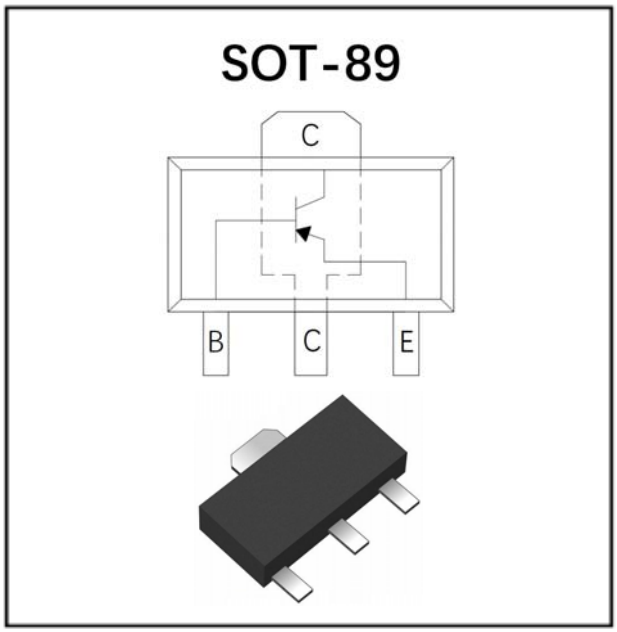
# PNP General Purpose Amplifier




## Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix ”HF”
- Moitsure Sensitivity Level 1
- Low collector-emitter saturation voltage

## Mechanical Data

- **Package**: SOT-89

Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free

- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking:

| | |
|---|---|
| BCX52 | AE |
| BCX52-16 | AM |

## ■Maximum Ratings (Ta=25℃ unless otherwise noted)

| Item | Symbol | Unit | Conditions | Value |
|---|---|---|---|---|
| Minimum Collector-Emitter Voltage | $V_{CEO}$ | V | $I_C$=-1mA, $I_B$=0 | -60 |
| Minimum Collector-Base Voltage | $V_{CBO}$ | V | $I_C$=-100uA, $I_E$=0 | -60 |
| Minimum Emitter-Base Voltage | $V_{EBO}$ | V | $I_E$=-100uA, $I_C$=0 | -5 |
| Collector Current | $I_C$ | A | | -1 |
| Collector Power Dissipation | $P_C$ | mW | | 500 |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | ℃/W | | 250 |
| Operation Junction Temperature | $T_j$ | ℃ | | -55 to +150 |
| Storage Temperature | $T_{stg}$ | ℃ | | -55 to +150 |

## ■Electrical Characteristics (Ta=25℃ unless otherwise noted)

| Item | Symbol | Unit | Conditions | Min | TYP | Max |
|---|---|---|---|---|---|---|
| Collector-Emitter Voltage | $V_{CEO}$ | V | $I_C$=-1mA, $I_B$=0 | -60 | | |
| Collector-Base Voltage | $V_{CBO}$ | V | $I_C$=-100uA, $I_E$=0 | -60 | | |
| Emitter-Base Voltage | $V_{EBO}$ | V | $I_E$=-100uA, $I_C$=0 | -5 | | |
| Collector-Base cut-off current | $I_{CBO}$ | nA | $V_{CB}$=-30V | | | -100 |
| Emitter-Base cut-off current | $I_{EB0}$ | nA | $V_{EB}$=-5V | | | -100 |
| DC Current Gain | $h_{FE}1$ | | $V_{CE}$=-2V $I_C$=-150mA | 63 | | 250 |
| | $h_{FE}2$ | | $V_{CE}$=-2V $I_C$=-5mA | 63 | | |
| | $h_{FE}3$ | | $V_{CE}$=-2V $I_C$=-500mA | 40 | | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | V | $I_C$=-500mA $I_B$=-50mA | | | -0.5 |
| Base-Emitter Voltage | $V_{BE}$ | V | $V_{CE}$=-2V $I_C$=-500mA | | | -1 |
| Transition Frequency | $f_T$ | MHz | $I_C$=-10mA, $V_{CE}$=-5V,f=100MHz | | 50 | |

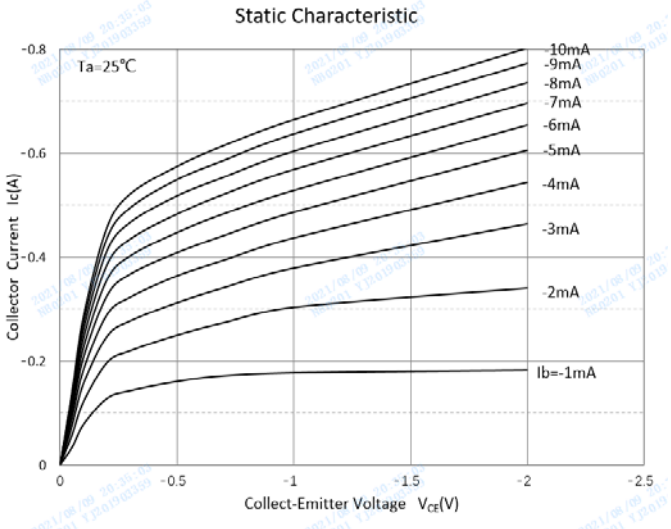
## ■Ordering Information (Example)

