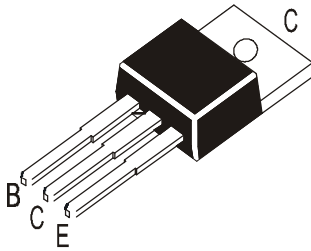


**NPN PLASTIC POWER TRANSISTORS**

**BU406  
BU407**

**TO-220  
Plastic Package**



**Horizontal Deflection Output Stages of TV and CRT**

**ABSOLUTE MAXIMUM RATINGS (T<sub>a</sub>=25°C)**

| DESCRIPTION                                 | SYMBOL                            | BU406        | BU407 | UNIT |
|---|-----------------------------------|--------------|-------|------|
| Collector Emitter Voltage                   | V <sub>CEO</sub>                  | 200          | 150   | V    |
| Collector Base Voltage                      | V <sub>CB0</sub>                  | 400          | 330   | V    |
| Collector Emitter Voltage                   | V <sub>CEV</sub>                  | 400          | 330   | V    |
| Emitter Base Voltage                        | V <sub>EBO</sub>                  | 6            |       | V    |
| Collector Current Continuous                | I <sub>C</sub>                    | 7            |       | A    |
| Collector Current Repetitive Peak           | I <sub>CM</sub>                   | 10           |       | A    |
| Collector Current (10ms) Peak               | I <sub>CM</sub>                   | 15           |       | A    |
| Base Current                                | I <sub>B</sub>                    | 4            |       | A    |
| Power Dissipation upto T <sub>c</sub> =25°C | P <sub>D</sub>                    | 60           |       | W    |
| Derate above 25°C                           |                                   | 480          |       |      |
| Power Dissipation upto T <sub>a</sub> =25°C | P <sub>D</sub>                    | 2            |       | W    |
| Derate above 25°C                           |                                   | 16           |       |      |
| Operating and Storage Junction Temperature  | T <sub>j</sub> , T <sub>stg</sub> | - 65 to +150 |       | °C   |

**THERMAL RESISTANCE**

|                                 |                      |      |      |
|---------------------------------|----------------------|------|------|
| Junction to Case                | R <sub>th(j-c)</sub> | 2.08 | °C/W |
| Junction to Ambient in free air | R <sub>th(j-a)</sub> | 62.5 | °C/W |

**ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise )**

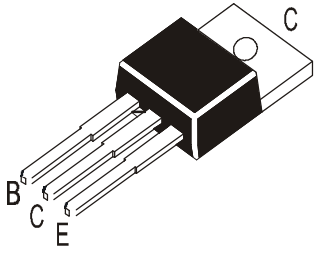
| DESCRIPTION                               | SYMBOL                 | TEST CONDITION                            | MIN          | MAX | UNIT |    |
|---|------------------------|---|--------------|-----|------|----|
| Collector Emitter (sus) Voltage           | *V <sub>CEO(sus)</sub> | I <sub>C</sub> =100mA, I <sub>B</sub> =0  | <b>BU406</b> | 200 | V    |    |
|   |                        |   | <b>BU407</b> | 150 | V    |    |
| Collector Cut off Current                 | I <sub>CES</sub>       | V <sub>CE</sub> =400V, V <sub>BE</sub> =0 | <b>BU406</b> |     | 5.0  | mA |
|   |                        | V <sub>CE</sub> =330V, V <sub>BE</sub> =0 | <b>BU407</b> |     | 5.0  | mA |
|   |                        | V <sub>CE</sub> =250V, V <sub>BE</sub> =0 | <b>BU406</b> |     | 0.1  | mA |
|   |                        | V <sub>CE</sub> =200V, V <sub>BE</sub> =0 | <b>BU407</b> |     | 0.1  | mA |
|   |                        | T <sub>c</sub> =150°C                     |              |     |      |    |
|   |                        | V <sub>CE</sub> =250V, V <sub>BE</sub> =0 | <b>BU406</b> |     | 1.0  | mA |
| V <sub>CE</sub> =200V, V <sub>BE</sub> =0 | <b>BU407</b>           | 1.0                                       | mA           |     |      |    |

\*Pulse Test : Pulse width ≤300ms, Duty Cycle ≤1%

# PLASTIC POWER TRANSISTORS

**BU406  
BU407**

**TO-220  
Plastic Package**



## ELECTRICAL CHARACTERISTICS (T<sub>c</sub>=25°C unless specified otherwise )

| DESCRIPTION                          | SYMBOL                 | TEST CONDITION                           | MIN | MAX | UNIT |
|--------------------------------------|------------------------|--|-----|-----|------|
| Emitter Cut off Current              | I <sub>EBO</sub>       | V <sub>EB</sub> =6V, I <sub>C</sub> =0   |     | 1.0 | mA   |
| Collector Emitter Saturation Voltage | *V <sub>CE (sat)</sub> | I <sub>C</sub> =5A, I <sub>B</sub> =0.5A |     | 1.0 | V    |
| Base Emitter Saturation Voltage      | *V <sub>BE (sat)</sub> | I <sub>C</sub> =5A, I <sub>B</sub> =0.5A |     | 1.2 | V    |
| DC Current Gain                      | *h <sub>FE</sub>       | I <sub>C</sub> =5A, V <sub>CE</sub> =1V  | 10  |     |      |

