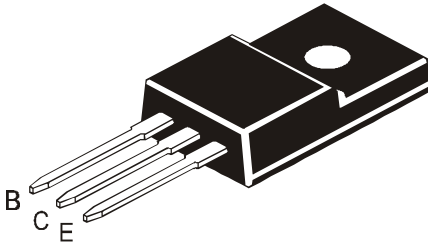


NPN SILICON PLANAR POWER TRANSISTOR

CFD2059



TO-220FP Fully Isolated Plastic Package

General Purpose Application

Complementary CFB1367

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless specified otherwise)

| 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 | I_C | 5.0 | A |
| Base Current | I_B | 0.5 | A |
| Collector Power Dissipation @ $T_c=25^\circ\text{C}$ | P_C | 30 | 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 $\leq 300\text{ms}$, Duty Cycle $\leq 2\%$)

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

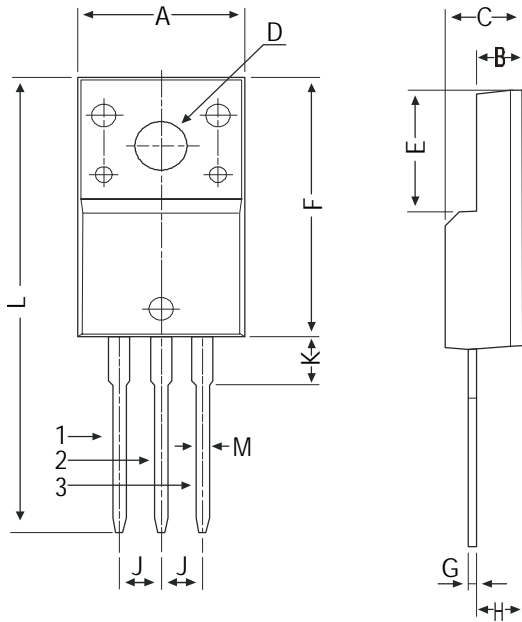
| DESCRIPTION | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector Cut Off Current | I_{CBO} | $V_{CB}=100\text{V}, I_E=0$ | | | 100 | μA |
| Emitter Cut Off Current | I_{EBO} | $V_{EB}=5\text{V}, I_C=0$ | | | 1.0 | mA |
| Collector Emitter Voltage | V_{CEO} | $I_C=50\text{mA}, I_B=0$ | 100 | | | V |
| DC Current Gain | * h_{FE} | $V_{CE}=5\text{V}, I_C=1\text{A}$ | 40 | | 240 | |
| | h_{FE} | $V_{CE}=5\text{V}, I_C=4\text{A}$ | 20 | | | |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=4\text{A}, I_B=0.4\text{A}$ | | | 2.0 | V |
| Base Emitter On Voltage | $V_{BE(on)}$ | $V_{CE}=5\text{V}, I_C=1\text{A}$ | | | 1.5 | V |
| Transition Frequency | f_T | $V_{CE}=5\text{V}, I_C=1\text{A}$ | | 12 | | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$ | | 100 | | pF |

| | | | | |
|---------------------------|-------------|--------------|---------------|--|
| * h_{FE} Classification | R : 40 - 80 | O : 70 - 140 | Y : 120 - 240 | |
|---------------------------|-------------|--------------|---------------|--|

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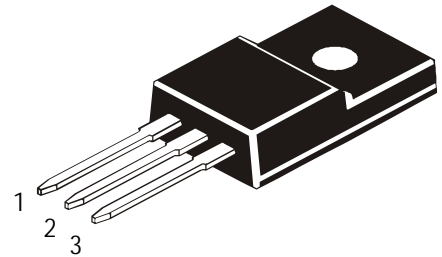
TO-220FP Fully Isolated Plastic Package

TO-220FP Fully Isolated Plastic Package



| DIM | MIN | MAX |
|-----|-------|-------|
| A | 9.96 | 10.36 |
| B | 2.60 | 3.00 |
| C | 4.50 | 4.90 |
| D | 3.10 | 3.30 |
| E | 7.90 | 8.20 |
| F | 16.87 | 17.27 |
| G | 0.45 | 0.50 |
| H | 2.56 | 2.96 |
| J | 2.34 | 2.74 |
| K | — | 3.08 |
| L | — | 30.05 |
| M | — | 0.80 |

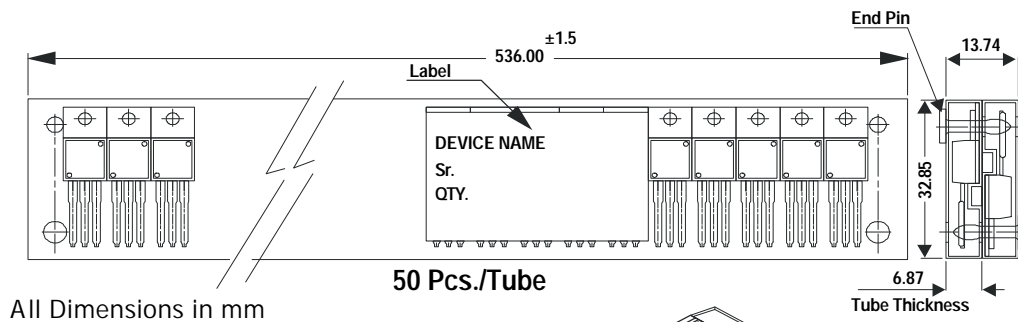
All diminsions in mm.



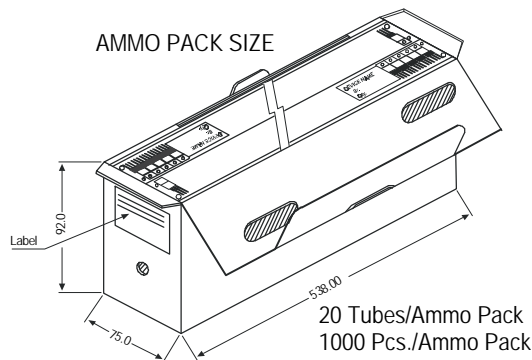
Pin Configuration

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

TO-220 FP Tube Packing



AMMO PACK SIZE



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 |

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