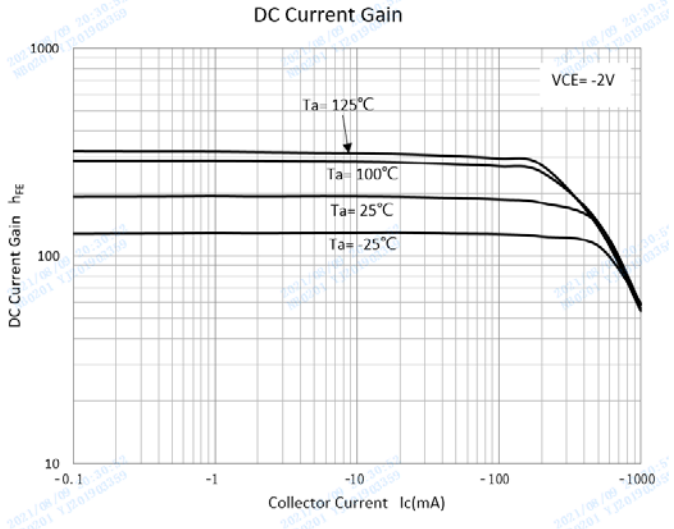
| PREFERED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|---|
| BCX52 | F2 | Approximate 0.055 | 1000 | 8000 | 32000 | 7” reel |

## ■ Classification of $h_{FE}$

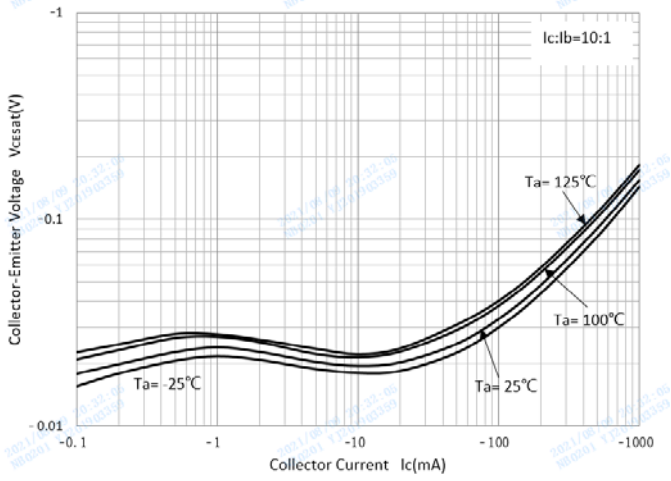
| Rank | BCX52 | BCX52-16 |
|---|---|---|
| Range | 63-250 | 100-250 |

