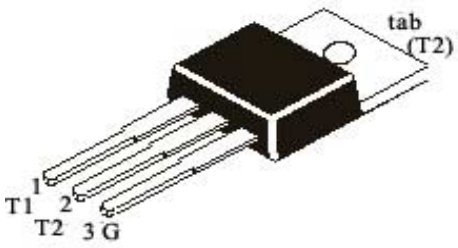
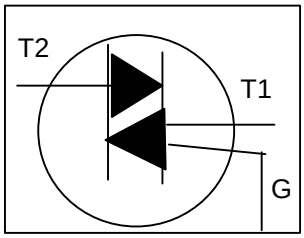
Continental Device India Limited

An ISO/TS 16949, ISO 9001 and ISO 14001 Certified Company

**TRIAC** **BT136D**

**TO-220**
**Plastic Package**




## For use in General Purpose Bidirectional Switching and Phase Control Applications

### ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | TEST CONDITION | VALUE | UNIT |
|---|---|---|---|---|
| **Repetitive Peak Off State Voltage** | $V_{DRM}$ | | 600 | V |
| **RMS on State Current** | $I_{T\ (RMS)}$ | full sine wave, $T_{mb} \leq 107^oC$ | 4.0 | A |
| **Non Repetitive Peak on State Current** | $I_{TSM}$ | full sine wave, $T_J=25^oC$ prior to Surge | | |
| | | t=20ms | 25 | A |
| | | t=16.7ms | 27 | A |
| **$I^2t$ for Fusing** | $I^2t$ | t=10ms | 3.1 | $A^2s$ |
| **Repetitive Rate of Rise of on State Current After Triggering** | $dI_T/dt$ | $I_{TM}$=6A, $I_G$=0.2A, $dI_G/dt$=0.2A/µs | | |
| | | T2+ G+ | 50 | A/µs |
| | | T2+ G- | 50 | A/µs |
| | | T2- G- | 50 | A/µs |
| | | T2- G+ | 10 | A/µs |
| **Peak Gate Current** | $I_{GM}$ | | 2.0 | A |
| **Peak Gate Voltage** | $V_{GM}$ | | 5.0 | V |
| **Peak Gate Power** | $P_{GM}$ | | 5.0 | W |
| **Average Gate Power** | $P_{G\ (AV)}$ | Over any 20ms period | 0.5 | W |
| **Storage Temperature** | $T_{stg}$ | | - 40 to 150 | $^oC$ |
| **Operating Junction Temperature** | $T_j$ | | 125 | $^oC$ |

### THERMAL RESISTANCE

| | | | | |
|---|---|---|---|---|
| **Junction to Mounting Base** | $R_{th\ (j-mb)}$ | full cycle | 3.0 max | K/W |
| | | half cycle | 3.7 max | K/W |
| **Junction to Ambient** | $R_{th\ (j-a)}$ | in free air | 60 typ | K/W |

### ELECTRICAL CHARACTERISTICS ($T_J=25^oC$ unless specified otherwise)

| PARAMETER | SYMBOL | TEST CONDITION | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| **Gate Trigger Current** | $I_{GT}$ | $V_D$=12V, $I_T$=0.1A | | | |
| | | T2+ G+ | | 5.0 | mA |
| | | T2+ G- | | 5.0 | mA |
| | | T2- G- | | 5.0 | mA |
| | | T2- G+ | | 10 | mA |

**BT136DRev030205E**

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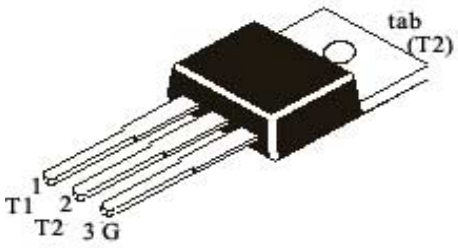


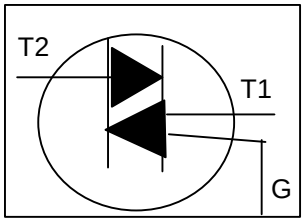


**ELECTRICAL CHARACTERISTICS ($T_J$=25ºC unless specified otherwise)**

| PARAMETER | SYMBOL | TEST CONDITION | MIN | MAX | UNIT |
|---|---|---|---|---|---|
| **Latching Current** | $I_L$ | $V_D$=12V, $I_{GT}$=0.1A | | | |
| | | T2+ G+ | | 10 | mA |
| | | T2+ G- | | 15 | mA |
| | | T2- G- | | 10 | mA |
| | | T2- G+ | | 30 | mA |
| **Holding Current** | $I_H$ | $V_D$=12V, $I_{GT}$=0.1A | | 10 | mA |
| **On State Voltage** | $V_T$ | $I_T$=5A | | 1.7 | V |
| **Gate Trigger Voltage** | $V_{GT}$ | $V_D$=12V, $I_T$=0.1A | | 1.5 | V |
| | | $V_D$=400V, $I_T$=0.1A,$T_J$=125ºC | 0.25 | | V |
| **Off State Leakage Current** | $I_D$ | $V_D$= $V_{DRM}$=max, $T_J$=125ºC | | 0.5 | mA |

**DYNAMIC CHARACTERISTICS**

| PARAMETER | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| **Critical Rate of Rise of off State Voltage** | $d_{VD}/dt$ | $V_{DM}$=67% $V_{DRM}$=max, $T_J$=125ºC, exponential waveform, gate open circuit, $R_{GK}$=1KΩ | | 5 | | V/µs |
| **Gate Controlled turn on time** | $t_{gt}$ | $I_{TM}$=6A, $V_D$=$V_{DRM}$ max, $I_G$=0.1A, $dI_G/dt$=5A/µs | | 2 | | µs |

