# TL-BCX56-16

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

## Features


SOT-89-3L

- PNP Complements to BCX53
- Low Voltage
- High Current

## Absolute Maximum Ratings($T_A$=25℃)

| Symbol | Parameter | Value | Uniat |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 100 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 80 | V |
| $V_{EBO}$ | 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 | ℃/W |
| $T_J$,$T_{stg}$ | Operation Junction And Storage Temperature Range | -55 ~ +150 | ℃ |
| $T_{opr}$ | Operation Temperature Range | -25~+125 | ℃/W |

## Electrical Characteristics ($T_A$=25℃ unless otherwise specified)

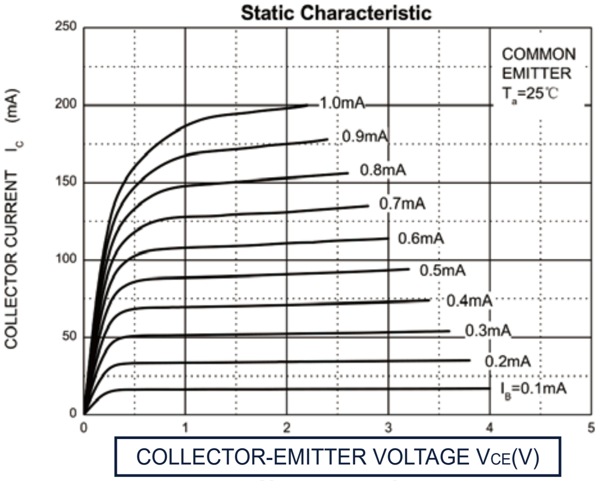
| Symbol | Parameter | Test conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_{(BR)CBO}$ | Collector-base breakdown voltage | $I_C$=100μA, $I_E$=0 | 100 | | | V |
| $V_{(BR)CEO}$ | Collector-emitter breakdown voltage | $I_C$=10mA, $I_B$=0 | 80 | | | V |
| $V_{(BR)EBO}$ | Emitter-base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

## Ordering information

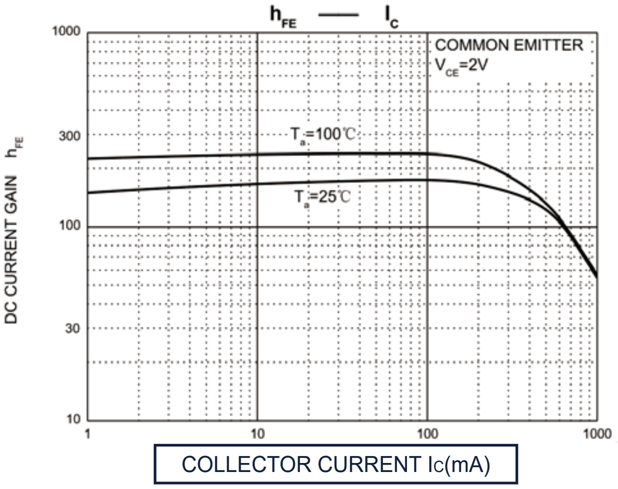
| Product ID | Pack | Naming rule | Marking | hFE(1) | Qty(PCS) |
|---|---|---|---|---|---|
| BCX56-16 | SOT-89-3L | BCX56-16<br>产品名称<br>product name | BL | 100-250 | 1000 |

