

## SOT-89-3L Plastic-Encapsulate Transistors (NPN)

### Features

- PNP Complements to BCX53
- Low Voltage
- High Current

### Absolute Maximum Ratings( $T_A=25^{\circ}\text{C}$ )

| Symbol          | Parameter                                        | Value      | Unit                 |
|-----------------|--------------------------------------------------|------------|----------------------|
| $V_{CB0}$       | Collector-Base Voltage                           | 100        | V                    |
| $V_{CE0}$       | Collector-Emitter Voltage                        | 80         | V                    |
| $V_{EB0}$       | Emitter-Base Voltage                             | 5          | V                    |
| $I_C$           | Collector Current                                | 1          | A                    |
| $I_B$           | Base Current                                     | 0.1        | A                    |
| $I_{BM}$        | Peak base Current (tp<1ms)                       | 0.2        | A                    |
| $P_C$           | Collector Power Dissipation                      | 500        | mW                   |
| $R_{\theta JA}$ | Thermal Resistance From Junction To Ambient      | 250        | $^{\circ}\text{C/W}$ |
| $T_J, T_{stg}$  | Operation Junction And Storage Temperature Range | -55 ~ +150 | $^{\circ}\text{C}$   |
| $T_{opr}$       | Operation Temperature Range                      | -25~+125   | $^{\circ}\text{C/W}$ |

