# 2SC4702

## Silicon NPN Epitaxial

REJ03G0729-0300
(Previous ADE-208-1120A)
Rev.3.00
Aug.10.2005

## Application

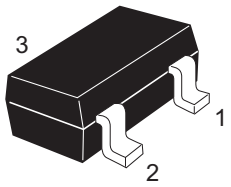
High voltage amplifier

## Features

- High breakdown voltage
  $V_{CEO}$ = 300 V
- Small Cob
  Cob = 1.5 pF Typ.

## Outline

RENESAS Package code: PLSP0003ZB-A
(Package name: MPAK)




1. Emitter
2. Base
3. Collector

Note: Marking is “XV–”.

## Absolute Maximum Ratings

(Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|---|---|---|---|
| Collector to base voltage | $V_{CBO}$ | 300 | V |
| Collector to emitter voltage | $V_{CEO}$ | 300 | V |
| Emitter to base voltage | $V_{EBO}$ | 5 | V |
| Collector current | $I_C$ | 50 | mA |
| Collector power dissipation | $P_C$ | 150 | mW |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | °C |

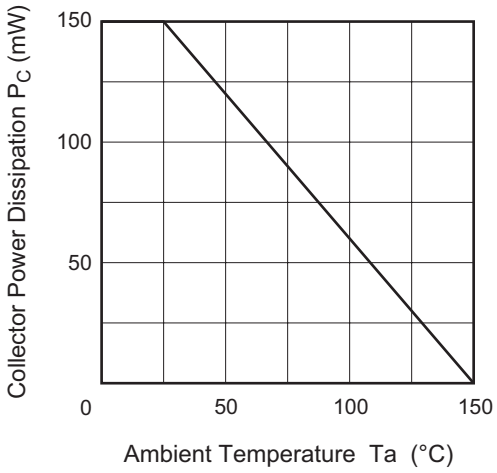
## Electrical Characteristics

(Ta = 25°C)

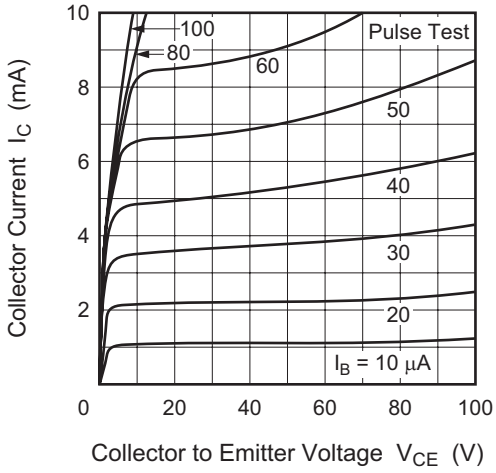
| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|---|---|---|---|---|---|---|
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 300 | — | — | V | $I_C$ = 10 µA, $I_E$ = 0 |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | 300 | — | — | V | $I_C$ = 1 mA, $R_{BE}$ = ∞ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | 5 | — | — | V | $I_E$ = 10 µA, $I_C$ = 0 |
| Collector cutoff current | $I_{CBO}$ | — | — | 0.1 | µA | $V_{CB}$ = 250 V, $I_E$ = 0 |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | — | 0.5 | V | $I_C$ = 30 mA, $I_B$ = 3 mA |
| DC current transfer ratio | $h_{FE}$ | 60 | — | 150 | | $V_{CE}$ = 6 V, $I_C$ = 2 mA |
| Gain bandwidth product | $f_T$ | — | 80 | — | MHz | $V_{CE}$ = 6 V, $I_C$ = 5 mA |
| Collector output capacitance | Cob | — | 1.5 | — | pF | $V_{CB}$ = 10 V, $I_E$ = 0, f = 1 MHz |

