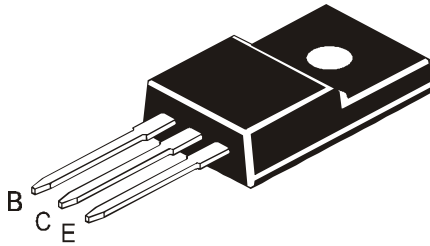


**NPN SILICON PLANAR POWER TRANSISTOR**

**CFD1499**



**TO-220FP Fully Isolated Plastic Package**

**Complementary CFB1063**

**ABSOLUTE MAXIMUM RATINGS**

| DESCRIPTION  | SYMBOL            | VALUE       | UNIT             |
|--|-------------------|-------------|------------------|
| Collector Base Voltage   | $V_{CBO}$         | 100         | V                |
| Collector Emitter Voltage  | $V_{CEO}$         | 100         | V                |
| Emitter Base Voltage   | $V_{EBO}$         | 5.0         | V                |
| RMS Isolation Voltage (for 1sec, R.H. <30%, $T_a = 25^\circ\text{C}$ )           | ** $V_{ISOL}$ (a) | 3500        | $V_{RMS}$        |
|  | (b)               | 1500        | $V_{RMS}$        |
| Collector Current Peak   | $I_{CP}$          | 8.0         | A                |
| Collector Current  | $I_C$             | 5.0         | A                |
| Collector Power Dissipation @ $T_a=25^\circ\text{C}$<br>@ $T_c=25^\circ\text{C}$ | $P_C$             | 2.0         | W                |
|  |                   | 40          | W                |
| Junction Temperature   | $T_j$             | 150         | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_{stg}$         | - 55 to 150 | $^\circ\text{C}$ |

\*\* RMS Isolation Voltage: (a) 3500  $V_{RMS}$  with Package in Clip Mounting Position (b) 1500  $V_{RMS}$  with Package in Screw Mounting Position (for 1sec, R.H.<30%,  $T_a=25^\circ\text{C}$ ; Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ )

**ELECTRICAL CHARACTERISTICS ( $T_c=25^\circ\text{C}$  unless otherwise specified)**

| DESCRIPTION                          | SYMBOL        | TEST CONDITION                                     | MIN | TYP | MAX | UNIT          |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector Cut Off Current            | $I_{CBO}$     | $V_{CB}=100\text{V}, I_E=0$                        |     |     | 50  | $\mu\text{A}$ |
| Emitter Cut Off Current              | $I_{EBO}$     | $V_{EB}=3\text{V}, I_C=0$                          |     |     | 50  | $\mu\text{A}$ |
| DC Current Gain                      | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=20\text{mA}$                | 20  |     |     |               |
|                                      | * $h_{FE}$    | $V_{CE}=5\text{V}, I_C=1\text{A}$                  | 60  |     | 200 |               |
|                                      | $h_{FE}$      | $V_{CE}=5\text{V}, I_C=3\text{A}$                  | 20  |     |     |               |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=3\text{A}, I_B=0.3\text{A}$                   |     |     | 2.0 | V             |
| Base Emitter On Voltage              | $V_{BE(on)}$  | $V_{CE}=5\text{V}, I_C=3\text{A}$                  |     |     | 1.8 | V             |
| Transition Frequency                 | $f_T$         | $V_{CE}=5\text{V}, I_C=0.5\text{A}, f=1\text{MHz}$ |     | 20  |     | MHz           |
| Collector Output Capacitance         | $C_{ob}$      | $V_{CB}=10\text{V}, f=1\text{MHz}$                 |     | 90  |     | pF            |

