

# 2SD2213

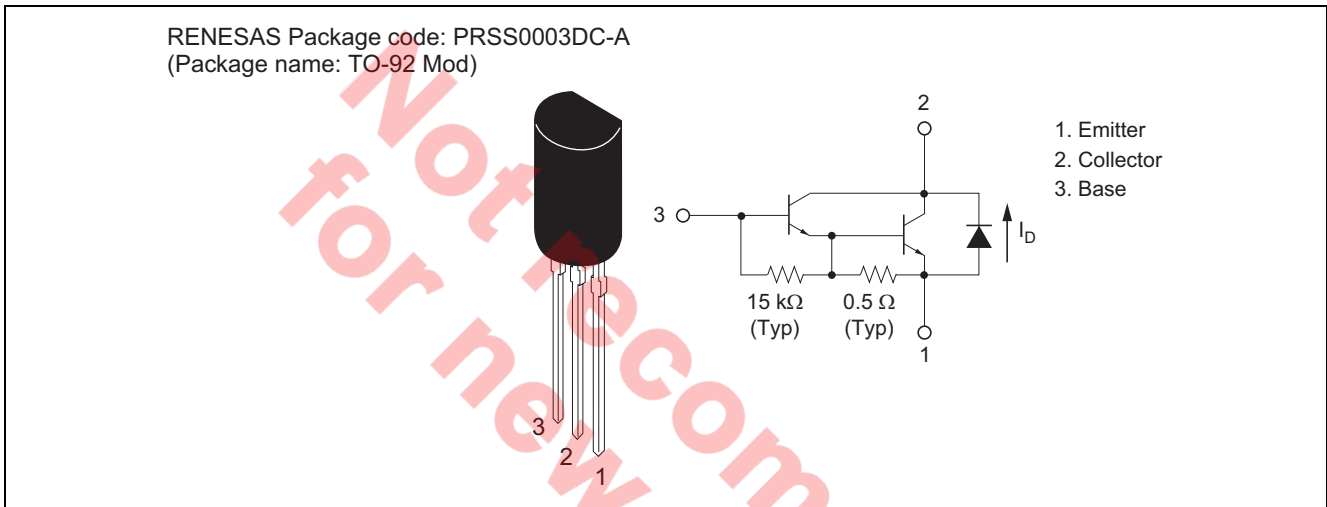
Silicon NPN Epitaxial, Darlington

REJ03G0807-0200  
 (Previous ADE-208-1165)  
 Rev.2.00  
 Aug.10.2005

## Application

Low frequency power amplifier

## Outline



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                         | Symbol         | Rated       | Unit |
|------------------------------|----------------|-------------|------|
| Collector to base voltage    | $V_{CBO}$      | 150         | V    |
| Collector to emitter voltage | $V_{CEO}$      | 80          | V    |
| Emitter to base voltage      | $V_{EBO}$      | 8           | V    |
| Collector current            | $I_C$          | 1.5         | A    |
| Collector peak current       | $i_{C (peak)}$ | 3           | A    |
| Collector power dissipation  | $P_C$          | 0.9         | W    |
| Junction temperature         | $T_j$          | 150         | °C   |
| Storage temperature          | $T_{stg}$      | -55 to +150 | °C   |
| E to C diode forward current | $I_D$          | 1.5         | A    |

