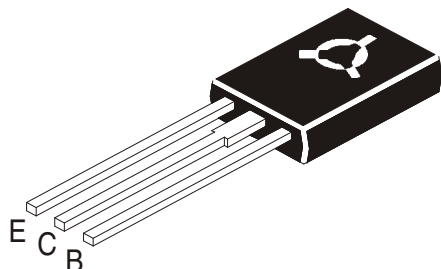


## SILICON EPITAXIAL POWER TRANSISTORS



**BD131**      **NPN**  
**BD132**      **PNP**

**TO-126**  
**Plastic Package**

### General Purpose Medium Power Applications

#### ABSOLUTE MAXIMUM RATINGS

| DESCRIPTION   | SYMBOL    | BD131       | BD132 | UNIT        |
|---|-----------|-------------|-------|-------------|
| Collector -Base Voltage                             | $V_{CBO}$ | 70          | 45    | V           |
| Collector -Emitter Voltage                          | $V_{CEO}$ | 45          | 45    | V           |
| Emitter-Base Voltage                                | $V_{EBO}$ | 6           | 4     | V           |
| Collector Current Continuous                        | $I_C$     | 3           |       | A           |
| Peak  | $I_{CM}$  | 6           |       | A           |
| Base Current Peak                                   | $I_{BM}$  | 0.5         |       | A           |
| Reverse Base Current Peak                           | $-I_{BM}$ | 0.5         |       | A           |
| Total Device Dissipation upto $T_{amb}=60^{\circ}C$ | $P_{tot}$ | 15          |       | W           |
| Junction Temperature                                | $T_j$     | 150         |       | $^{\circ}C$ |
| Storage Temperature Range                           | $T_{stg}$ | -65 to +150 |       | $^{\circ}C$ |

#### Thermal Resistance

|                                |                |   |     |
|--------------------------------|----------------|---|-----|
| From Junction to Mounting Base | $R_{th(j-mb)}$ | 6 | K/W |
|--------------------------------|----------------|---|-----|

#### ELECTRICAL CHARACTERISTICS ( $T_a=25^{\circ}C$ unless specified otherwise)

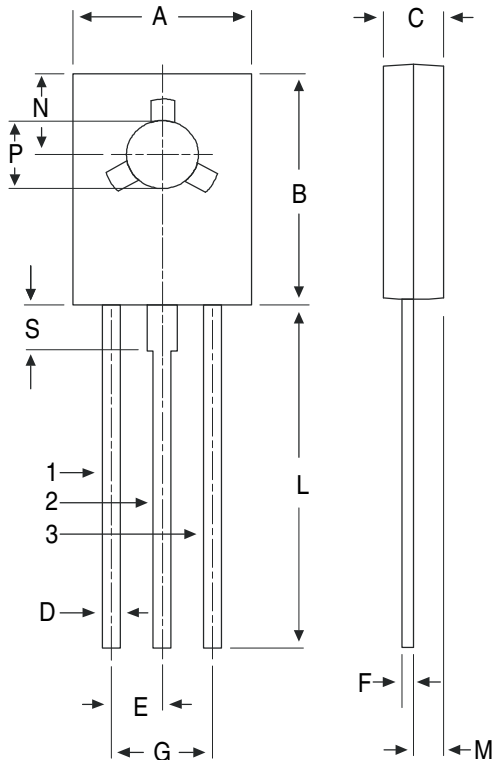
| DESCRIPTION                          | SYMBOL        | TEST CONDITION                                       | MIN | MAX | UNIT    |
|--------------------------------------|---------------|--|-----|-----|---------|
| Collector Cut-off Current            | $I_{CBO}$     | $V_{CB}=50V, I_E=0$ <b>BD131</b>                     |     | 50  | nA      |
|                                      |               | $V_{CB}=40V, I_E=0$ <b>BD132</b>                     |     | 50  | nA      |
|                                      |               | $V_{CB}=50V, I_E=0, T_j = 150^{\circ}C$ <b>BD131</b> |     | 10  | $\mu A$ |
|                                      |               | $V_{CB}=40V, I_E=0, T_j = 150^{\circ}C$ <b>BD132</b> |     | 10  | $\mu A$ |
| Emitter Cut-off Current              | $I_{EBO}$     | $V_{EB}=5V, I_C=0$ <b>BD131</b>                      |     | 50  | nA      |
|                                      |               | $V_{EB}=3V, I_C=0$ <b>BD132</b>                      |     | 50  | nA      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 0.5A, I_B = 50mA$                             |     | 0.3 | V       |
|                                      |               | $I_C = 2A, I_B = 200mA$                              |     | 0.7 | V       |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 0.5A, I_B = 50mA$                             |     | 1.2 | V       |
|                                      |               | $I_C = 2A, I_B = 200mA$                              |     | 1.5 | V       |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 12V, I_C = 0.5A$                           | 40  |     |         |
|                                      |               | $V_{CE} = 1V, I_C = 2A$                              | 20  |     |         |

