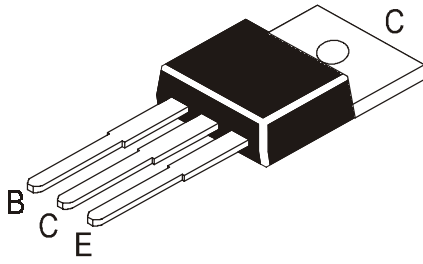


**NPN SILICON POWER DARLINGTON TRANSISTOR**

**CSD 1025**



**TO-220  
Plastic Package**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise )**

| DESCRIPTION                                      | SYMBOL               | VALUE       | UNIT |
|--|----------------------|-------------|------|
| Collector -Base Voltage                          | $V_{CBO}$            | 200         | V    |
| Collector -Emitter Voltage                       | $V_{CEO}$            | 200         | V    |
| Emitter Base Voltage                             | $V_{EBO}$            | 7.0         | V    |
| Collector Current DC                             | $I_C$                | 8.0         | A    |
|  | <b>Peak</b> $I_{CP}$ | 12.0        | A    |
| Base Current DC                                  | $I_B$                | 0.5         | A    |
|  | <b>Peak</b> $I_{BP}$ | 1.0         | A    |
| Total Power Dissipation @Tc=25°C                 | $P_D$                | 50          | W    |
| Operating And Storage Junction Temperature Range | $T_j, T_{stg}$       | -55 to +150 | °C   |

**THERMAL RESISTANCE**

|                  |               |     |      |
|------------------|---------------|-----|------|
| Junction to Case | $R_{th(j-c)}$ | 2.5 | °C/W |
|------------------|---------------|-----|------|

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

| DESCRIPTION                          | SYMBOL        | TEST CONDITION       | MIN | TYP | MAX | UNIT |
|--------------------------------------|---------------|----------------------|-----|-----|-----|------|
| Collector Cut off Current            | $I_{CBO}$     | $V_{CB}=200V, I_E=0$ |     |     | 0.1 | mA   |
|                                      | $I_{CEO}$     | $V_{CE}=200V, I_B=0$ |     |     | 0.1 | mA   |
| Emitter Cut off Current              | $I_{EBO}$     | $V_{EB}=7V, I_C=0$   |     |     | 5   | mA   |
| Collector Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=5A, I_B=10mA$   |     |     | 1.5 | V    |
| Base Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=5A, I_B=10mA$   |     |     | 2.0 | V    |
| DC Current Gain                      | $h_{FE}$      | $I_C=5A, V_{CE}=3V$  | 1.5 |     | 30  | K    |

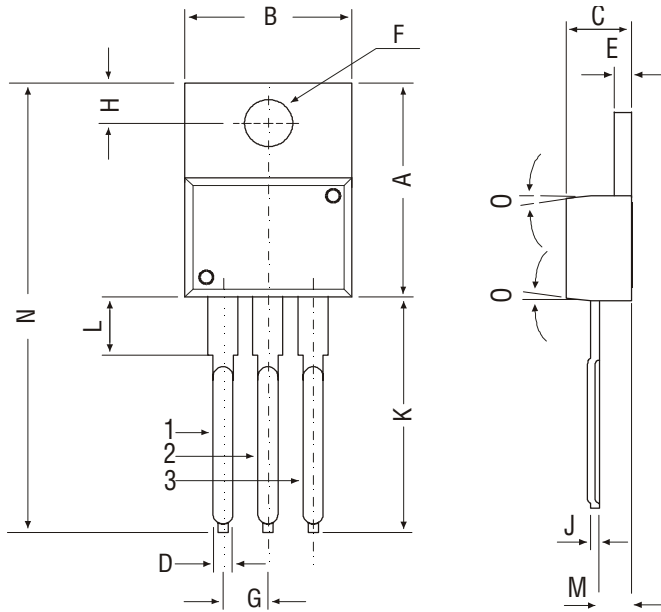
**DYNAMIC CHARACTERISTICS**

|                      |       |                        |  |    |  |     |
|----------------------|-------|------------------------|--|----|--|-----|
| Transition Frequency | $f_T$ | $I_C=0.8A, V_{CE}=10V$ |  | 50 |  | MHZ |
|----------------------|-------|------------------------|--|----|--|-----|

**SWITCHING TIME**

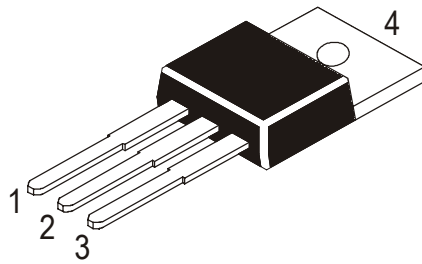
|              |           |   |  |  |   |    |
|--------------|-----------|---|--|--|---|----|
| Turn on Time | $t_{on}$  |   |  |  | 2 | µs |
| Storage Time | $t_{stg}$ | $I_{B1}=I_{B2}=10mA, I_C=5A, R_L=5\Omega, V_{BB2}=4V$ |  |  | 8 | µs |
| Fall time    | $t_f$     |   |  |  | 5 | µs |

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 |       |

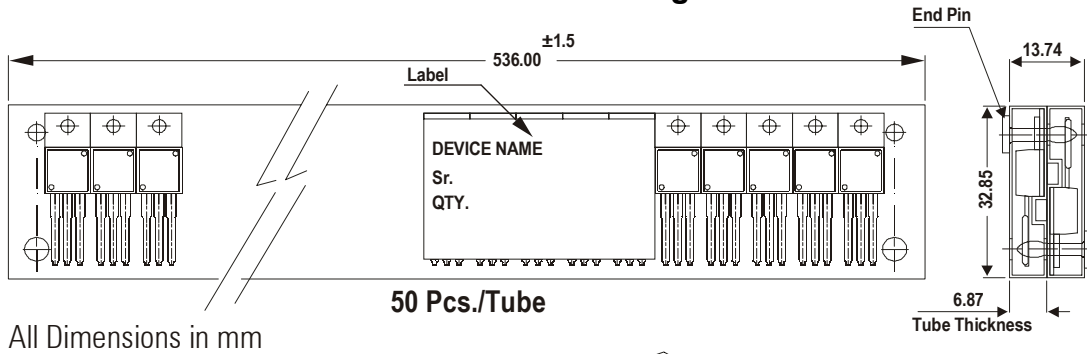
All dimensions in mm.



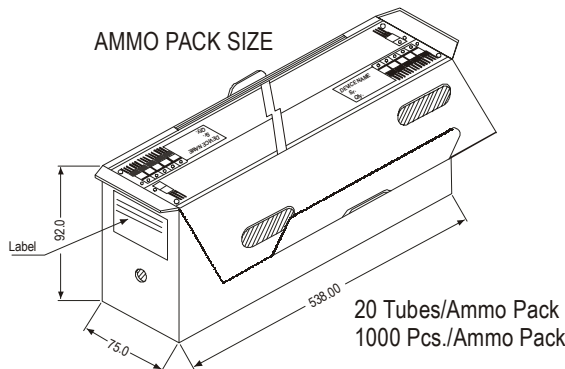
Pin Configuration

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

TO-220 Tube Packing



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-220  | 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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