## DYNAMIC CHARACTERISTIC

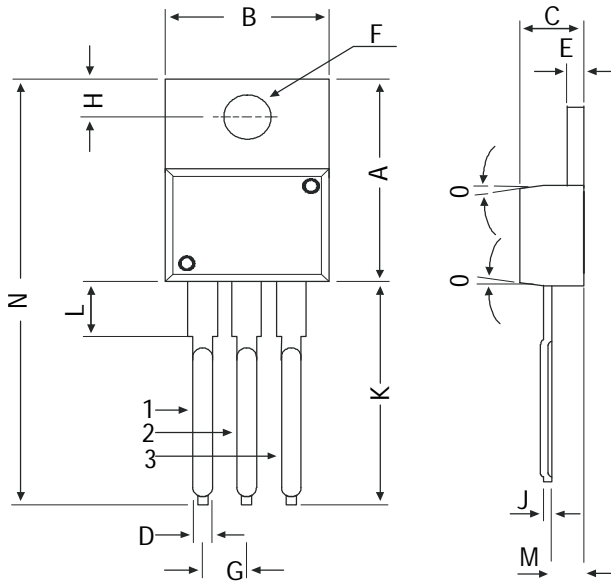
| DESCRIPTION          | SYMBOL          | TEST CONDITION                                      | MIN | MAX     | UNIT |
|----------------------|-----------------|---|-----|---------|------|
| Transition Frequency | f <sub>T</sub>  | I <sub>C</sub> =0.5A, V <sub>CE</sub> =10V, f=20MHz | 10  |         | MHz  |
| Output Capacitance   | C <sub>ob</sub> | V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz     |     | Typ. 80 | pF   |

## SWITCHING CHARACTERISTICS

| DESCRIPTION                   | SYMBOL         | TEST CONDITION  | MIN | MAX  | UNIT |
|-------------------------------|----------------|---|-----|------|------|
| Inductive Load Crossover Time | t <sub>c</sub> | V <sub>cc</sub> =40V, I <sub>c</sub> =5A, I <sub>B1</sub> =I <sub>B2</sub> =0.5A, L=150μH |     | 0.75 | μs   |

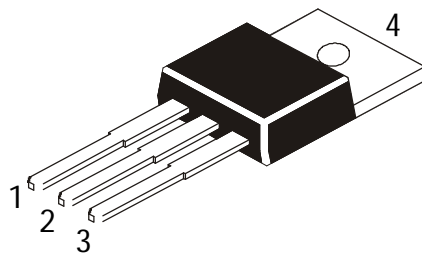
\*Pulse Test : Pulse width ≤300ms, Duty Cycle ≤ 1%

**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 |       |

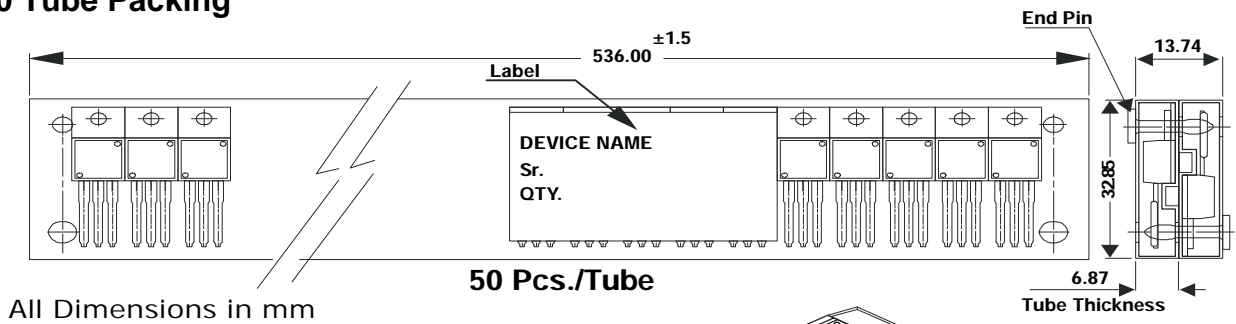
All dimensions in mm.



**Pin Configuration**

1. Base
2. Collector
3. Emitter
4. Collector

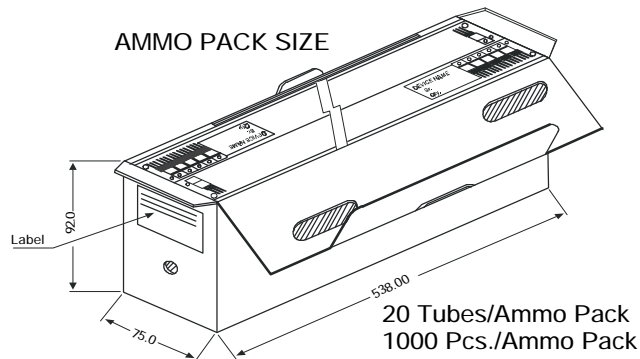
**TO-220 Tube Packing**



All Dimensions in mm

**50 Pcs./Tube**

**AMMO PACK SIZE**



20 Tubes/Ammo Pack  
1000 Pcs./Ammo Pack

**Packing Details**

| 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 |

### **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).

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 Fax + 91-11-2579 9569, 2579 5290  
e-mail sales@cdil.com www.cdil.com www.cdilsemi.com