

2SA1084, 2SA1085

Silicon PNP Epitaxial

REJ03G0635-0300
 (Previous ADE-208-1007A)
 Rev.3.00
 Aug.10.2005

Application

Low frequency low noise amplifier

Outline

RENESAS Package code: PRSS0003DA-A
 (Package name: TO-92 (1))



- 1. Emitter
- 2. Collector
- 3. Base

Absolute Maximum Ratings

(Ta = 25°C)

| Item | Symbol | 2SA1084 | 2SA1085 | Unit |
|------------------------------|-----------|-------------|-------------|------|
| Collector to base voltage | V_{CBO} | -90 | -120 | V |
| Collector to emitter voltage | V_{CEO} | -90 | -120 | V |
| Emitter to base voltage | V_{EBO} | -5 | -5 | V |
| Collector current | I_C | -100 | -100 | mA |
| Emitter current | I_E | 100 | 100 | mA |
| Collector power dissipation | P_C | 400 | 400 | mW |
| Junction temperature | T_j | 150 | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | -55 to +150 | °C |

Electrical Characteristics

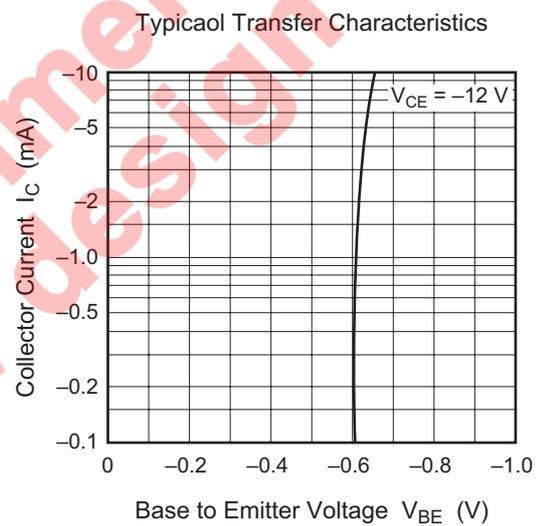
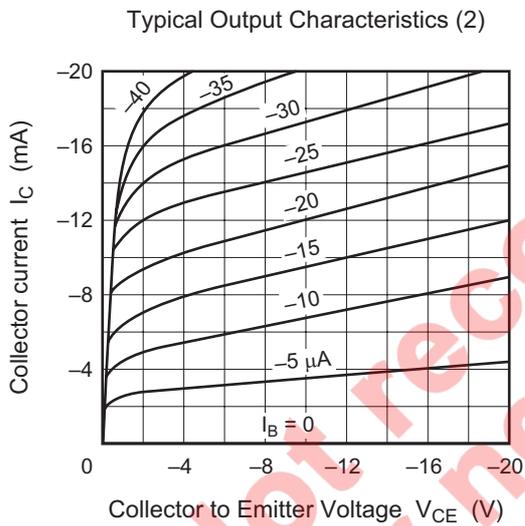
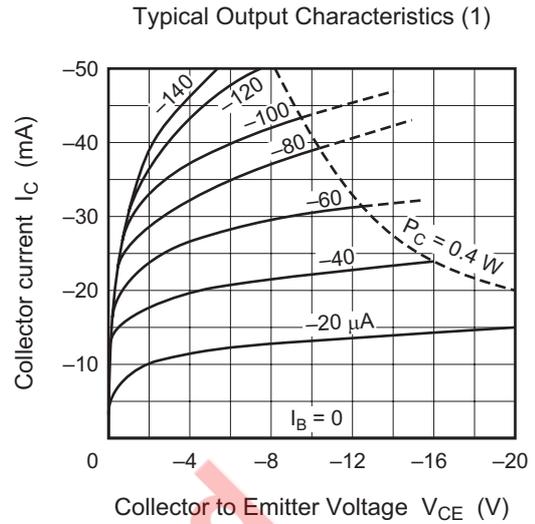
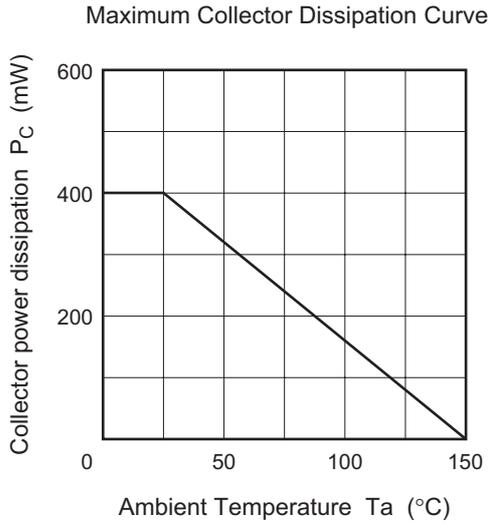
(Ta = 25°C)

