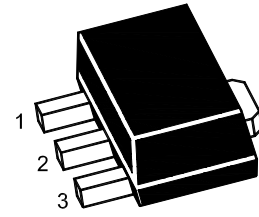


**Features**

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage

**SOT-89**

1.Base 2.Collector 3.Emitter

**Absolute Maximum Ratings** ( $T_a=25^{\circ}\text{C}$  unless otherwise specified)

| Parameter                 | Symbol    | Value                                    | Units              |
|---------------------------|-----------|--|--------------------|
| Collector Base Voltage    | $V_{CBO}$ | -100                                     | V                  |
| Collector Emitter Voltage | $V_{CEO}$ | -80                                      | V                  |
| Emitter Base Voltage      | $V_{EBO}$ | -5                                       | V                  |
| Collector Current         | $I_C$     | -1                                       | A                  |
| Peak Collector Current    | $I_{CM}$  | -1.5                                     | A                  |
| Total Power Dissipation   | $P_{tot}$ | 0.5 <sup>(1)</sup><br>1.3 <sup>(2)</sup> | W                  |
| Junction Temperature      | $T_J$     | 150                                      | $^{\circ}\text{C}$ |
| Storage Temperature Range | $T_{stg}$ | - 65 to + 150                            | $^{\circ}\text{C}$ |

Note :1.Device mounted on an FR4 Printed-Circuit Board(PCB), single-sided copper, tin-plated and standard footprint.

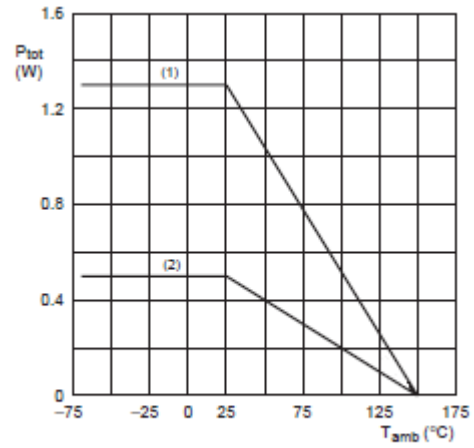
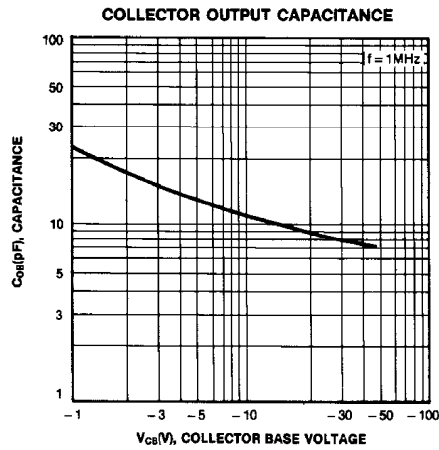
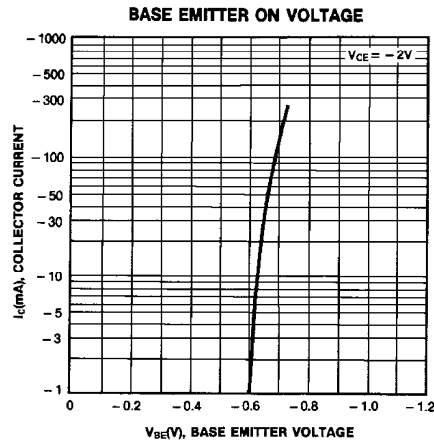
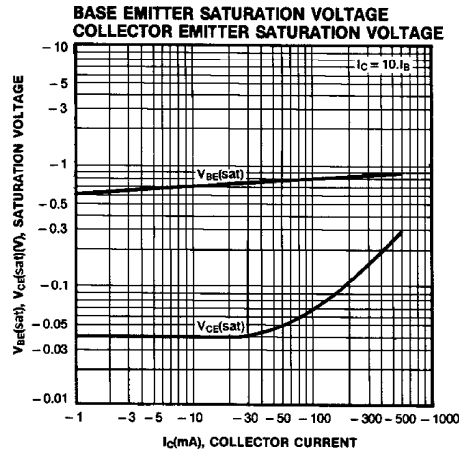
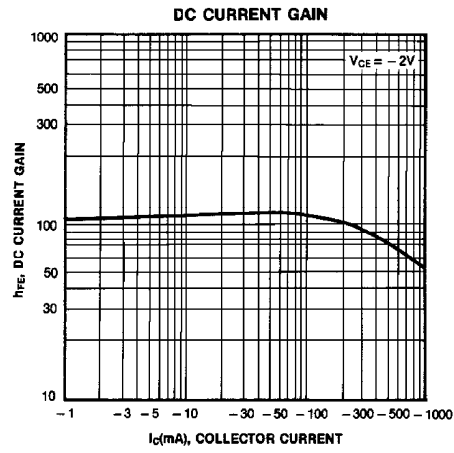
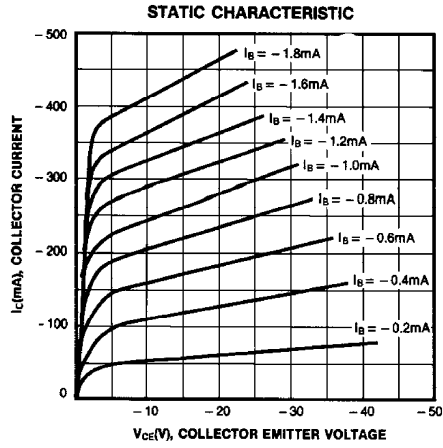
2. Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 6  $\text{cm}^2$