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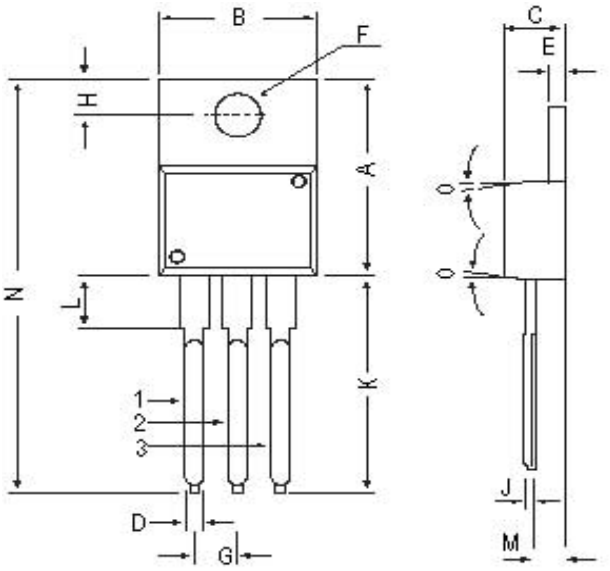
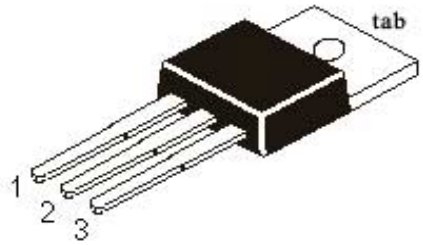
## TO-220 Plastic Package

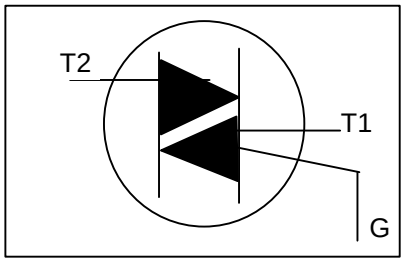



| DIM | MIN | MAX |
|---|---|---|
| A | 14.42 | 16.51 |
| B | 9.63 | 10.67 |
| C | 3.56 | 4.83 |
| D | — | 0.90 |
| E | 1.15 | 1.40 |
| F | 3.75 | 3.88 |
| G | 2.29 | 2.79 |
| H | 2.54 | 3.43 |
| J | — | 0.56 |
| K | 12.70 | 14.73 |
| L | 2.80 | 4.07 |
| M | 2.03 | 2.92 |
| N | — | 31.24 |
| O | 7 DEG | |

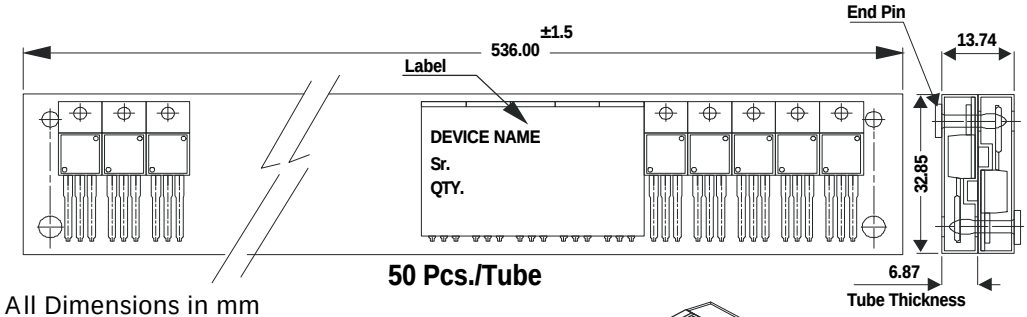
All diminsions in mm.




Pin Configuration
1. Main Terminal 1
2. Main Terminal 2
3. Gate
tab Main Terminal 2



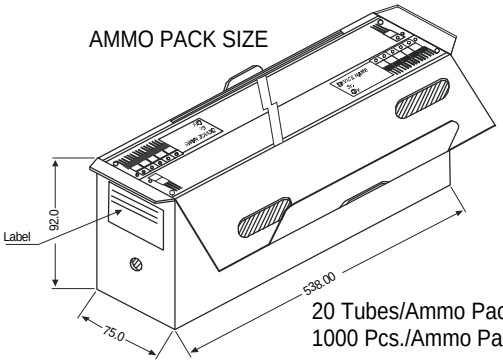

## TO-220 Tube Packing




**50 Pcs./Tube**

All Dimensions in mm

AMMO PACK SIZE




20 Tubes/Ammo Pack
1000 Pcs./Ammo Pack

## Packing Detail

| PACKAGE | STANDARD PACK | | INNER CARTON BOX | | OUTER CARTON BOX | | |
|---|---|---|---|---|---|---|---|
| | Details | Net Weight/Qty | Size | Qty | Size | Qty | Gr Wt |
| TO-220 | 200 pcs/polybag | 396 gm/200 pcs | 3" x 7.5" x 7.5" | 1.0K | 17" x 15" x 13.5" | 16.0K | 36 kgs |
| | 50 pcs/tube | 120 gm/50 pcs | 3.5" x 3.7" x 21.5" | 1.0K | 19" x 19" x 19" | 10.0K | 29 kgs |

**TO-220**
**Plastic Package**

## 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 are 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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