| Item | Symbol | 2SA1084 | | | 2SA1085 | | | Unit | Test conditions |
|---|---------------|---------|------|------|---------|------|------|---------------------------|--|
| | | Min | Typ | Max | Min | Typ | Max | | |
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | -90 | — | — | -120 | — | — | V | $I_C = -10 \mu A, I_E = 0$ |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | -90 | — | — | -120 | — | — | 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} | — | — | -0.1 | — | — | -0.1 | μA | $V_{CB} = -50 \text{ V}, I_E = 0$ |
| Emitter cutoff current | I_{EBO} | — | — | -0.1 | — | — | -0.1 | μA | $V_{EB} = -2 \text{ V}, I_C = 0$ |
| DC current transfer ratio | h_{FE}^{*1} | 250 | — | 800 | 250 | — | 800 | | $V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$ |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | — | -0.2 | — | — | -0.2 | V | $I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$ |
| Base to emitter voltage | V_{BE} | — | -0.6 | — | — | -0.6 | — | V | $V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$ |
| Gain bandwidth product | f_T | — | 90 | — | — | 90 | — | MHz | $V_{CE} = -12 \text{ V}, I_C = -2 \text{ mA}$ |
| Collector output capacitance | C_{ob} | — | 3.5 | — | — | 3.5 | — | pF | $V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$ |
| Noise voltage referred to input | e_n | — | 0.5 | — | — | 0.5 | — | nV/ $\sqrt{\text{Hz}}$ | $V_{CE} = -6 \text{ V}, I_C = -10 \text{ mA}, f = 1 \text{ kHz}, R_g = 0, \Delta f = 1 \text{ Hz}$ |

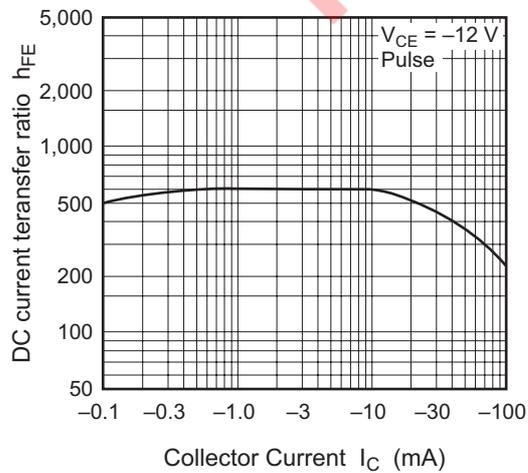
Note: 1. The 2SA1084 and 2SA1085 are grouped by h_{FE} as follows.