## Electrical Characteristics

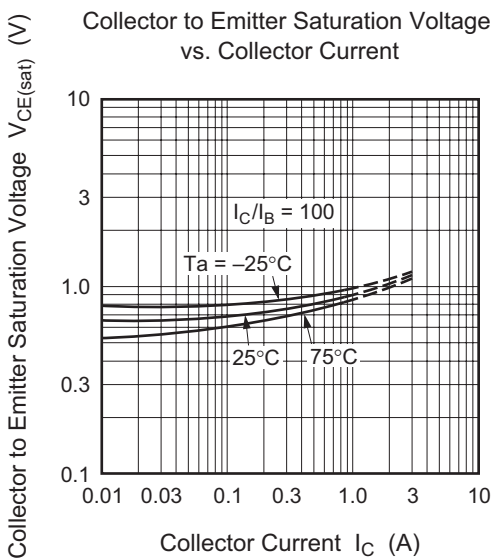
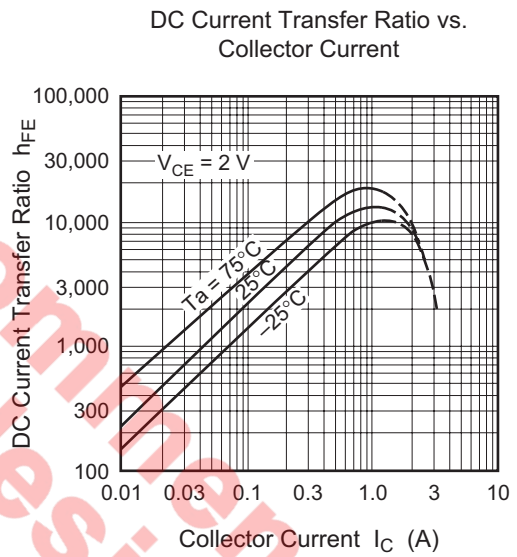
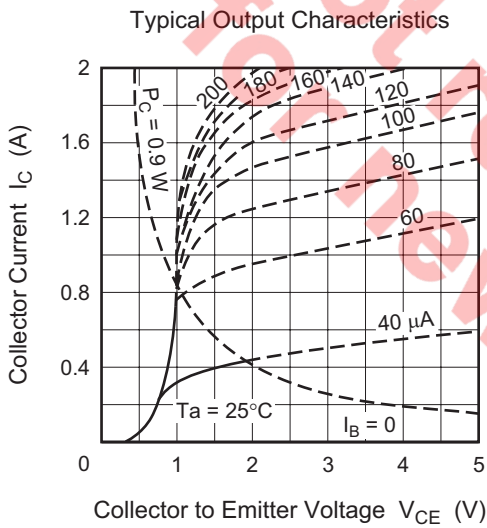
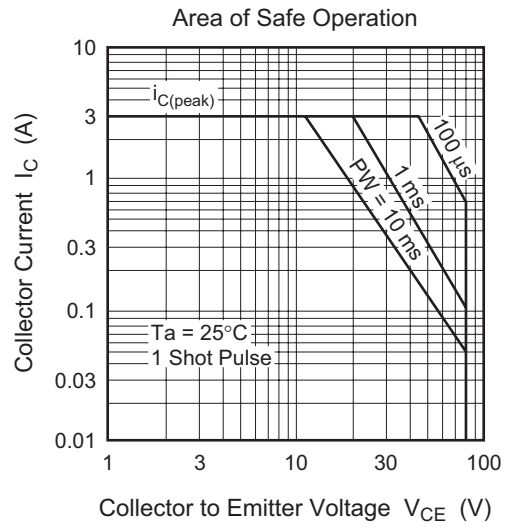
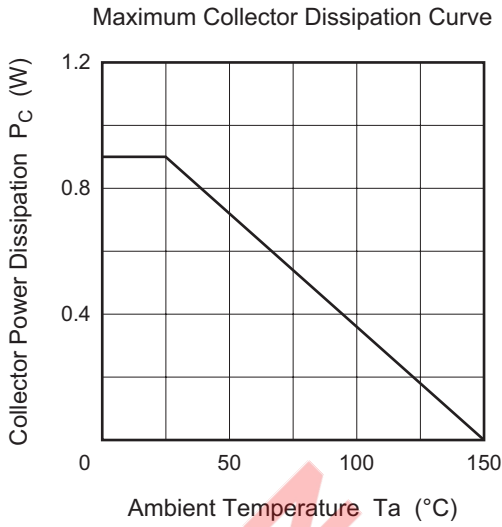
(Ta = 25°C)