**Electrical Characteristics** ( $T_a=25^{\circ}\text{C}$  unless otherwise specified)

| Parameter   | Symbol                 | Min. | Typ. | Max. | Units |
|---|------------------------|------|------|------|-------|
| DC Current Gain   |                        |      |      |      |       |
| at $V_{CE} = -2\text{ V}$ , $I_C = -5\text{ mA}$  | $h_{FE}$               | 40   | -    | -    | -     |
| at $V_{CE} = -2\text{ V}$ , $I_C = -150\text{ mA}$  | BCX53SQ-10<br>$h_{FE}$ | 63   | -    | 160  | -     |
|   | BCX53SQ-16<br>$h_{FE}$ | 100  | -    | 250  | -     |
| at $V_{CE} = -2\text{ V}$ , $I_C = -500\text{ mA}$  | $h_{FE}$               | 25   | -    | -    | -     |
| Collector Base Cutoff Current at $V_{CB} = -30\text{ V}$                                      | $-I_{CBO}$             | -    | -    | 100  | nA    |
| Emitter Base Cutoff Current at $V_{EB} = -5\text{ V}$   | $-I_{EBO}$             | -    | -    | 100  | nA    |
| Collector Base Breakdown Voltage at $I_C = -100\text{ }\mu\text{A}$                           | $-V_{(BR)CBO}$         | 100  | -    | -    | V     |
| Collector Emitter Breakdown Voltage at $I_C = -1\text{ mA}$                                   | $-V_{(BR)CEO}$         | 80   | -    | -    | V     |
| Emitter Base Breakdown Voltage at $I_E = -100\text{ }\mu\text{A}$                             | $-V_{(BR)EBO}$         | 5    | -    | -    | V     |
| Collector Emitter Saturation Voltage at $I_C = -500\text{ mA}$ , $I_B = -50\text{ mA}$        | $-V_{CE(sat)}$         | -    | -    | 0.5  | V     |
| Base Emitter Voltage at $V_{CE} = -2\text{ V}$ , $I_C = -500\text{ mA}$                       | $-V_{BE}$              | -    | -    | 1    | V     |
| Transition Frequency at $V_{CE} = -5\text{ V}$ , $I_C = -50\text{ mA}$ , $f = 100\text{ MHz}$ | $f_T$                  | -    | 145  | -    | MHz   |
| Collector Capacitance at $V_{CB} = -15\text{ V}$ , $f = 1\text{ MHz}$                         | $C_c$                  | -    | 15   | -    | pF    |



Typical Characteristic Curves



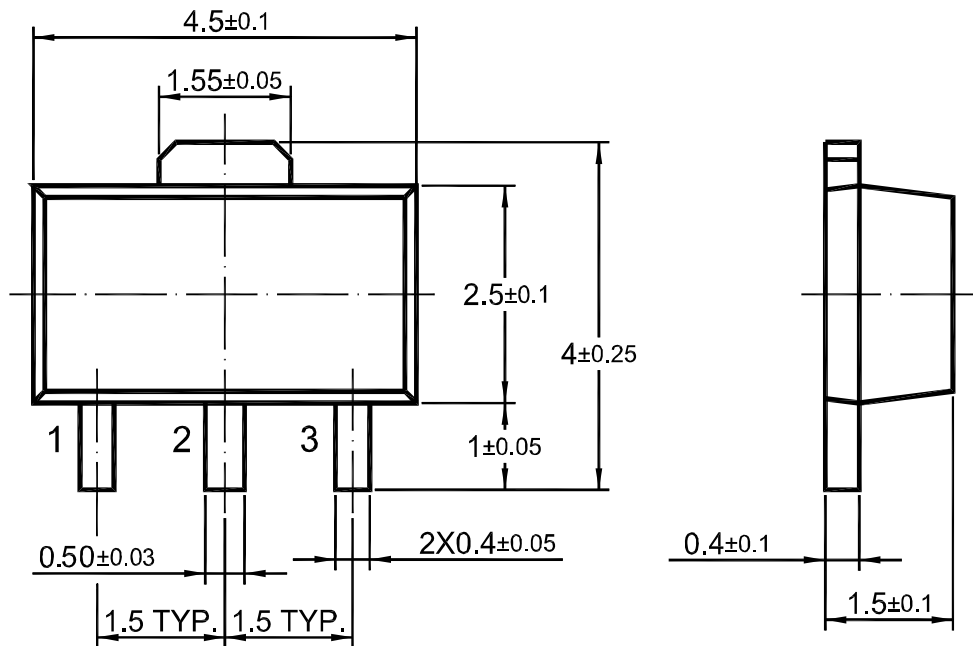
- (1) FR4 PCB, mounting pad for collector 6 cm<sup>2</sup>
- (2) FR4 PCB, standard footprint

Power derating curves

**Package Outline**

SOT-89

Dimensions in mm

**Ordering information**

| Device  | Package | Shipping          |
|---------|---------|-------------------|
| BCX53SQ | SOT-89  | 1000PCS/Reel&Tape |

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