## Typical Characteristics

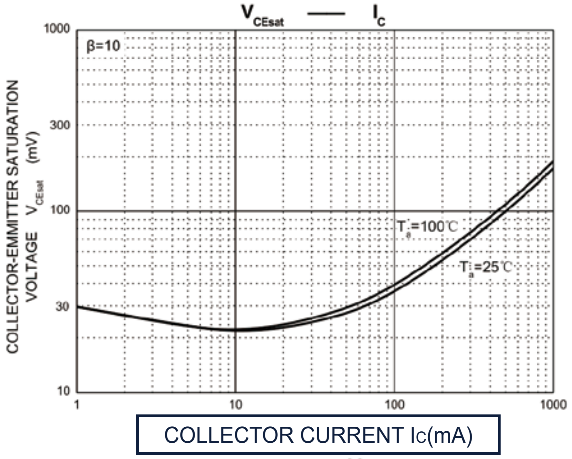
Static Characteristic



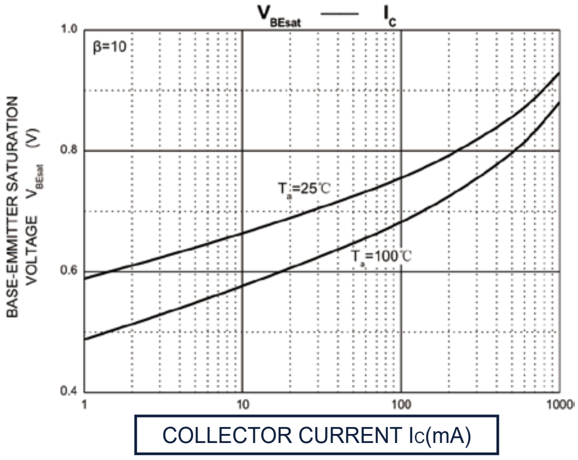
$h_{FE}$ — $I_C$



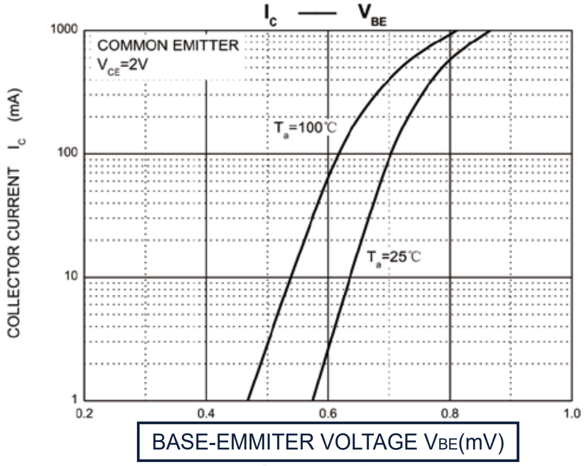
$V_{CEsat}$ — $I_C$



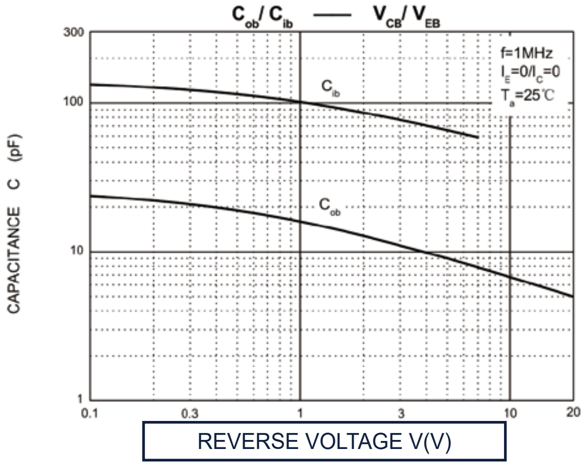
$V_{BEsat}$ — $I_C$