## Main Characteristics

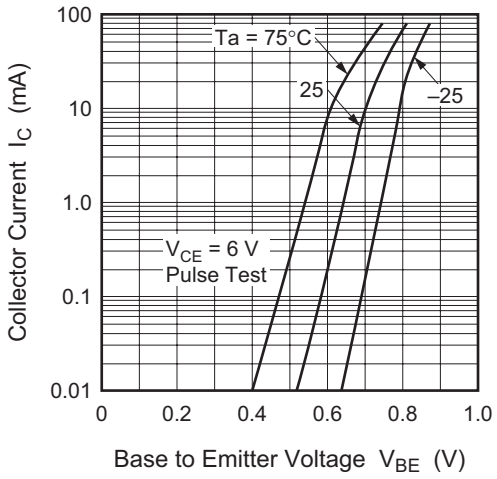
Maximum Collector Dissipation Curve



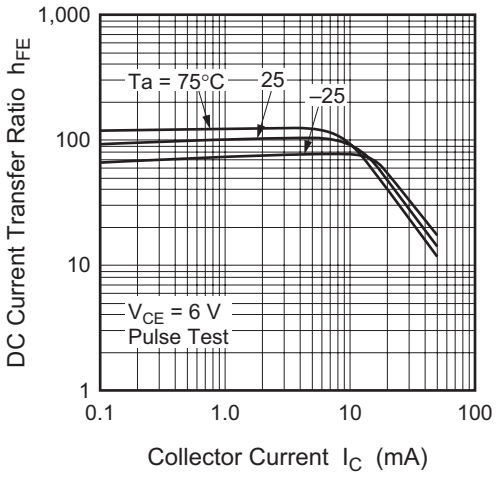

Typical Output Characteristics



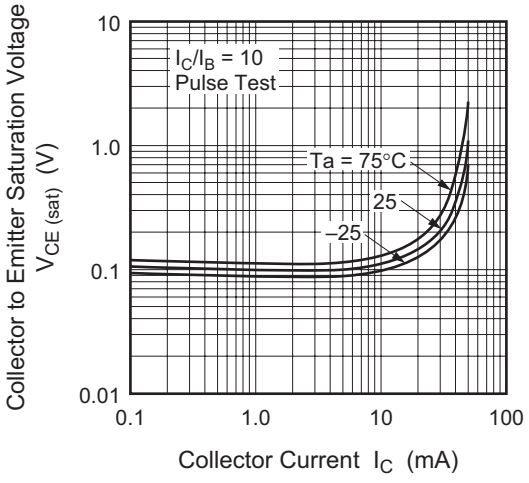

Typical Transfer Characteristics



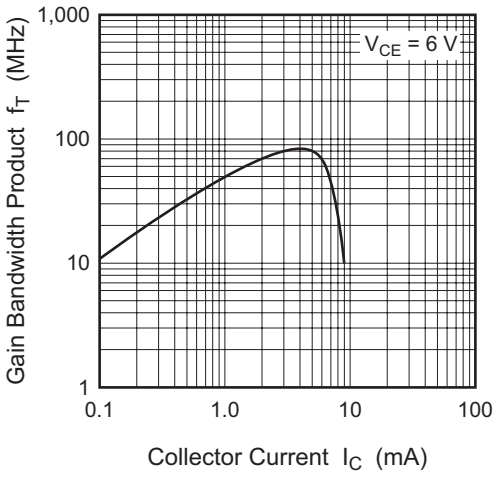

DC Current Transfer Ratio vs. Collector Current



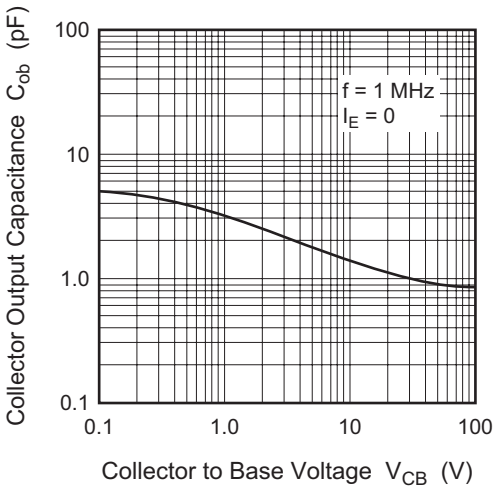

Collector to Emitter Saturation Voltage vs. Collector Current




Gain Bandwidth Product vs. Collector Current

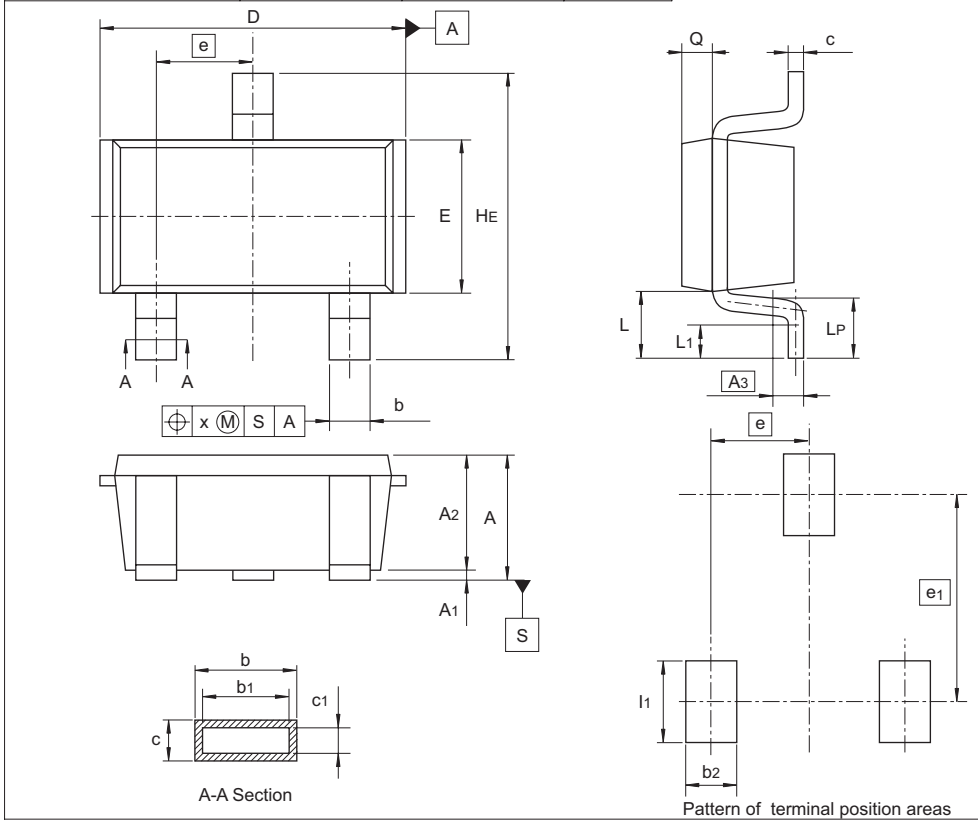


Collector Output Capacitance vs.
Collector to Base Voltage



## Package Dimensions

| JEITA Package Code | RENESAS Code | Package Name | MASS[Typ.] |
|---|---|---|---|
| SC-59A | PLSP0003ZB-A | MPAK(T) / MPAK(T)V, MPAK / MPAKV | 0.011g |




| Reference Symbol | Dimension in Millimeters | | |
|---|---|---|---|
