

RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## DESCRIPTION

The 2SB1188 is designed for medium power amplifier applications.

## FEATURES

- Low  $V_{CE(sat)}$
- RoHS Compliant Product

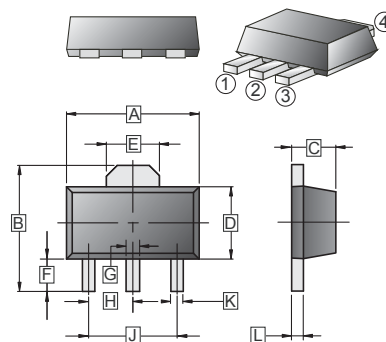
## CLASSIFICATION OF $h_{FE}$

| Product-Rank | 2SB1188-Q | 2SB1188-R |
|--------------|-----------|-----------|
| Range        | 120~270   | 180~390   |
| Marking      | BCQ       | BCR       |

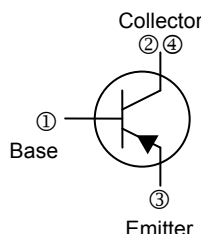
## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---------|-----|-------------|
| SOT-89  | 1K  | 7 inch      |

### SOT-89



| REF. | Millimeter |      | REF. | Millimeter |      |
|------|------------|------|------|------------|------|
|      | Min.       | Max. |      | Min.       | Max. |
| A    | 4.40       | 4.60 | G    | 0.40       | 0.58 |
| B    | 3.94       | 4.25 | H    | 1.50       | TYP  |
| C    | 1.40       | 1.60 | J    | 3.00       | TYP  |
| D    | 2.25       | 2.60 | K    | 0.32       | 0.52 |
| E    | 1.50       | 1.85 | L    | 0.35       | 0.44 |
| F    | 0.89       | 1.20 |      |            |      |



## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                                   | Symbol          | Ratings      | Unit                      |
|---|-----------------|--------------|---------------------------|
| Collector-Base Voltage                      | $V_{CBO}$       | -40          | V                         |
| Collector-Emitter Voltage                   | $V_{CEO}$       | -32          | V                         |
| Emitter-Base Voltage                        | $V_{EBO}$       | -5           | V                         |
| Collector Current -Continuous               | $I_C$           | -2           | A                         |
| Collector Power Dissipation                 | $P_C$           | 500          | mW                        |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 250          | $^\circ\text{C}/\text{W}$ |
| Junction and Storage Temperature            | $T_J, T_{STG}$  | 150, -55~150 | $^\circ\text{C}$          |

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

| Parameter   | Symbol        | Min. | Typ. | Max. | Unit          | Test Condition   |
|---|---------------|------|------|------|---------------|--|
| Collector-base breakdown voltage                  | $V_{(BR)CBO}$ | -40  | -    | -    | V             | $I_C = -50\mu\text{A}, I_E = 0$                              |
| Collector-emitter breakdown voltage               | $V_{(BR)CEO}$ | -32  | -    | -    | V             | $I_C = -100\mu\text{A}, I_B = 0$                             |
| Emitter-base breakdown voltage                    | $V_{(BR)EBO}$ | -5   | -    | -    | V             | $I_E = -50\mu\text{A}, I_C = 0$                              |
| Collector cut-off current                         | $I_{CBO}$     | -    | -    | -1   | $\mu\text{A}$ | $V_{CB} = -20\text{V}, I_E = 0$                              |
| Emitter cut-off current                           | $I_{EBO}$     | -    | -    | -1   | $\mu\text{A}$ | $V_{EB} = -4\text{V}, I_C = 0$                               |
| Collector-emitter saturation voltage <sup>1</sup> | $V_{CE(sat)}$ | -    | -    | -0.8 | V             | $I_C = -2\text{A}, I_B = -200\text{mA}$                      |
| DC current gain <sup>1</sup>                      | $h_{FE}$      | 120  | -    | 390  |               | $V_{CE} = -3\text{V}, I_C = -500\text{mA}$                   |
| Transition frequency                              | $f_T$         | -    | 100  | -    | MHz           | $V_{CE} = -5\text{V}, I_C = -500\text{mA}, f = 30\text{MHz}$ |
| Output Capacitance                                | $C_{OB}$      | -    | 50   | -    | pF            | $V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$             |

Notes:

1. Measured by pulse current.

**CHARACTERISTIC CURVES**