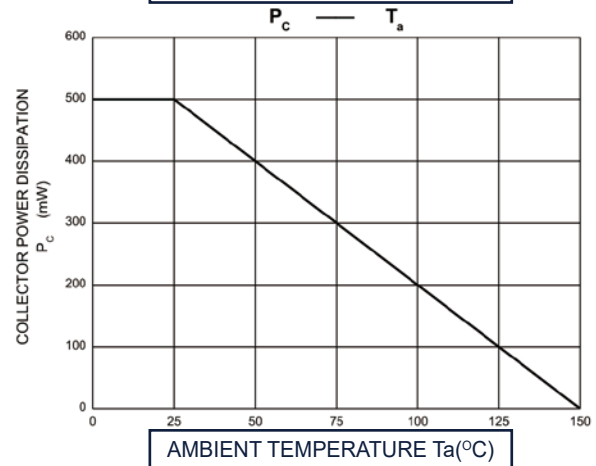
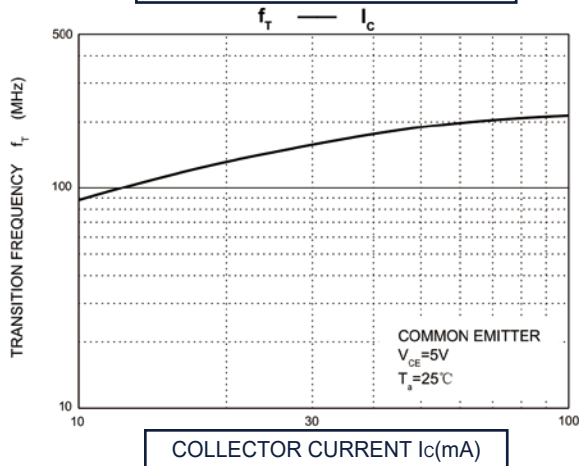
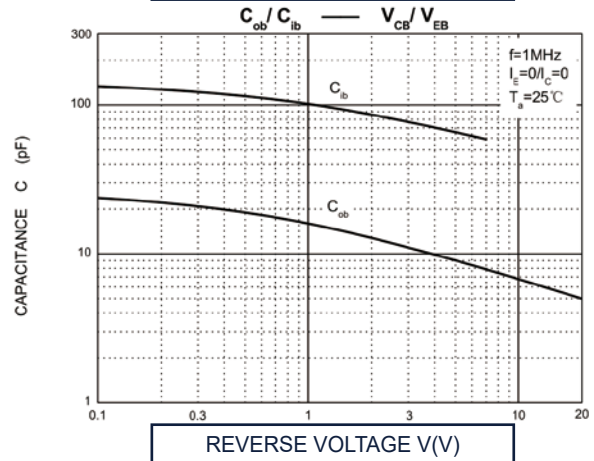
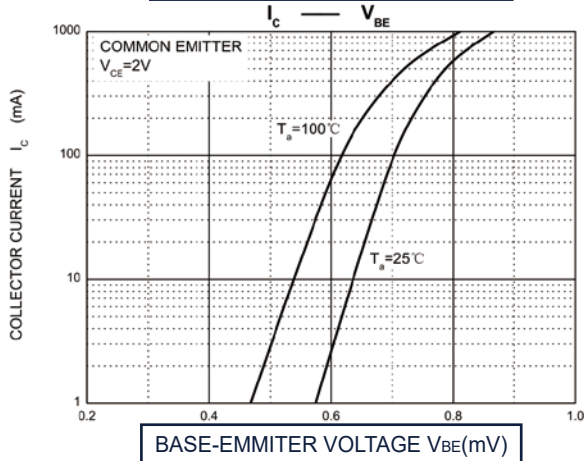
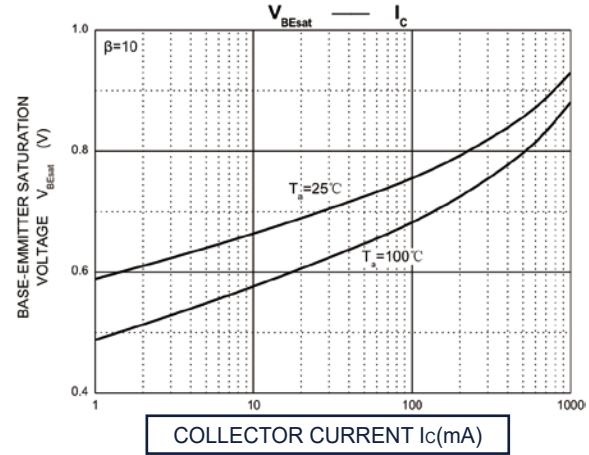
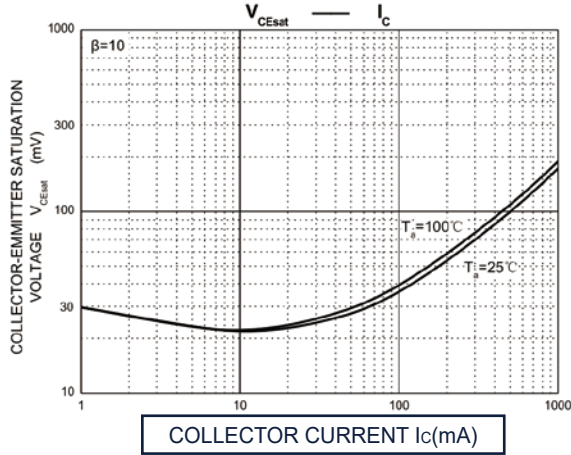
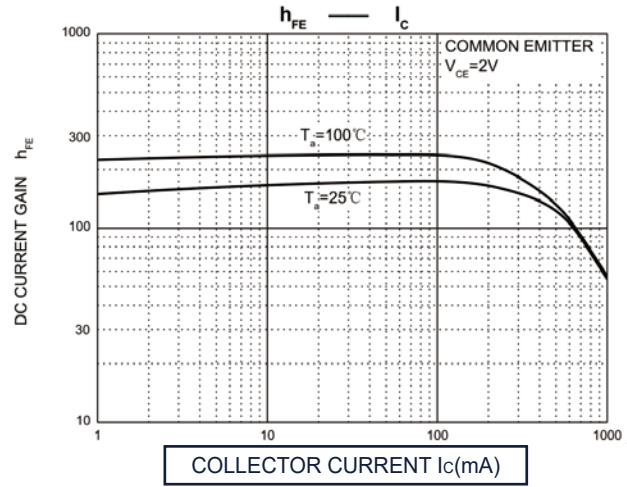
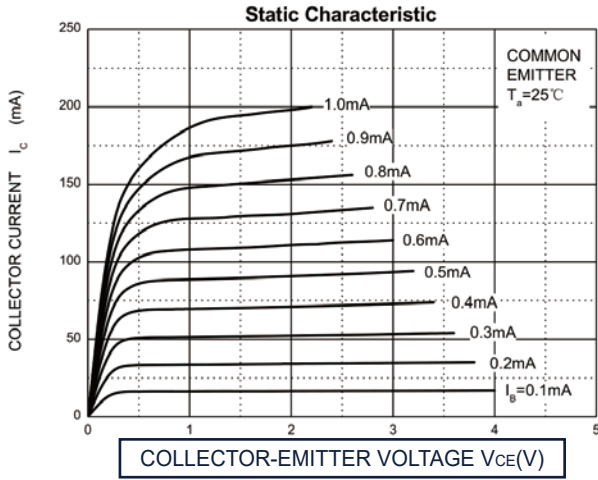
### Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Symbol        | Parameter                            | Test conditions                                      | Min | Typ | Max | Unit          |
|---------------|--------------------------------------|------------------------------------------------------|-----|-----|-----|---------------|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage     | $I_C=100\mu\text{A}, I_E=0$                          | 100 |     |     | V             |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage  | $I_C=10\text{mA}, I_B=0$                             | 80  |     |     | V             |
| $V_{(BR)EBO}$ | Emitter-base breakdown voltage       | $I_E=10\mu\text{A}, I_C=0$                           | 5   |     |     | V             |
| $I_{CBO}$     | Collector cut-off current            | $V_{CB}=30\text{V}, I_E=0$                           |     |     | 0.1 | $\mu\text{A}$ |
| $I_{EBO}$     | Emitter cut-off current              | $V_{EB}=5\text{V}, I_C=0$                            |     |     | 0.1 | $\mu\text{A}$ |
| $h_{FE(1)}$   | DC current gain                      | $V_{CE}=2\text{V}, I_C=5\text{mA}$                   | 40  |     |     |               |
| $h_{FE(2)}$   |                                      | $V_{CE}=2\text{V}, I_C=150\text{mA}$                 | 63  |     | 250 |               |
| $h_{FE(3)}$   |                                      | $V_{CE}=2\text{V}, I_C=0.5\text{A}$                  | 25  |     |     |               |
| $V_{CE(sat)}$ | Collector-emitter saturation voltage | $I_C=0.5\text{A}, I_B=50\text{mA}$                   |     |     | 0.5 | V             |
| $V_{BE}$      | Base -emitter voltage                | $V_{CE}=2\text{V}, I_C=0.5\text{A}$                  |     |     | 1   | V             |
| $f_T$         | Transition frequency                 | $V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ |     | 130 |     | MHz           |