| | Min | Nom | Max |
| A | 1.0 | — | 1.3 |
| $A_1$ | 0 | — | 0.1 |
| $A_2$ | 1.0 | 1.1 | 1.2 |
| $A_3$ | — | 0.25 | — |
| b | 0.35 | 0.42 | 0.5 |
| $b_1$ | — | 0.4 | — |
| c | 0.1 | 0.13 | 0.15 |
| $c_1$ | — | 0.11 | — |
| D | 2.7 | — | 3.1 |
| E | 1.35 | 1.5 | 1.65 |
| e | — | 0.95 | — |
| $H_E$ | 2.2 | 2.8 | 3.0 |
| L | 0.35 | — | 0.75 |
| $L_1$ | 0.15 | — | 0.55 |
| $L_P$ | 0.25 | — | 0.65 |
| x | — | — | 0.05 |
| $b_2$ | — | — | 0.55 |
| $e_1$ | — | 1.95 | — |
| $l_1$ | — | — | 1.05 |
| Q | — | 0.3 | — |

## Ordering Information

| Part Name | Quantity | Shipping Container |
|---|---|---|
| 2SC4702XV-TR-E | 3000 | ϕ 178 mm Reel, 8 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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## RENESAS SALES OFFICES

http://www.renesas.com

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Colophon .3.0