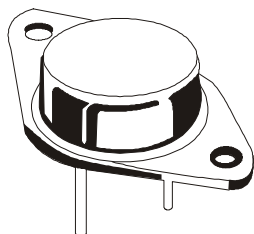


## NPN HIGH VOLTAGE SILICON POWER TRANSISTOR

BU109



TO-3  
Metal Can Package

### HORIZONTAL DEFLECTION OUTPUT STAGE OF TVs and CRTs

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

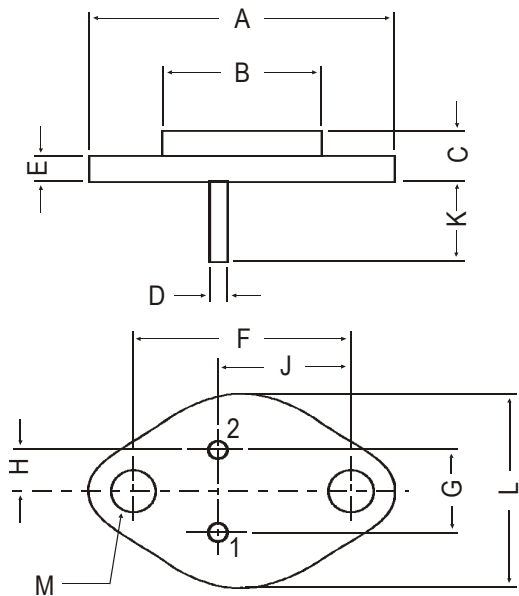
| DESCRIPTION                                    | SYMBOL        | VALUE       | UNITS        |
|--|---------------|-------------|--------------|
| Collector Emitter Voltage                      | $V_{CEO}$     | 150         | V            |
| Collector Base Voltage                         | $V_{CBO}$     | 330         | V            |
| Emitter Base Voltage                           | $V_{EBO}$     | 6.0         | V            |
| Collector Emitter Voltage ( $V_{BE} = -1.5V$ ) | $V_{CEV}$     | 330         | V            |
| Collector Current                              | $I_C$         | 7.0         | A            |
| Collector Peak Current (Repetitive)            | $I_{CM}$      | 10.0        | A            |
| Collector Peak Current (t=10ms)                | $I_{CM}$      | 15.0        | A            |
| Base Current                                   | $I_B$         | 4.0         | A            |
| Total Power Dissipation@ $T_c \leq 25^\circ C$ | $P_{tot}$     | 60          | W            |
| Junction Temperature                           | $T_j$         | 150         | $^\circ C$   |
| Storage Temperature                            | $T_{stg}$     | -65 To +150 | $^\circ C$   |
| THERMAL RESISTANCE                             |               |             |              |
| Junction to Ambient                            | $R_{th(j-a)}$ | 70          | $^\circ C/W$ |
| Junction to Case                               | $R_{th(j-c)}$ | 2.08        | $^\circ C/W$ |

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

| DESCRIPTION                          | SYMBOL          | TEST CONDITION                               | MIN | MAX  | UNITS   |
|--------------------------------------|-----------------|--|-----|------|---------|
| Collector Cut off Current            | $I_{CES}$       | $V_{CE}=330V, V_{BE}=0$                      |     | 5.0  | mA      |
|                                      | $I_{CES}$       | $V_{CE}=200V, V_{BE}=0$                      |     | 100  | $\mu A$ |
|                                      | $I_{CES}$       | $V_{CE}=200V, V_{BE}=0$<br>$T_C=150^\circ C$ |     | 1.0  | mA      |
| Emitter Cut off Current              | $I_{EBO}$       | $V_{EB}=6V, I_C=0$                           |     | 1.0  | mA      |
| Collector Emitter Saturation Voltage | $V_{CE(Sat)}$ * | $I_C=5A, I_B=0.5A$                           |     | 1.0  | V       |
| Base Emitter Saturation Voltage      | $V_{BE(Sat)}$ * | $I_C=5A, I_B=0.5A$                           |     | 1.2  | V       |
| Transition Frequency                 | $f_T$           | $I_C=0.5A, V_{CE}=10V$                       | 10  |      | MHz     |
| Turn off Time                        | $t_{off}$       | $I_C=5A, I_B \text{ end} = 0.5A$             |     | 0.75 | us      |

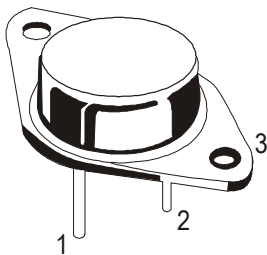
\*Pulse Test: Pulse Duration=300ms, Duty Cycle =1.5%

TO-3 Metal Can Package



| DIM | MIN.  | MAX.  |
|-----|-------|-------|
| A   | —     | 39.37 |
| B   | —     | 22.22 |
| C   | 6.35  | 8.50  |
| D   | 0.96  | 1.09  |
| E   | —     | 1.77  |
| F   | 29.90 | 30.40 |
| G   | 10.69 | 11.18 |
| H   | 5.20  | 5.72  |
| J   | 16.64 | 17.15 |
| K   | 11.15 | 12.25 |
| L   | —     | 26.67 |
| M   | 3.84  | 4.19  |

All dimensions in mm.



PIN CONFIGURATION  
1. BASE  
2. EMITTER  
3. COLLECTOR

Packing Detail

| PACKAGE | STANDARD PACK |                | INNER CARTON BOX  |      | OUTER CARTON BOX  |     |          |
|---------|---------------|----------------|-------------------|------|-------------------|-----|----------|
|         | Details       | Net Weight/Qty | Size              | Qty  | Size              | Qty | Gr Wt    |
| TO-3    | 100 pcs/pkt   | 1.3 kg/100 pcs | 12.5" x 8" x 1.8" | 0.1K | 17" x 11.5" x 21" | 2K  | 27.5 kgs |

### Disclaimer

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CDIL is a registered Trademark of  
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