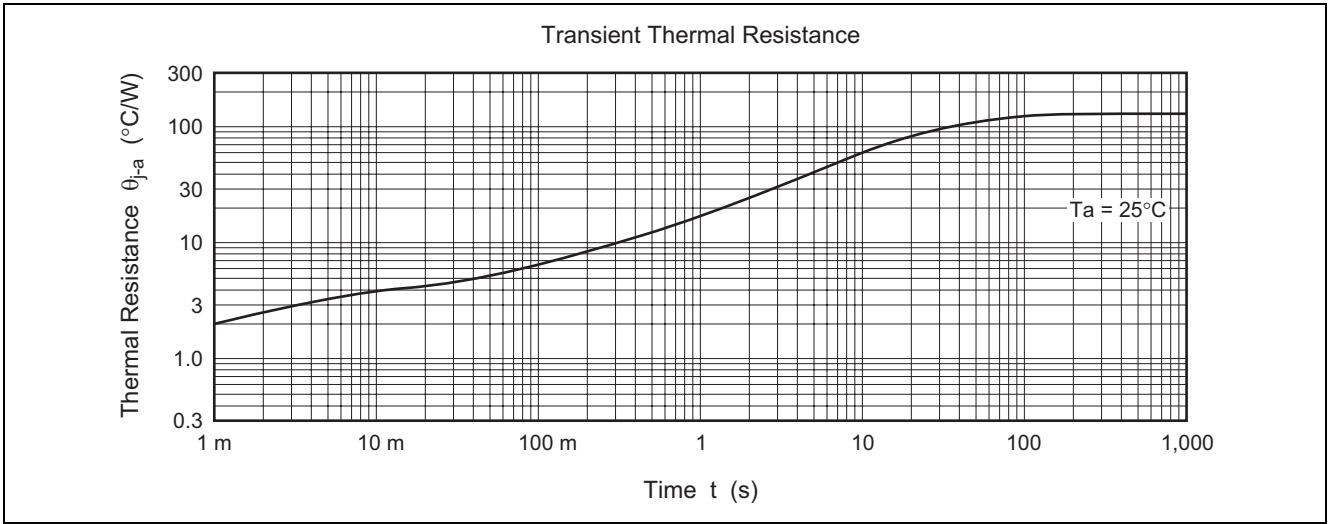
| Item                                    | Symbol        | Min  | Typ | Max   | Unit          | Test conditions                                   |
|---|---------------|------|-----|-------|---------------|---|
| Collector to base breakdown voltage     | $V_{(BR)CBO}$ | 150  | —   | —     | V             | $I_C = 1 \text{ mA}, I_E = 0$                     |
| Collector to emitter breakdown voltage  | $V_{(BR)CEO}$ | 80   | —   | —     | V             | $I_C = 10 \text{ mA}, R_{BE} = \infty$            |
| Emitter to base breakdown voltage       | $V_{(BR)EBO}$ | 8    | —   | —     | V             | $I_E = 50 \text{ mA}, I_C = 0$                    |
| Collector cutoff current                | $I_{CBO}$     | —    | —   | 5.0   | $\mu\text{A}$ | $V_{CB} = 120 \text{ V}, I_E = 0$                 |
|   | $I_{CEO}$     | —    | —   | 5.0   | $\mu\text{A}$ | $V_{CE} = 65 \text{ V}, I_E = \infty$             |
| DC current transfer ratio               | $h_{FE}$      | 2000 | —   | —     |               | $V_{CE} = 2 \text{ V}, I_C = 0.15 \text{ A}^{*1}$ |
|   | $h_{FE}$      | 5000 | —   | 30000 |               | $V_{CE} = 2 \text{ V}, I_C = 1 \text{ A}^{*1}$    |
|   | $h_{FE}$      | 1000 | —   | —     |               | $V_{CE} = 2 \text{ V}, I_C = 1.5 \text{ A}^{*1}$  |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | —    | —   | 1.5   | V             | $I_C = 1 \text{ A}^{*1}, I_B = 1 \text{ mA}$      |
| Base to emitter saturation voltage      | $V_{BE(sat)}$ | —    | —   | 2.0   | V             | $I_C = 1 \text{ A}^{*1}, I_B = 1 \text{ mA}$      |
| E to C diode forward voltage            | $V_D$         | —    | —   | 3.0   | V             | $I_D = 1.5 \text{ A}^{*1}$                        |

