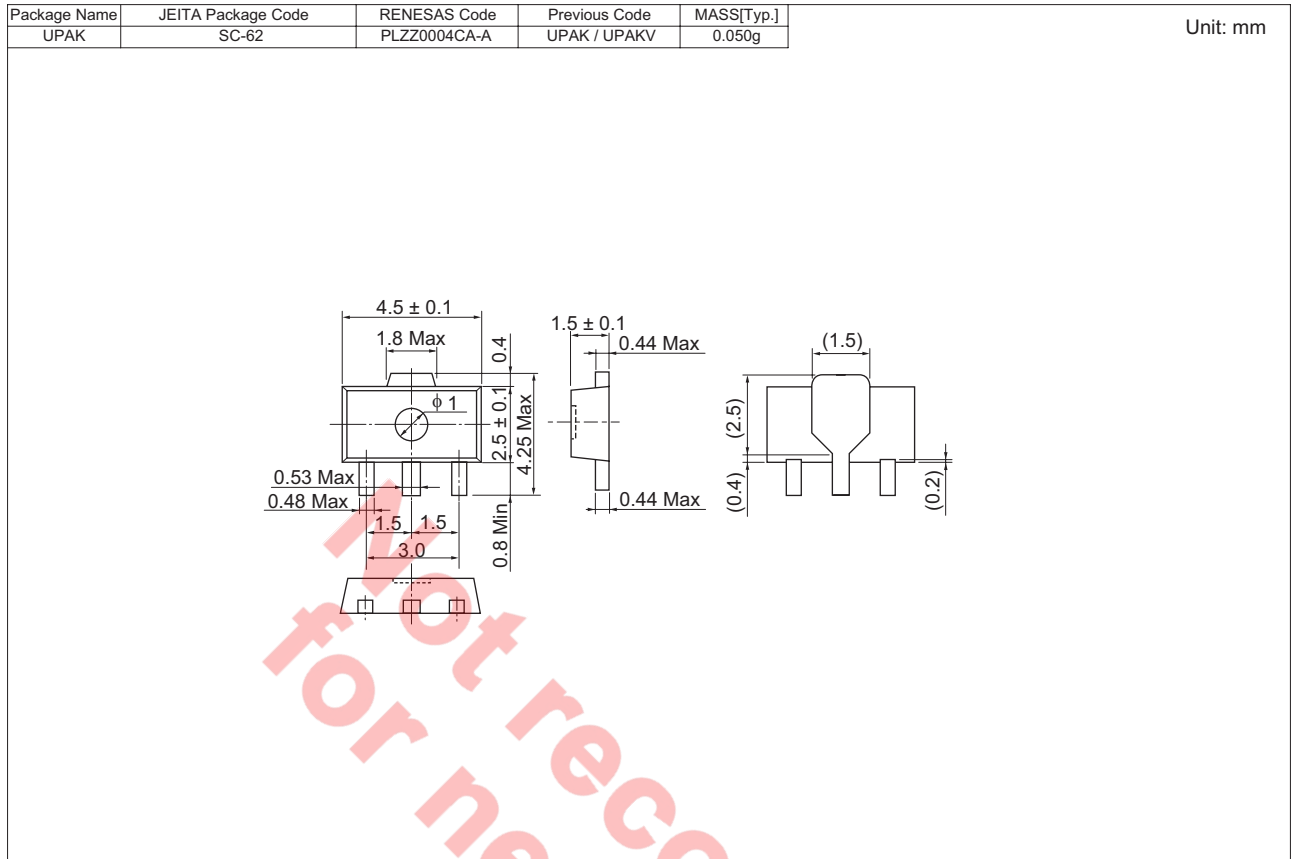
Saturation Voltage vs. Collector Current





Not recommend  
for new design

### Package Dimensions



### Ordering Information

| Part Name     | Quantity | Shipping Container                      |
|---------------|----------|---|
| 2SD1472CTTR-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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