



Micro Commercial Components



Micro Commercial Components  
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# BCX54 BCX54-10 BCX54-16

## NPN Plastic-Encapsulate Transistors

### Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Power Dissipation:  $P_{CM}=0.5W$  ( $T_{amb}=25^{\circ}C$ )
- Collector-Base Voltage:  $V_{(BR)CBO}=100V$
- Marking : BCX54=BA, BCX54-10=BC, BCX54-16=BD
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

### Maximum Ratings

| Symbol    | Rating                                     | Value       | Unit        |
|-----------|--|-------------|-------------|
| $V_{CEO}$ | Collector-Emitter Voltage                  | 45          | V           |
| $V_{CBO}$ | Collector-Base Voltage                     | 45          | V           |
| $V_{EBO}$ | Emitter-Base Voltage                       | 5.0         | V           |
| $I_C$     | Collector Current DC                       | 1.0         | A           |
| $I_{CM}$  | Peak Collector Current, single pulse < 1mS | 2.0         | A           |
| $P_C$     | Collector Power Dissipation                | 0.5         | W           |
| $T_J$     | Junction Temperature                       | 150         | $^{\circ}C$ |
| $T_{STG}$ | Storage Temperature                        | -55 to +150 | $^{\circ}C$ |

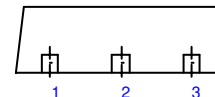
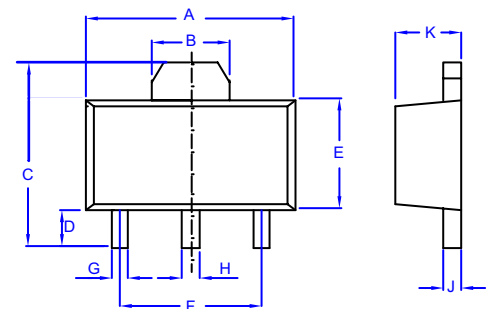
### Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol | Parameter | Min | Typ | Max | Units |
|--------|-----------|-----|-----|-----|-------|
|--------|-----------|-----|-----|-----|-------|

#### OFF CHARACTERISTICS

|               |  |     |     |     |              |
|---------------|--|-----|-----|-----|--------------|
| $V_{CBO}$     | Collector-Base Voltage<br>( $I_C=100\mu A_{dc}$ , $I_E=0$ )              | 45  | --- | --- | Vdc          |
| $V_{CEO}$     | Collector-Emitter Voltage<br>( $I_C=10mAdc$ , $I_B=0$ )                  | 45  | --- | --- | Vdc          |
| $V_{EBO}$     | Emitter-Base Voltage<br>( $I_E=100\mu A_{dc}$ , $I_C=0$ )                | 5.0 | --- | --- | Vdc          |
| $I_{CBO}$     | Collector Cutoff Current<br>( $V_{CB}=30Vdc$ , $I_E=0$ )                 | --- | --- | 0.1 | $\mu A_{dc}$ |
| $I_{EBO}$     | Emitter Cutoff Current<br>( $V_{EB}=5.0Vdc$ , $I_C=0$ )                  | --- | --- | 0.1 | $\mu A_{dc}$ |
| $h_{FE(1)}$   | DC Current Gain<br>( $V_{CE}=2.0Vdc$ , $I_C=150mAdc$ )                   |     |     |     |              |
|               | BCX54  | 63  | --- | 250 | ---          |
|               | BCX54-10   | 63  | --- | 160 | ---          |
|               | BCX54-16   | 100 | --- | 250 | ---          |
| $h_{FE(2)}$   | DC Current Gain<br>( $V_{CE}=2.0Vdc$ , $I_C=5.0mAdc$ )                   | 40  | --- | --- | ---          |
| $h_{FE(3)}$   | DC Current Gain<br>( $V_{CE}=2.0Vdc$ , $I_C=500mAdc$ )                   | 25  | --- | --- | ---          |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C=500mAdc$ , $I_B=50mAdc$ ) | --- | --- | 0.5 | Vdc          |
| $V_{BE(sat)}$ | Base-Emitter Voltage<br>( $I_C=500mAdc$ , $V_{CE}=2.0Vdc$ )              | --- | --- | 1.0 | Vdc          |
| $f_T$         | Transition Frequency<br>( $V_{CE}=5Vdc$ , $I_C=10mAdc$ ,<br>$f=100MHz$ ) | --- | 130 | --- | MHz          |

### SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

| DIM | DIMENSIONS |       |      |       | NOTES |
|-----|------------|-------|------|-------|-------|
|     | INCHES     |       | MM   |       |       |
|     | MIN        | MAX   | MIN  | MAX   |       |
| A   | .173       | .181  | 4.39 | 4.60  |       |
| B   | .061       | ----- | 1.55 | ----- | REF.  |
| C   | .154       | .165  | 3.91 | 4.25  |       |
| D   | .031       | .039  | 0.80 | 1.00  |       |
| E   | .092       | .100  | 2.34 | 2.54  |       |
| F   | .118       | ----- | 3.00 | ----- | TYP   |
| G   | .013       | .019  | 0.33 | 0.48  |       |
| H   | .015       | .021  | 0.38 | 0.53  |       |
| J   | .015       | .016  | 0.38 | 0.41  |       |
| K   | .055       | .063  | 1.40 | 1.60  |       |



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## Ordering Information :

| Device         | Packing                  |
|----------------|--------------------------|
| Part Number-TP | Tape & Reel; 1 Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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