#### Dynamic Characteristics

|  |                   |   |    |     |     |
|--|-------------------|---|----|-----|-----|
| Collector Capacitance                            | $C_C$             | $I_E = 0, V_{CB} = 5V, f = 1MHz$ <b>BD131</b>                     |    | 60  | pF  |
| Transition Frequency                             | $f_T$             | $I_C = 0.25A, V_{CE} = 5V, f = 35MHz,$<br>$T_{amb} = 25^{\circ}C$ | 60 |     | MHz |
| DC Current Gain Ratio of the Complementary Pairs | $h_{FE1}/h_{FE2}$ | $V_{CE} = 12V, I_C = 0.5A$  |    | 1.2 |     |

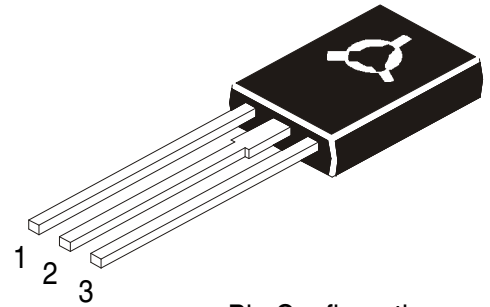
## TO-126 Plastic Package

### TO-126 (SOT-32) Plastic Package



| DIM | MIN       | MAX  |
|-----|-----------|------|
| A   | 7.4       | 7.8  |
| B   | 10.5      | 10.8 |
| C   | 2.4       | 2.7  |
| D   | 0.7       | 0.9  |
| E   | 2.25 TYP. |      |
| F   | 0.49      | 0.75 |
| G   | 4.5 TYP.  |      |
| L   | 15.7 TYP. |      |
| M   | 1.27 TYP. |      |
| N   | 3.75 TYP. |      |
| P   | 3.0       | 3.2  |
| S   | 2.5 TYP.  |      |

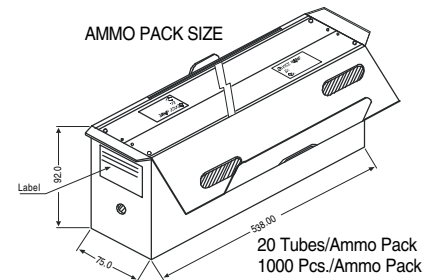
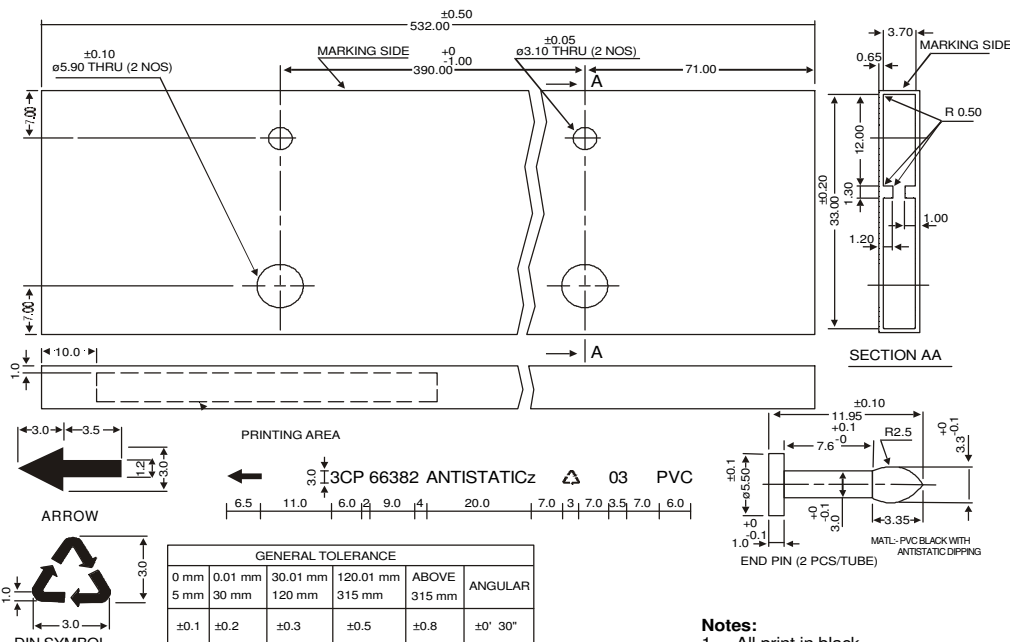
All dimensions in mm.



#### Pin Configuration

1. Emitter
2. Collector
3. Base

### TO-126 TUBE PACKING



### Packing Detail

| PACKAGE     | STANDARD PACK   |                | INNER CARTON BOX  |     | OUTER CARTON BOX  |     |        |
|-------------|-----------------|----------------|-------------------|-----|-------------------|-----|--------|
|             | Details         | Net Weight/Qty | Size              | Qty | Size              | Qty | Gr Wt  |
| TO-126 Bulk | 500 pcs/polybag | 340 gm/500 pcs | 3" x 7.5" x 7.5"  | 2K  | 17" x 15" x 13.5" | 32K | 31 kgs |
| TO-126 Tube | 50 pcs/tube     | 73 gm/50 pcs   | 3" x 3.7" x 21.5" | 1K  | 19" x 19" x 19"   | 10K | 15 kgs |

BD131\_132Rev\_1 120403D

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