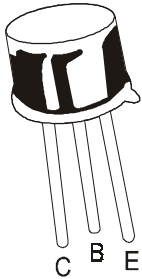


**NPN EPITAXIAL PLANAR SILICON TRANSISTORS**

**BC300, BC301, BC302**



**TO-39  
Metal Can Package**

**NPN SILICON LOW -AND- MEDIUM POWER TRANSISTORS.**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)**

| DESCRIPTION                 | SYMBOL    | BC300 BC301 |     | BC302       | UNITS |
|-----------------------------|-----------|-------------|-----|-------------|-------|
|                             |           |             |     |             |       |
| Collector Emitter Voltage   | $V_{CEO}$ | 80          | 60  | 45          | V     |
| Collector Base Voltage      | $V_{CBO}$ | 120         | 90  | 60          | V     |
| Emitter Base Voltage        | $V_{EBO}$ | 7.0         | 7.0 | 7.0         | V     |
| Collector Current           | $I_C$     |             |     | 500         | mA    |
| Power Dissipation @ Ta=25°C | $P_D$     |             |     | 850         | mW    |
| Junction Temperature        | $T_j$     |             |     | 175         | °C    |
| Storage Temperature Range   | $T_{stg}$ |             |     | -65 to +200 | °C    |

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

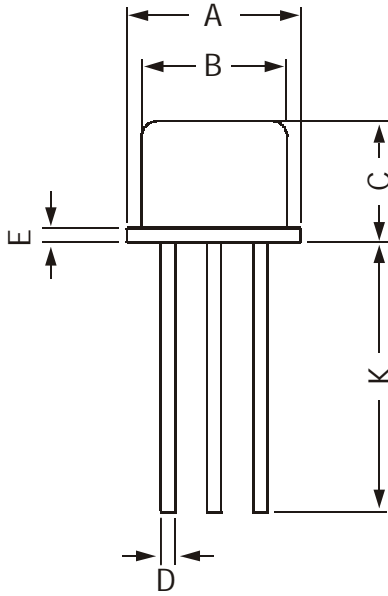
| DESCRIPTION                   | SYMBOL        | TEST CONDITION          | BC300 |     | BC301 |     | BC302 |     | UNITS |
|-------------------------------|---------------|-------------------------|-------|-----|-------|-----|-------|-----|-------|
|                               |               |                         | MIN   | MAX | MIN   | MAX | MIN   | MAX |       |
| Collector Cut off Current     | $I_{CBO}$     | $V_{CB}=120V, I_E=0$    | 20    |     |       |     |       |     | nA    |
|                               |               |                         |       |     | 20    |     |       |     | nA    |
|                               |               |                         |       |     |       |     | 20    |     |       |
| DC Current Gain               | $h_{FE}$      | $I_C=150mA, V_{CE}=10V$ |       |     |       |     |       |     |       |
| BC300/301/302                 |               |                         | 40    | 240 |       |     |       |     |       |
| BC300/301/302-4               |               |                         | 40    | 80  |       |     |       |     |       |
| BC300/301/302-5               |               |                         | 70    | 140 |       |     |       |     |       |
| BC300/301/302-6               |               | $I_C=150mA, V_{CE}=10V$ | 120   | 240 |       |     |       |     |       |
| Collector Emitter Sat Voltage | $V_{CE(Sat)}$ | $I_C=150mA, I_B=15mA$   | ALL   | 0.5 |       |     |       |     | V     |

**DYNAMIC CHARACTERISTICS**

|                      |       |                                 |     |     |  |  |  |  |
|----------------------|-------|---------------------------------|-----|-----|--|--|--|--|
| Transition Frequency | $f_T$ | $V_{CE}=10V, I_C=50mA, f=20MHz$ |     |     |  |  |  |  |
| ALL                  |       |                                 | 100 | 400 |  |  |  |  |

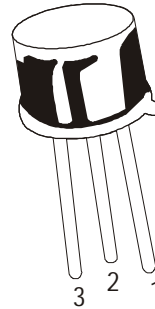
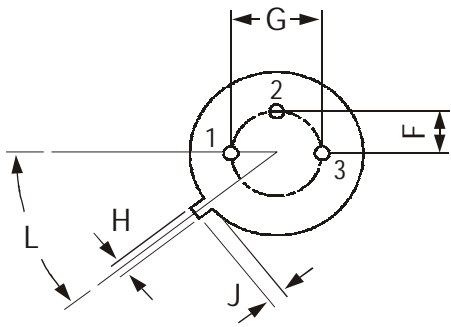
**TO-39**  
**Metal Can Package**

**TO-39 Metal Can Package**



All dimensions are in mm

| DIM | MIN    | MAX    |
|-----|--------|--------|
| A   | 8.50   | 9.39   |
| B   | 7.74   | 8.50   |
| C   | 6.09   | 6.60   |
| D   | 0.40   | 0.53   |
| E   | —      | 0.88   |
| F   | 2.41   | 2.66   |
| G   | 4.82   | 5.33   |
| H   | 0.71   | 0.86   |
| J   | 0.73   | 1.02   |
| K   | 12.70  | —      |
| L   | 42 DEG | 48 DEG |



**PIN CONFIGURATION**  
1. EMITTER  
2. BASE  
3. COLLECTOR

**Packing Detail**

| PACKAGE | STANDARD PACK   |                | INNER CARTON BOX |     | OUTER CARTON BOX  |     |        |
|---------|-----------------|----------------|------------------|-----|-------------------|-----|--------|
|         | Details         | Net Weight/Qty | Size             | Qty | Size              | Qty | Gr Wt  |
| TO-39   | 500 pcs/polybag | 540 gm/500 pcs | 3" x 7.5" x 7.5" | 20K | 17" x 15" x 13.5" | 32K | 40 kgs |

### Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD is believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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Continental Device India Limited

C-120 Naraina Industrial Area, New Delhi 110 028, India.

Telephone + 91-11-579 6150 Fax + 91-11-579 9569, 579 5290

e-mail sales@cdil.com www.cdil.com