

## SOT-89 Plastic-Encapsulate Transistors

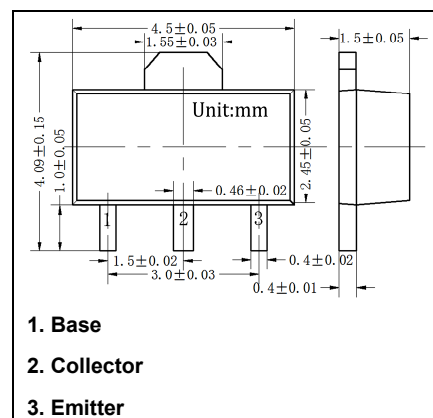
### 2SB1188-R

PNP Transistors

#### Features

- Low  $V_{CE(sat)}$
- Complements the 2SD1766

Marking: BCR



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

| Symbol          | Parameter                                   | Value   | Unit                 |
|-----------------|---------------------------------------------|---------|----------------------|
| $V_{CBO}$       | Collector Base Voltage                      | -40     | V                    |
| $V_{CEO}$       | Collector Emitter Voltage                   | -32     | V                    |
| $V_{EBO}$       | Emitter Base Voltage                        | -5      | V                    |
| $I_C$           | Collector Current                           | -2      | A                    |
| $P_C$           | Collector Power Dissipation                 | 500     | mW                   |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient | 250     | $^{\circ}\text{C/W}$ |
| $T_j$           | 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)

| Symbol        | Parameter                             | Test Conditions                                             | Min | Typ | Max  | Unit          |
|---------------|---------------------------------------|-------------------------------------------------------------|-----|-----|------|---------------|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage      | $I_C = -50\mu\text{A}, I_E = 0$                             | -40 |     |      | V             |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage   | $I_C = -1\text{mA}, I_B = 0$                                | -32 |     |      | V             |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage        | $I_E = -50\mu\text{A}, I_C = 0$                             | -5  |     |      | V             |
| $I_{CBO}$     | Collector cut-off current             | $V_{CB} = -20\text{V}, I_E = 0$                             |     |     | -1   | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter cut-off current               | $V_{EB} = -4\text{V}, I_C = 0$                              |     |     | -1   | $\mu\text{A}$ |
| $h_{FE(1)}$   | DC current gain*                      | $V_{CE} = -5\text{V}, I_C = -1\text{mA}$                    | 82  |     |      |               |
| $h_{FE(2)}$   |                                       | $V_{CE} = -3\text{V}, I_C = -500\text{mA}$                  | 180 |     | 390  |               |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage* | $I_C = -2\text{A}, I_B = -0.2\text{A}$                      |     |     | -0.8 | V             |
| $f_T$         | Transition frequency                  | $V_{CE} = -5\text{V}, I_C = -0.5\text{A}, f = 30\text{MHz}$ |     | 100 |      | MHz           |
| $C_{ob}$      | Output capacitance                    | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$            |     | 50  |      | pF            |

# Typical Characteristics

