



# DONGGUAN NANJING ELECTRONICS LTD.,

## SOT-89-3L Plastic-Encapsulate Transistors

### BCX54,BCX55,BCX56 TRANSISTOR (NPN)

#### FEATURES

- PNP Complements to BCX51,BCX52,BCX53
- Low Voltage
- High Current

#### APPLICATIONS

- Driver Stages of Audio Amplifiers

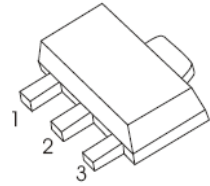
**MARKING:BCX54:BA, BCX54-10:BC, BCX54-16:BD**

**BCX55:BE, BCX55-10:BG, BCX55-16BM**

**BCX56:B H, BCX56-10:BK, BCX56-16:BL**

#### SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

| Symbol                 | Parameter                                   |       | Value    | Unit |
|------------------------|---------------------------------------------|-------|----------|------|
| <b>V<sub>CBO</sub></b> | Collector-Base Voltage                      | BCX54 | 45       | V    |
|                        |                                             | BCX55 | 60       |      |
|                        |                                             | BCX56 | 100      |      |
| <b>V<sub>CEO</sub></b> | Collector-Emitter Voltage                   | BCX54 | 45       | V    |
|                        |                                             | BCX55 | 60       |      |
|                        |                                             | BCX56 | 80       |      |
| <b>V<sub>EBO</sub></b> | Emitter-Base Voltage                        |       | 5        | V    |
| <b>I<sub>C</sub></b>   | Collector Current                           |       | 1        | A    |
| <b>P<sub>C</sub></b>   | Collector Power Dissipation                 |       | 500      | mW   |
| <b>R<sub>θJA</sub></b> | Thermal Resistance From Junction To Ambient |       | 250      | °C/W |
| <b>T<sub>j</sub></b>   | Junction Temperature                        |       | 150      | °C   |
| <b>T<sub>stg</sub></b> | Storage Temperature                         |       | -55~+150 | °C   |

| Parameter                            | Symbol          | Test conditions                 | Min   | Typ | Max | Unit    |
|--------------------------------------|-----------------|---------------------------------|-------|-----|-----|---------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$   | $I_C=100\mu A, I_E=0$           | BCX54 | 45  |     | V       |
|                                      |                 |                                 | BCX55 | 60  |     |         |
|                                      |                 |                                 | BCX56 | 100 |     |         |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}^*$ | $I_C=10mA, I_B=0$               | BCX54 | 45  |     | V       |
|                                      |                 |                                 | BCX55 | 60  |     |         |
|                                      |                 |                                 | BCX56 | 80  |     |         |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$   | $I_E=100\mu A, I_C=0$           | 5     |     |     | V       |
| Collector cut-off current            | $I_{CBO}$       | $V_{CB}=30V, I_E=0$             |       |     | 0.1 | $\mu A$ |
| Emitter cut-off current              | $I_{EBO}$       | $V_{EB}=5V, I_C=0$              |       |     | 0.1 | $\mu A$ |
| DC current gain                      | $h_{FE(1)}^*$   | $V_{CE}=2V, I_C=5mA$            | 40    |     |     |         |
|                                      | $h_{FE(2)}^*$   | $V_{CE}=2V, I_C=150mA$          | 63    |     | 250 |         |
|                                      | $h_{FE(3)}^*$   | $V_{CE}=2V, I_C=0.5A$           | 25    |     |     |         |
| Collector-emitter saturation voltage | $V_{CE(sat)}^*$ | $I_C=0.5A, I_B=50mA$            |       |     | 0.5 | V       |
| Base -emitter voltage                | $V_{BE}^*$      | $V_{CE}=2V, I_C=0.5A$           |       |     | 1   | V       |
| Transition frequency                 | $f_T$           | $V_{CE}=5V, I_C=10mA, f=100MHz$ |       | 130 |     | MHz     |

#### CLASSIFICATION OF $h_{FE(2)}$

| RANK  | BCX54<br>BCX55<br>BCX56 | BCX54-10<br>BCX55-10<br>BCX56-10 | BCX54-16<br>BCX55-16<br>BCX56-16 |
|-------|-------------------------|----------------------------------|----------------------------------|
| RANGE | 63 - 250                | 63 - 160                         | 100 - 250                        |

Typical Characteristics

BCX54,BCX55,BCX56