## ■Characteristics (Typical)

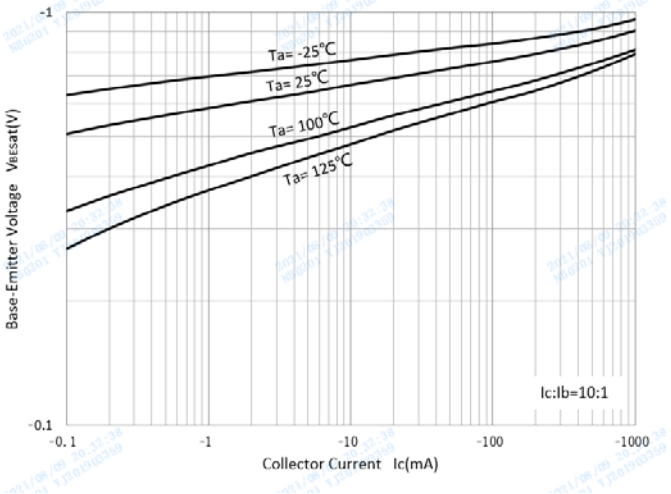


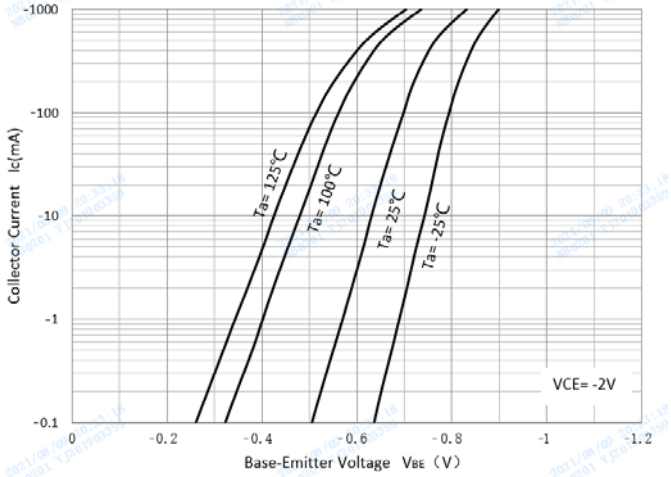
Collector-Emitter Saturation Voltage



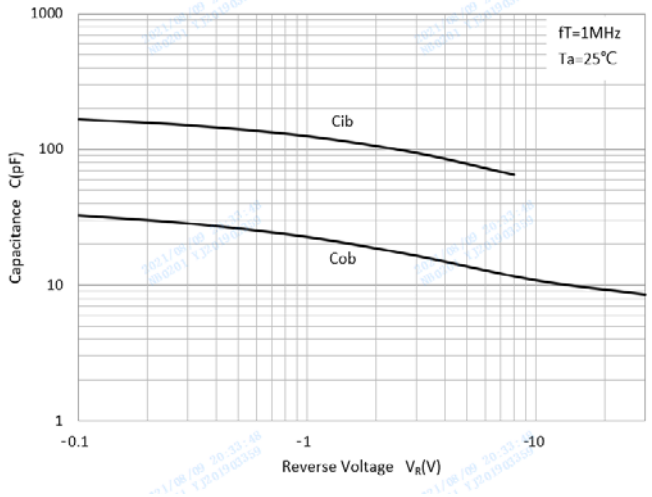

Base-Emitter Saturation Voltage



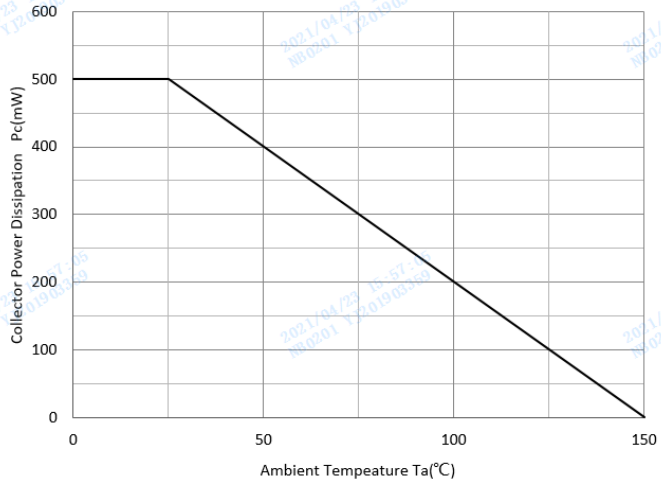

Base-Emitter On Voltage



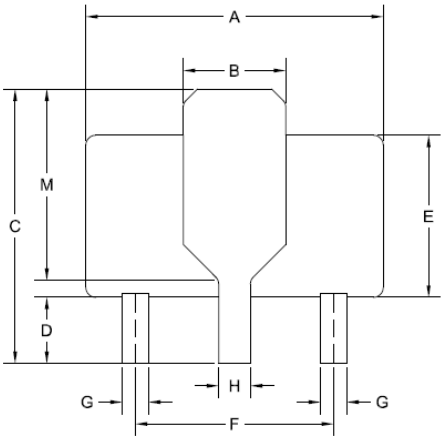

Cob/Cib-$V_{CB}$/$V_{EB}$



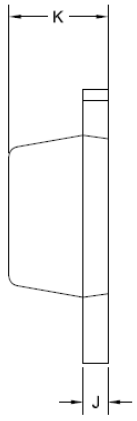

Collector Power Derating Curve



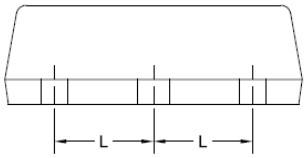
## ■SOT-89 Package Outline Dimensions




BOTTOM VIEW



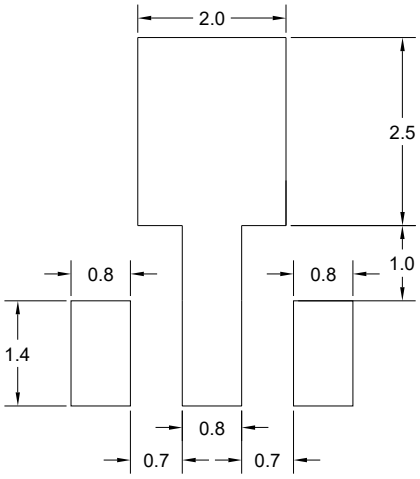

SIDE VIEW




SIDE VIEW

| DIMENSIONS | | | | |
|---|---|---|---|---|
| DIM | INCHES | | MM | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.173 | 0.181 | 4.400 | 4.600 |
| B | 0.061 TYP. | | 1.550 TYP. | |
| C | 0.155 | 0.167 | 3.940 | 4.250 |
| D | 0.031 | 0.047 | 0.800 | 1.200 |
| E | 0.094 | 0.102 | 2.400 | 2.600 |
| F | 0.118 TYP. | | 3.00 TYP. | |
| G | 0.014 | 0.019 | 0.360 | 0.480 |
| H | 0.017 | 0.022 | 0.440 | 0.560 |
| J | 0.014 | 0.017 | 0.350 | 0.440 |
| K | 0.055 | 0.063 | 1.400 | 1.600 |
| L | 0.059 TYP. | | 1.500 TYP. | |
| M | 0.108 TYP. | | 2.750 TYP. | |

## ■SOT-89 Suggested Pad Layout




UNIT:MM

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