## DESCRIPTION

The BCX56, BCX56-10L, BCX56-16L are available in SOT89-3 package.

## FEATURE

- High current (max. 1A)
- Low voltage (max. 80V)
- NPN Transistors

## ORDERING INFORMATION

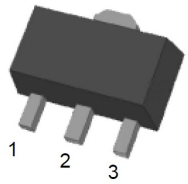
| Package Type | Part Number |
|---|---|
| SOT89-3 | BCX56 |
| | BCX56-10L |
| | BCX56-16L |
| Note | SPQ: 1,000pcs/Reel |
| AiT provides all RoHS Compliant Products | |
| | |

| Range | BCX56 | BCX56-10L | BCX56-16L |
|---|---|---|---|
| $h_{FE}$ | 63~250 | 63~160 | 100~250 |

## APPLICATIONS

Driver stages of audio and video amplifiers

## PIN DESCRIPTION




| Pin# | |
|---|---|
| 1 | BASE |
| 2 | COLLECTOR |
| 3 | EMITTER |

## ABSOLUTE MAXIMUM RATINGS

| | |
|---|---|
| $V_{CEO}$, Collector-Emitter Voltage | 80V |
| $V_{CBO}$, Collector-Base Voltage | 100V |
| $V_{EBO}$, Emitter-Base Voltage | 5V |
| $I_C$, Collector Current (DC) | 1A |
| $I_{CM}$, Peak Collector Current | 1.5A |
| $I_{BM}$, Peak Base Current | 0.2A |
| $P_C$, Collector Power Dissipation | 0.5W |
| $T_J$, Junction Temperature | 150°C |
| $T_{STG}$, Storage Temperature Range | -55°C ~+150°C |

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Note: Device mounted on a printed-circuit board, single sided copper, tinplated, mounting pad for collector 6cm2.

## ELECTRICAL CHARACTERISTICS

$T_A$=25°C, unless otherwise specified.

| Parameter | Symbol | Conditions | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Collector Cut-Off Current | $I_{CBO}$ | $V_{CB}$=30V, $I_E$=0 | - | - | 100 | nA |
| | | $V_{CB}$=30V, $I_E$=0<br>$T_J$=150°C | - | - | 10 | μA |
| Emitter Cut-Off Current | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | - | - | 100 | nA |
| DC Current Gain | $h_{FE}$ | $V_{CE}$=2V, $I_C$=5mA | 63 | - | - | - |
| | | $V_{CE}$=2V, $I_C$=150mA | 63 | - | 250 | |
| | | $V_{CE}$=2V, $I_C$=500mA | 40 | - | - | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C$=500mA, $I_B$=50mA, | - | - | 0.5 | V |
| Base-Emitter Voltage | $V_{BE}$ | $I_C$=500mA, $V_{CE}$=2V | - | - | 1 | V |
| Transition Frequency | $f_T$ | $I_C$=10mA, $V_{CE}$=5V<br>f=100MHz | - | 130 | | MHz |

## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Static Characteristic

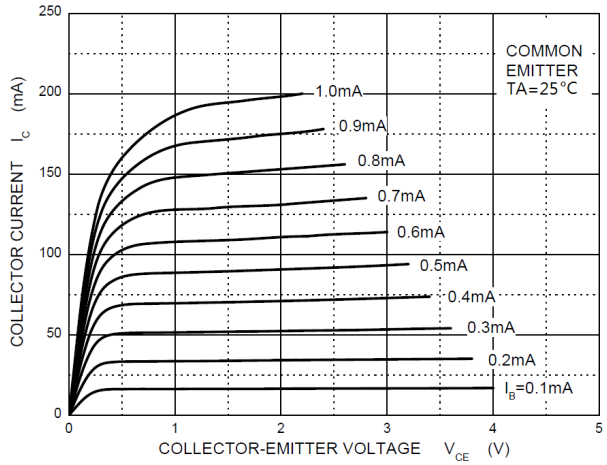



Fig 2. $h_{FE}$ - Ic

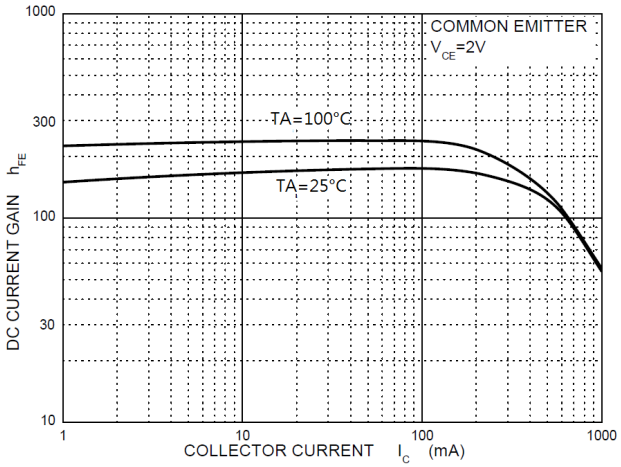


Fig 3. $V_{CEsat}$ - Ic

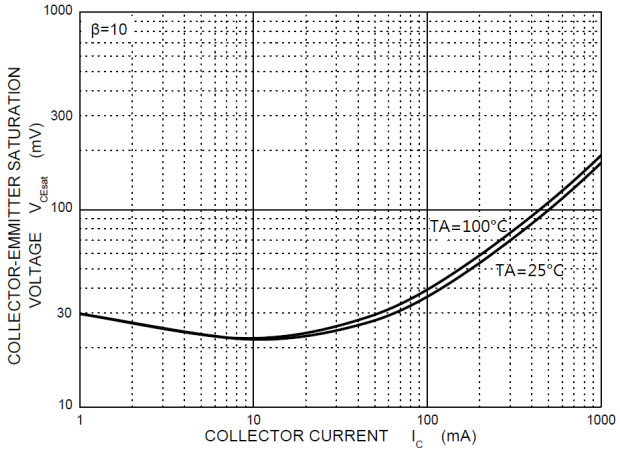



Fig 4. $V_{BEsat}$ - Ic

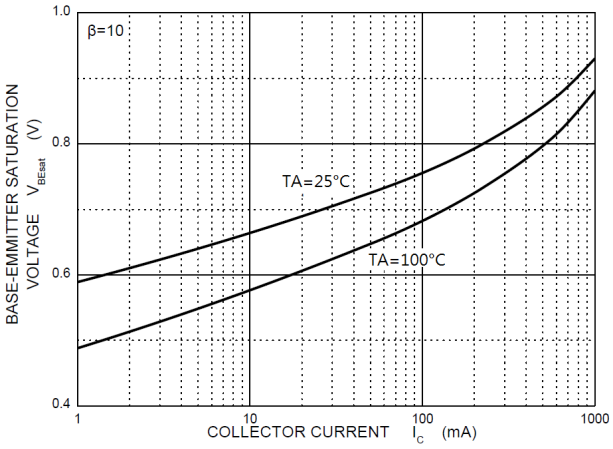



Fig 5. Ic - $V_{BE}$

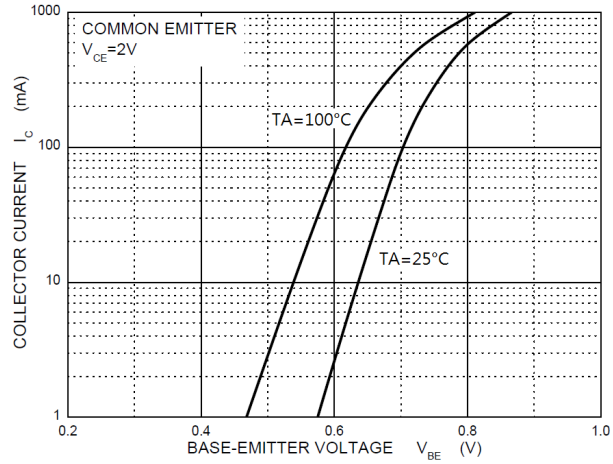



Fig 6. $C_{ob}/C_{ib}$ – $V_{CB}/V_{EB}$

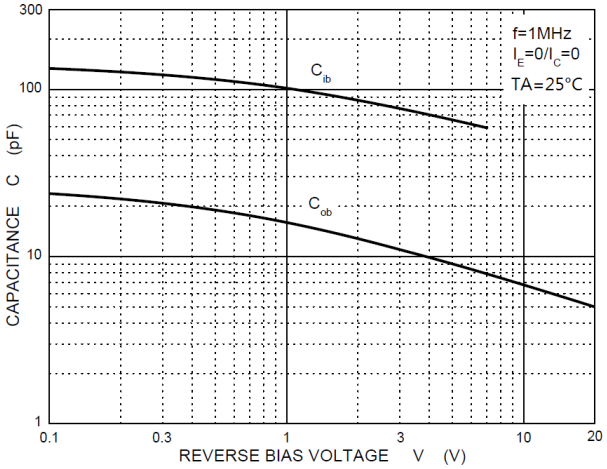



Fig 7. $f_T$ - Ic

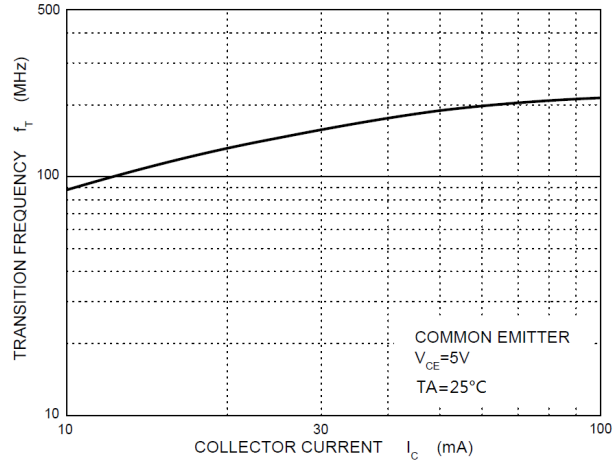