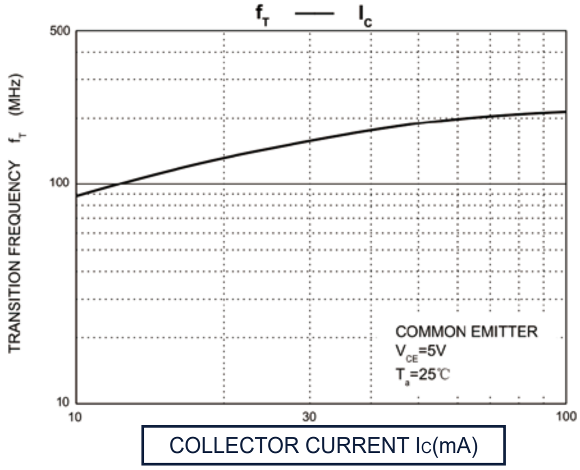
$I_C$ — $V_{BE}$



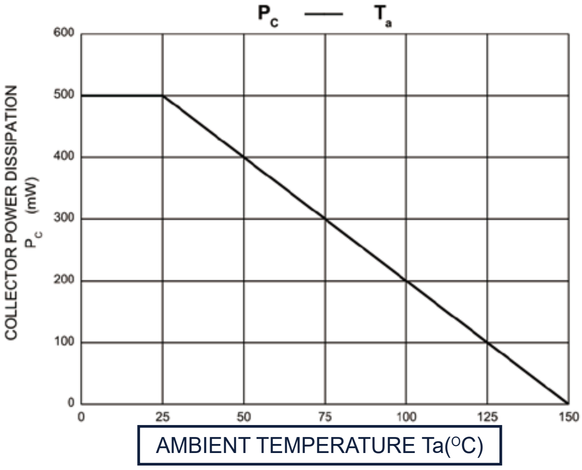
$C_{ob}$ / $C_{ib}$ — $V_{CB}$/ $V_{EB}$



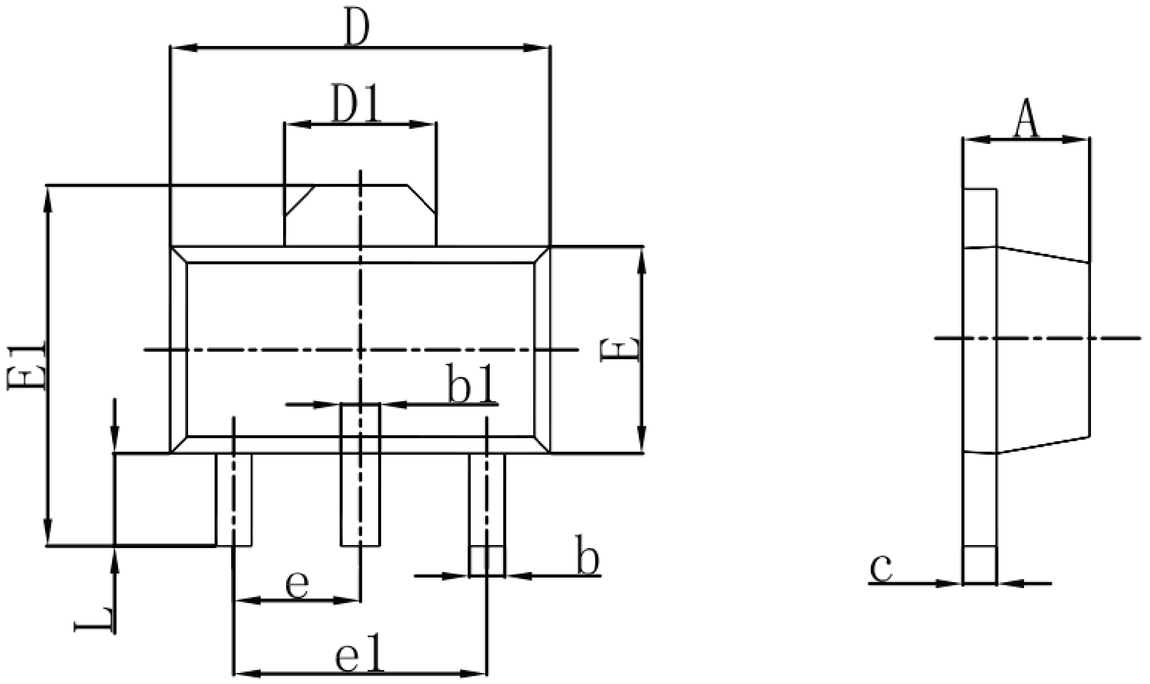
$f_T$ — $I_C$



$P_C$ — $T_a$



## 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 |