Note: 1. Pulse test

Not recommend  
for new design

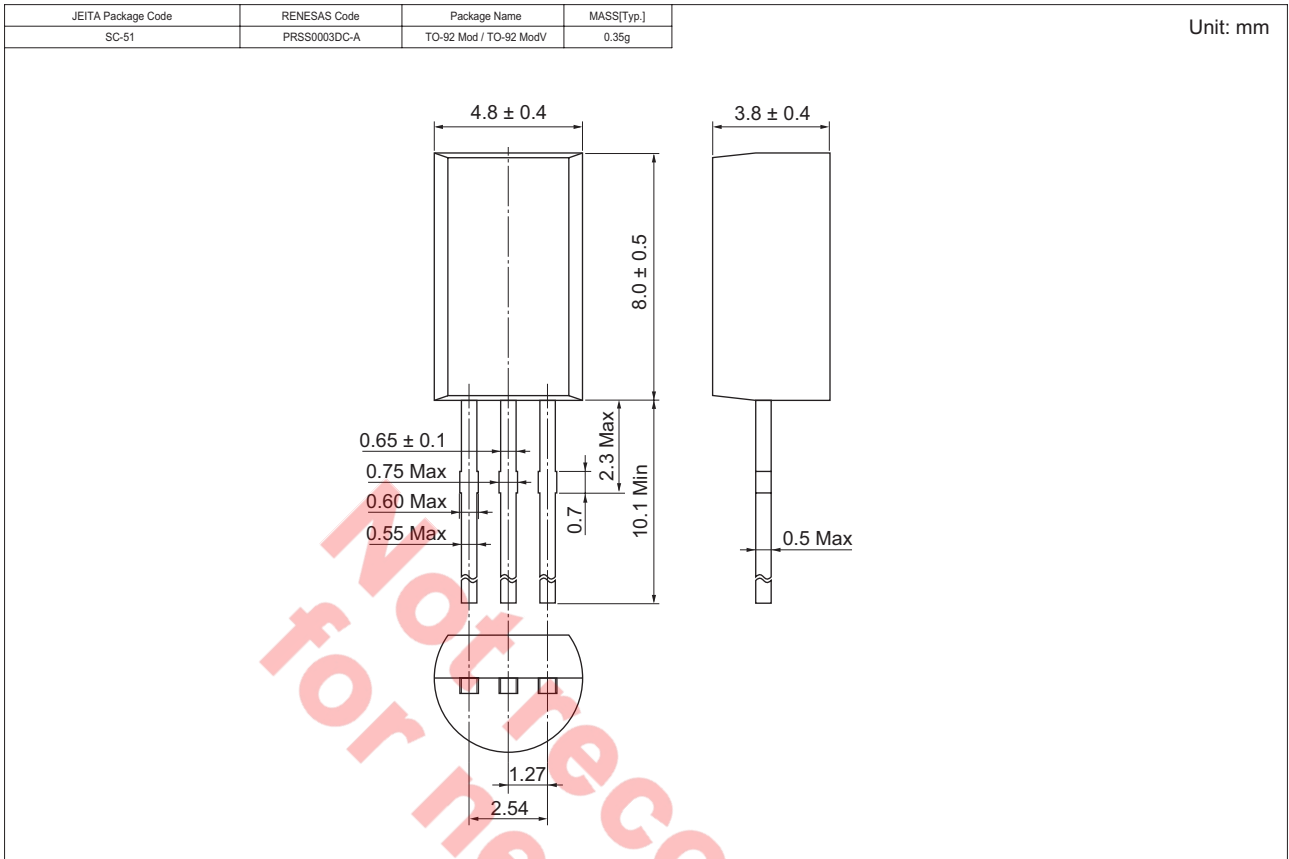
Main Characteristics





Not recommend  
for new design

### Package Dimensions



### Ordering Information

| Part Name | Quantity | Shipping Container      |
|-----------|----------|-------------------------|
| 2SD2213TZ | 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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