| D | E |
|------------|------------|
| 250 to 500 | 400 to 800 |

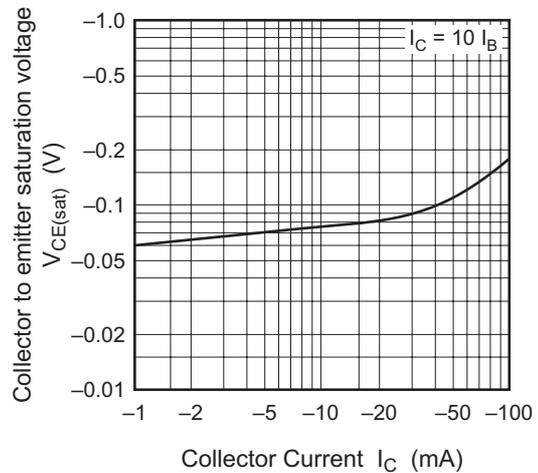
Main Characteristics

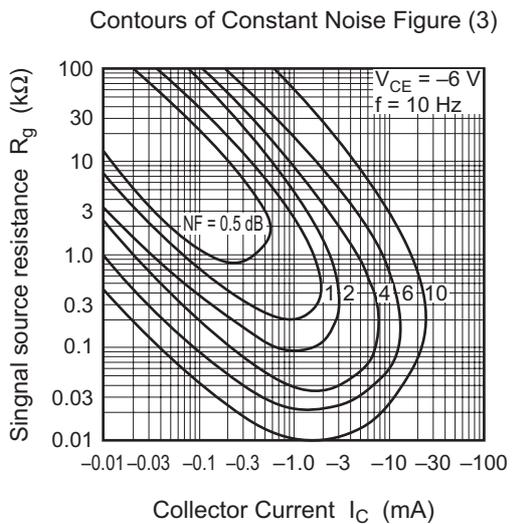
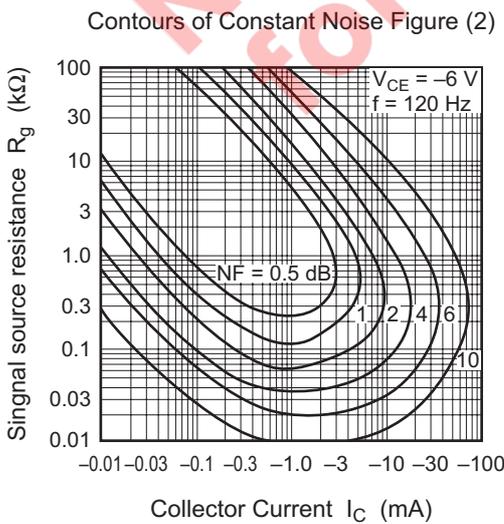
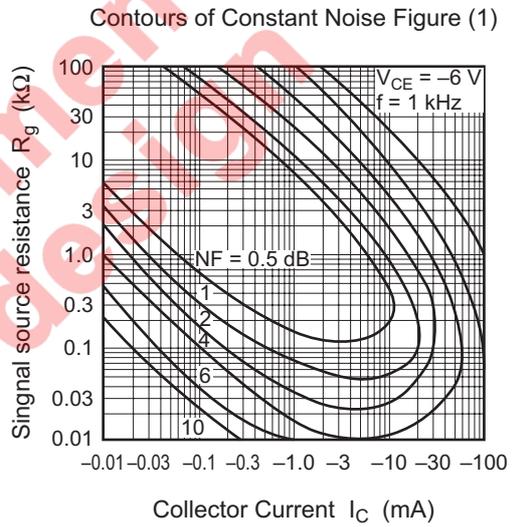
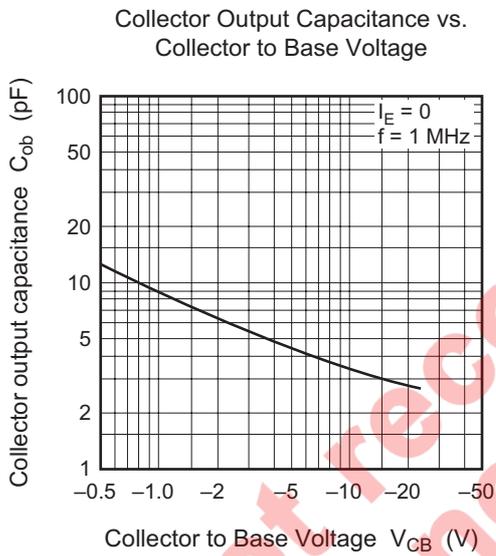
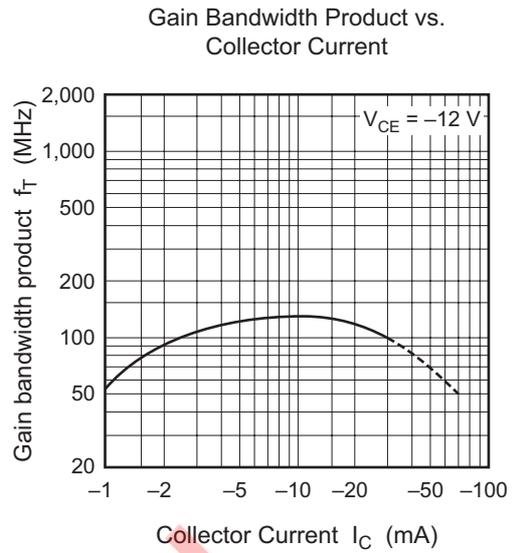
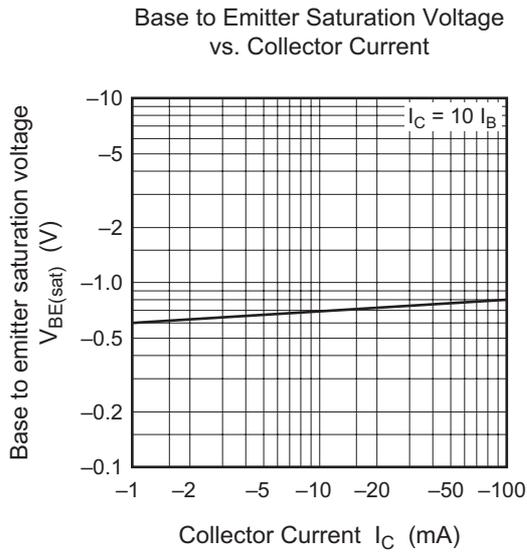