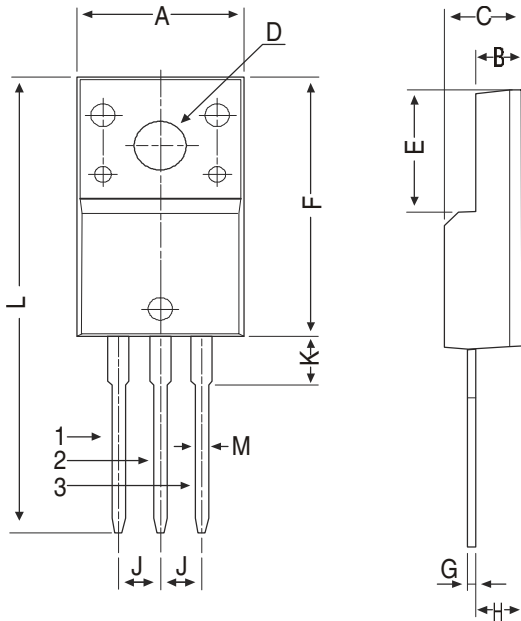
\* $h_{FE}$  Classification

**Q : 60 - 120**

**P : 100 - 200**

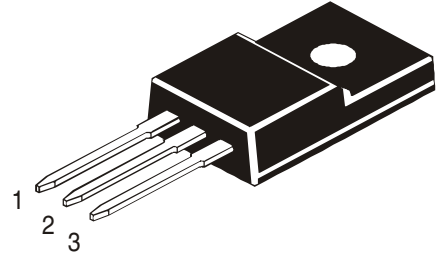
**TO-220FP Fully Isolated Plastic Package**

**TO-220FP Fully Isolated Plastic Package**



| DIM | MIN   | MAX   |
|-----|-------|-------|
| A   | 9.80  | 10.36 |
| B   | 2.50  | 3.00  |
| C   | 4.30  | 4.90  |
| D   | 3.10  | 3.40  |
| E   | 6.50  | 8.20  |
| F   | 14.80 | 17.27 |
| G   | 0.40  | 0.70  |
| H   | 2.50  | 2.96  |
| J   | 2.34  | 2.74  |
| K   | —     | 4.70  |
| L   | —     | 30.05 |
| M   | 0.6   | 0.90  |

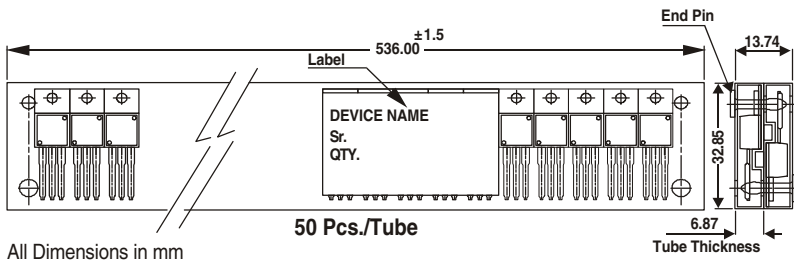
All dimensions in mm.



Pin Configuration

- 1. Base
- 2. Collector
- 3. Emitter

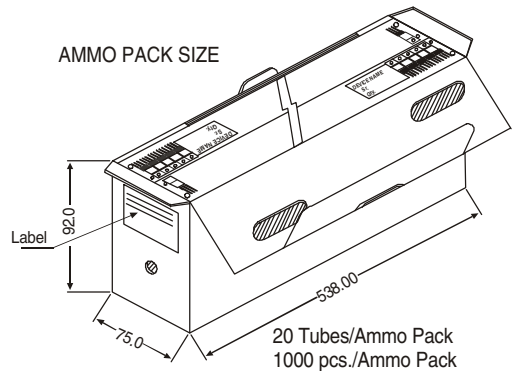
**TO-220 FP Tube Packing**



All Dimensions in mm

50 Pcs./Tube

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-220FP | 200 pcs/polybag | 396 gm/200 pcs | 3" x 7.5" x 7.5"    | 1K  | 17" x 15" x 13.5" | 16K | 36 kgs |
|          | 50 pcs/tube     | 135 gm/50 pcs  | 3.5" x 3.7" x 21.5" | 1K  | 19" x 19" x 19"   | 10K | 28 kgs |

**TO-220FP Fully Isolated  
Plastic Package****Component Disposal Instructions**

1. CDIL Semiconductor Devices are RoHS compliant, customers are requested to please dispose as per prevailing Environmental Legislation of their Country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).

**Disclaimer**

The product information and the selection guides facilitate selection of the CDIL's 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 Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems 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 + 91-112-579 6150, 4141 1112 Fax + 91-11-2579 5290, 4141 1119  
email@cdil.com www.cdilsemi.com