

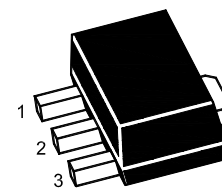


## 2SC4548U Plastic-Encapsulate Transistors

TRANSISTOR (NPN)

### FEATURES

- Small Flat Package
- High Breakdown Voltage
- Excellent  $h_{FE}$  Linearity



1.Base 2.Collector 3.Emitter

SOT-89-3L

### MAXIMUM RATINGS ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

| Symbol          | Parameter                                   | Value    | Unit                        |
|-----------------|---------------------------------------------|----------|-----------------------------|
| $V_{CBO}$       | Collector-Base Voltage                      | 400      | V                           |
| $V_{CEO}$       | Collector-Emitter Voltage                   | 400      | V                           |
| $V_{EBO}$       | Emitter-Base Voltage                        | 5        | V                           |
| $I_C$           | Collector Current                           | 200      | mA                          |
| $P_C$           | Collector Power Dissipation                 | 500      | mW                          |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 250      | $^{\circ}\text{C}/\text{W}$ |
| $T_j$           | Junction Temperature                        | 150      | $^{\circ}\text{C}$          |
| $T_{stg}$       | Storage Temperature                         | -55~+150 | $^{\circ}\text{C}$          |

### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}\text{C}$ unless otherwise specified)

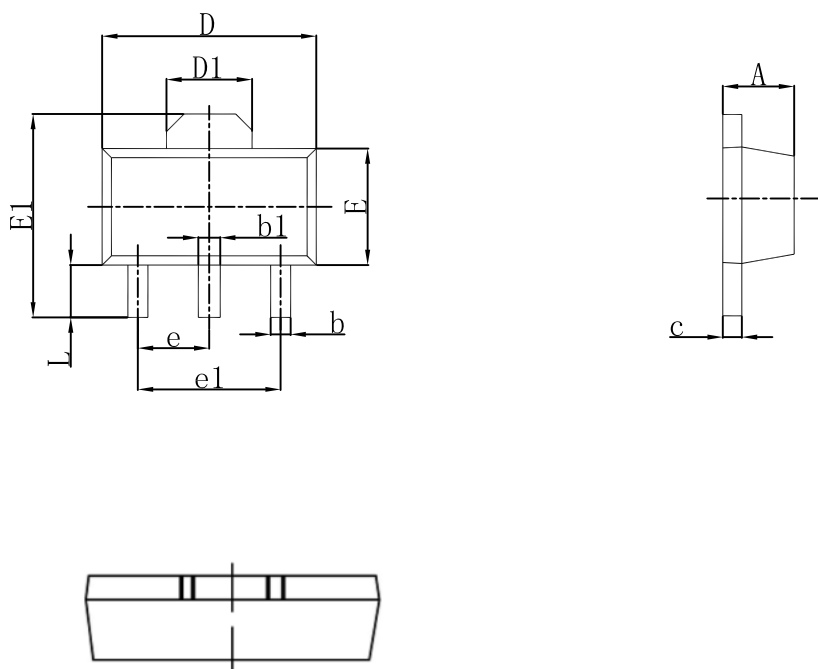
| Parameter                            | Symbol        | Test conditions                           | Min | Typ | Max | Unit          |
|--------------------------------------|---------------|-------------------------------------------|-----|-----|-----|---------------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$ | $I_C=10\mu\text{A}, I_E=0$                | 400 |     |     | V             |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$ | $I_C=1\text{mA}, I_B=0$                   | 400 |     |     | V             |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$ | $I_E=10\mu\text{A}, I_C=0$                | 5   |     |     | V             |
| Collector cut-off current            | $I_{CBO}$     | $V_{CB}=300\text{V}, I_E=0$               |     |     | 0.1 | $\mu\text{A}$ |
| Emitter cut-off current              | $I_{EBO}$     | $V_{EB}=4\text{V}, I_C=0$                 |     |     | 0.1 | $\mu\text{A}$ |
| DC current gain                      | $h_{FE}$      | $V_{CE}=10\text{V}, I_C=50\text{mA}$      | 60  |     | 200 |               |
| Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_C=50\text{mA}, I_B=5\text{mA}$         |     |     | 0.6 | V             |
| Base-emitter saturation voltage      | $V_{BE(sat)}$ | $I_C=50\text{mA}, I_B=5\text{mA}$         |     |     | 1   | V             |
| Transition frequency                 | $f_T$         | $V_{CE}=30\text{V}, I_C=10\text{mA}$      |     | 70  |     | MHz           |
| Collector output capacitance         | $C_{ob}$      | $V_{CB}=30\text{V}, I_E=0, f=1\text{MHz}$ |     | 4   |     | pF            |

### CLASSIFICATION OF $h_{FE}$

| RANK    | D        | E         |
|---------|----------|-----------|
| RANGE   | 60 - 120 | 100 - 200 |
| MARKING | CN       |           |



## SOT-89-3L Outlines Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.400                     | 1.600 | 0.055                | 0.063 |
| b      | 0.320                     | 0.520 | 0.013                | 0.020 |
| b1     | 0.400                     | 0.580 | 0.016                | 0.023 |
| c      | 0.350                     | 0.440 | 0.014                | 0.017 |
| D      | 4.400                     | 4.600 | 0.173                | 0.181 |
| D1     | 1.550 REF.                |       | 0.061 REF.           |       |
| E      | 2.300                     | 2.600 | 0.091                | 0.102 |
| E1     | 3.940                     | 4.250 | 0.155                | 0.167 |
| e      | 1.500 TYP.                |       | 0.060 TYP.           |       |
| e1     | 3.000 TYP.                |       | 0.118 TYP.           |       |
| L      | 0.900                     | 1.200 | 0.035                | 0.047 |