# 2SC2853, 2SC2854

Silicon NPN Epitaxial

HITACHI

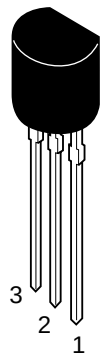
ADE-208-1078A (Z)
2nd. Edition
Mar. 2001

## Application

- Low frequency amplifier

## Outline

TO-92 (1)




1. Emitter
2. Collector
3. Base

Hitachi semiconductor

## Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | 2SC2853 | 2SC2854 | 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 | Tj | 150 | 150 | °C |
| Storage temperature | Tstg | –55 to +150 | –55 to +150 | °C |

## Electrical Characteristics (Ta = 25°C)

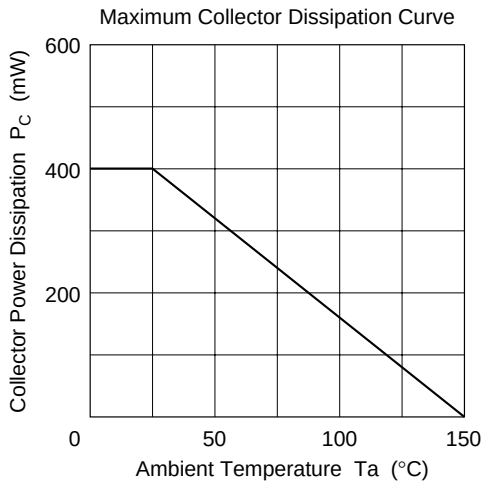
| | | 2SC2853 | | | 2SC2854 | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Item | Symbol | Min | Typ | Max | Min | Typ | Max | Unit | Test conditions |
| Collector to base breakdown voltage | $V_{(BR)CBO}$ | 90 | — | — | 120 | — | — | V | $I_C$ = 10 µA, $I_E$ = 0 |
| Collector to emitter breakdown voltage | $V_{(BR)CEO}$ | 90 | — | — | 120 | — | — | V | $I_C$ = 1 mA, $R_{BE}$ = ∞ |
| Emitter to base breakdown voltage | $V_{(BR)EBO}$ | 5 | — | — | 5 | — | — | V | $I_E$ = 10 µA, $I_C$ = 0 |
| Collector cutoff current | $I_{CBO}$ | — | — | 0.1 | — | — | 0.1 | µA | $V_{CB}$ = 70 V, $I_E$ = 0 |
| Emitter cutoff current | $I_{EBO}$ | — | — | 0.1 | — | — | 0.1 | µA | $V_{EB}$ = 2 V, $I_C$ = 0 |
| DC current transfer ratio | $h_{FE}$*[1] | 250 | — | 800 | 250 | — | 800 | | $V_{CE}$ = 12 V, $I_C$ = 2 mA*[2] |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | 0.05 | 0.10 | — | 0.05 | 0.10 | V | $I_C$ = 10 mA, $I_B$ = 1 mA*[2] |
| Base to emitter saturation voltage | $V_{BE(sat)}$ | — | 0.7 | 1.0 | — | 0.7 | 1.0 | V | |
| Gain bandwidth product | $f_T$ | — | 310 | — | — | 310 | — | MHz | $V_{CE}$ = 6 V, $I_C$ = 10 mA |
| Collector output capacitance | Cob | — | 3 | — | — | 3 | — | pF | $V_{CB}$ = 10 V, $I_E$ = 0, f = 1 MHz |

Notes: 1. The 2SC2853 and 2SC2854 are grouped by $h_{FE}$ as follows.

2. Pulse test

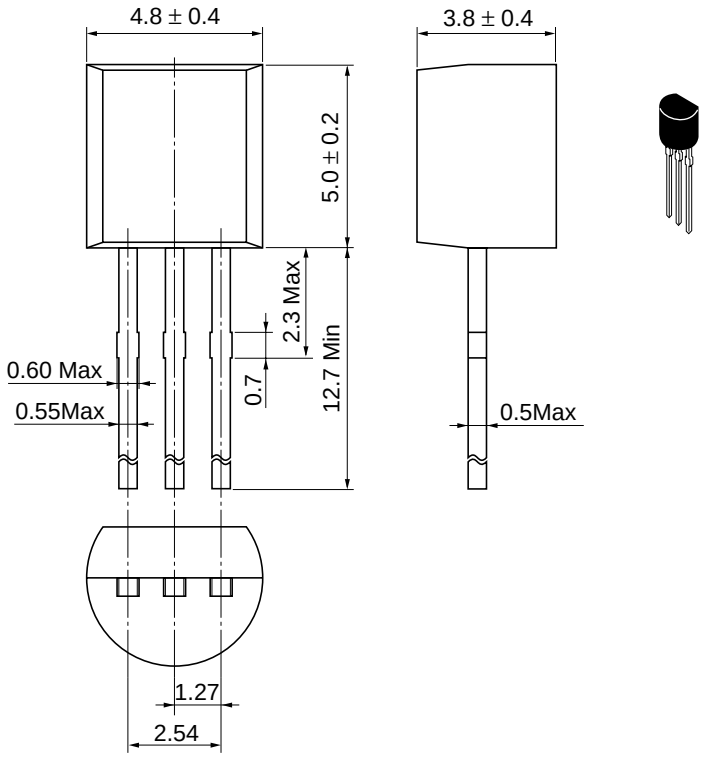
| D | E |
|---|---|
| 250 to 500 | 400 to 800 |

See characteristic curves of 2SC2855 and 2SC2856.


Maximum Collector Dissipation Curve
Collector Power Dissipation $P_C$ (mW)
600
400
200
0
50
100
150
Ambient Temperature Ta (°C)

## Package Dimensions

As of January, 2001
Unit: mm




| | |
|---|---|
| Hitachi Code | TO-92 (1) |
| JEDEC | Conforms |
| EIAJ | Conforms |
| Mass (reference value) | 0.25 g |

## Cautions

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