DC Current Transfer Ratio vs. Collector Current

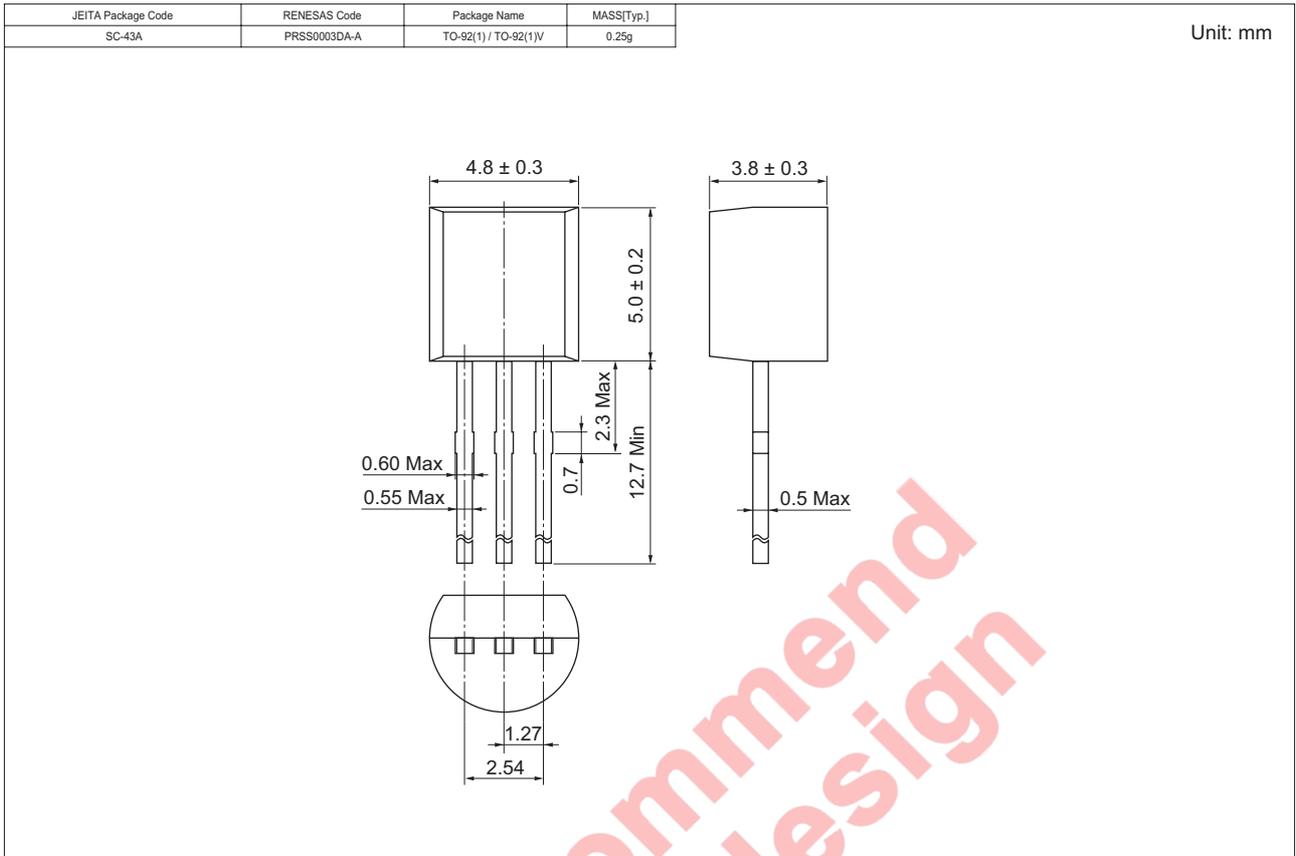


Collector to Emitter Saturation Voltage vs. Collector Current





Package Dimensions



Ordering Information

| Part Name | Quantity | Shipping Container |
|--|----------|-------------------------|
| 2SA1084ETZ-E 2SA1085DTZ-E 2SA1085ETZ-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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450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.

10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.

Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.

1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.

Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> 2-796-3115, Fax: <82> 2-796-2145

Renesas Technology Malaysia Sdn. Bhd.

Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510