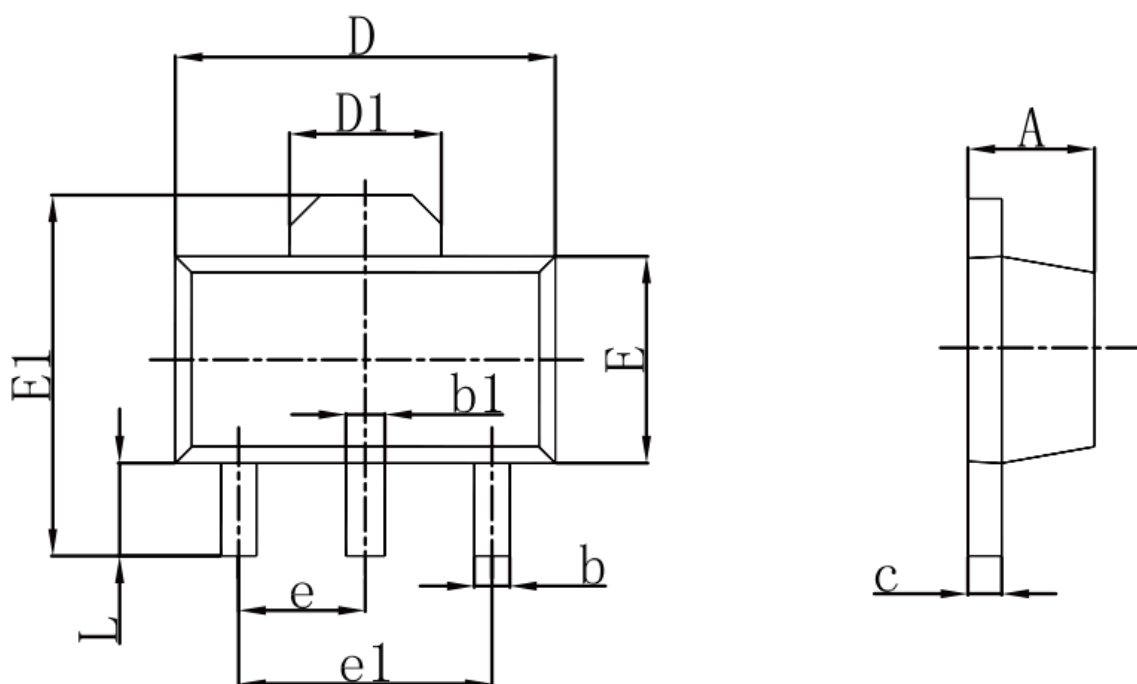
### Ordering information

| Product ID | Pack      | Naming rule                                                                                                                                                           | Marking | $h_{FE(1)}$ | Qty(PCS) |
|------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------|----------|
| BCX56-16   | SOT-89-3L | <div style="border: 1px solid black; padding: 5px; display: inline-block;"> BCX56-16 </div><br><div style="text-align: center;"> ↓<br/> 产品名称<br/> product name </div> | BL      | 100-250     | 1000     |

## Typical Characteristics



# SOT-89-3L Package Outline 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 |