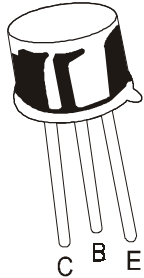


**NPN SILICON EPITAXIAL TRANSISTOR**

**2N 697**



**TO-39  
Metal Can Package**

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

| DESCRIPTION                                      | SYMBOL         | VALUE       | UNITS |
|--|----------------|-------------|-------|
| Collector Emitter Voltage                        | $V_{CER}$      | 40          | V     |
| Collector Base Voltage                           | $V_{CBO}$      | 60          | V     |
| Emitter Base Voltage                             | $V_{EBO}$      | 5           | V     |
| Power Dissipation @ Ta=25°C                      | $P_D$          | 600         | mW    |
| Derate Above 25°C                                |                | 4           | mW/°C |
| Power Dissipation@ Tc=25°C                       | $P_D$          | 2           | W     |
| Derate Above 25°C                                |                | 13.3        | mW/°C |
| Operating And Storage Junction Temperature Range | $T_j, T_{stg}$ | -65 to +200 | °C    |

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

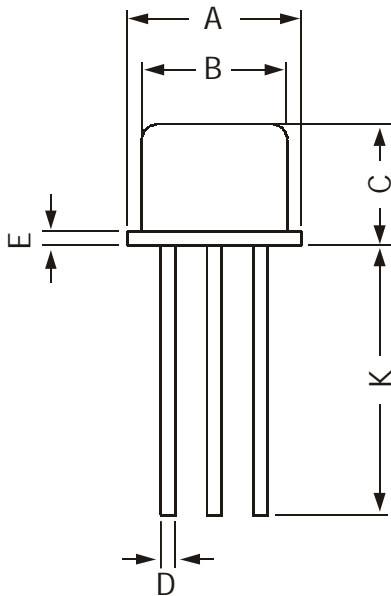
| DESCRIPTION                          | SYMBOL          | TEST CONDITION                       | MIN | MAX | UNITS   |
|--------------------------------------|-----------------|--------------------------------------|-----|-----|---------|
| Collector Base Breakdown Voltage     | $BV_{CBO}$      | $I_C=100\mu A, I_E=0$                | 60  |     | V       |
| Collector Emitter Breakdown Voltage  | $BV_{CER}^*$    | $I_C=100mA, R_{BE}=10\Omega$         | 40  |     | V       |
| Emitter Base Breakdown Voltage       | $BV_{EBO}$      | $I_E=100\mu A, I_C=0$                | 5   |     | V       |
| Collector Cut off Current            | $I_{CBO}$       | $V_{CB}=30V, I_E=0$                  |     | 1   | $\mu A$ |
|                                      |                 | $V_{CB}=30V, I_E=0, T_a=150^\circ C$ |     | 100 | $\mu A$ |
| DC Current Gain                      | $h_{FE}^*$      | $I_C=150mA, V_{CE}=10V$              | 10  | 120 |         |
| Collector Emitter Saturation Voltage | $V_{CE(Sat)}^*$ | $I_C=150mA, I_B=15mA$                |     | 1.5 | V       |
| Base Emitter Saturation Voltage      | $V_{BE(Sat)}^*$ | $I_C=150mA, I_B=15mA$                |     | 1.3 | V       |

**DYNAMIC CHARACTERISTICS**

|                           |            |                                 |     |    |    |
|---------------------------|------------|---------------------------------|-----|----|----|
| Small Signal Current Gain | $ h_{fe} $ | $I_C=50mA, V_{CE}=10V, f=20MHz$ | 2.5 |    |    |
| Output Capacitance        | $C_{ob}$   | $V_{CB}=10V, I_E=0, f=1MHz$     |     | 35 | pF |

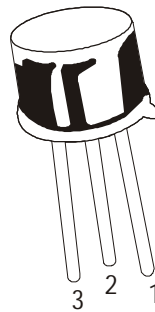
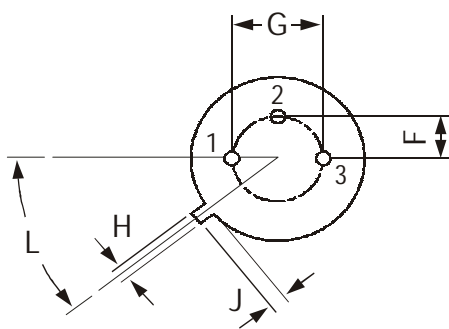
**\*Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$**

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).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.



CDIL is a registered Trademark of

**Continental Device India Limited**

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

Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119

email@cdil.com www.cdilsemi.com