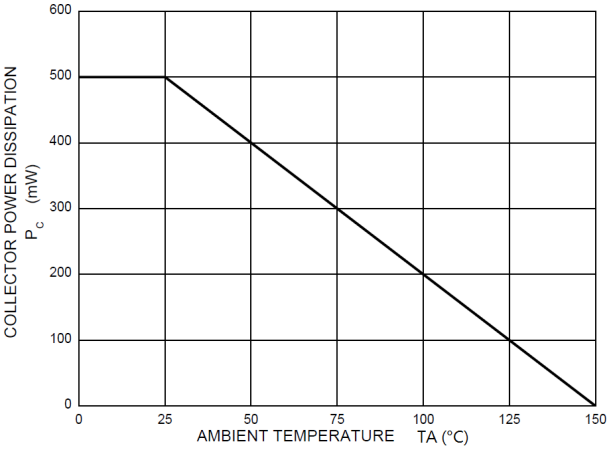
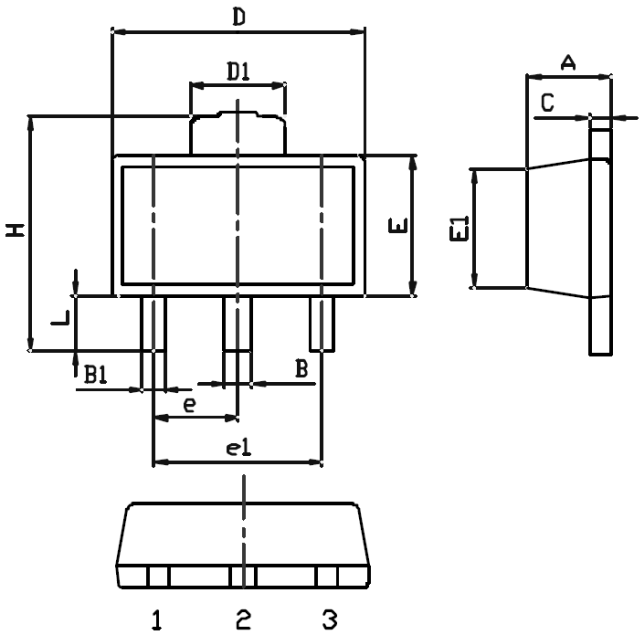



Fig 8. Pc - TA



## PACKAGE INFORMATION

Dimension in SOT89-3 (Unit: mm)




| Symbol | Min. | Max. |
|---|---|---|
| A | 1.40 | 1.60 |
| B | 0.46 | 0.56 |
| B1 | 0.36 | 0.48 |
| C | 0.35 | 0.44 |
| D | 4.40 | 4.60 |
| D1 | 1.62 | 1.83 |
| E | 2.29 | 2.60 |
| E1 | 2.29 | 2.60 |
| e | 1.50 REF | |
| e1 | 3.00 REF | |
| H | 3.94 | 4.25 |
| L | 0.89 | 1.20 |

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