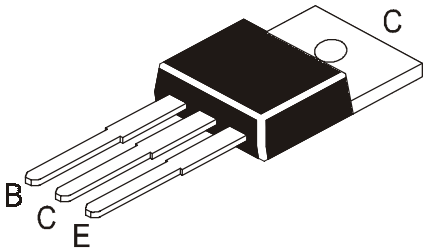
**PNP PLASTIC POWER TRANSISTOR** **CSA 1012**
**NPN PLASTIC POWER TRANSISTOR** **CSC 2562**




**TO-220**
**Plastic Package**

## High Current Switching Applications.

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

| DESCRIPTION | SYMBOL | VALUE | UNIT |
|---|---|---|---|
| **Collector -Base Voltage(open emitter)** | $V_{CBO}$ | >60 | V |
| **Collector -Emitter Voltage(open base)** | $V_{CEO}$ | >50 | V |
| **Emitter Base Voltage(open collector)** | $V_{EBO}$ | >5.0 | V |
| **Collector Current** | $I_C$ | <5.0 | A |
| **Total Power Dissipation upto Tc=25ºC** | $P_{tot}$ | <25 | W |
| **Junction Temperature** | $T_j$ | <150 | ºC |
| **Storage Temperature** | $T_{stg}$ | -65 to +150 | ºC |

**ELECTRICAL CHARACTERISTICS (Ta=25ºC unless specified otherwise)**

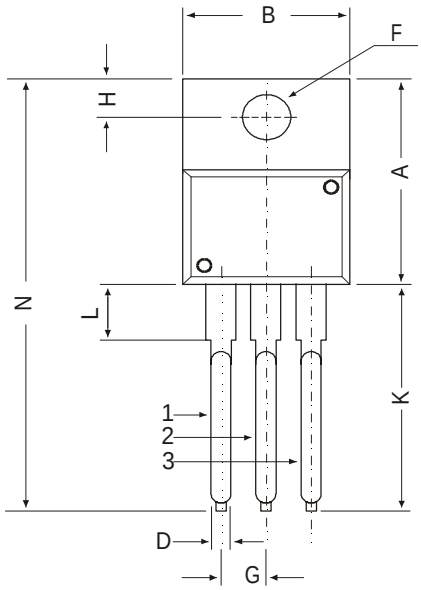
| DESCRIPTION | | SYMBOL | TEST CONDITION | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| **Collector Cut off Current** | | $I_{CBO}$ | $V_{CB}$=50V, $I_E$=0 | | | 1.0 | µA |
| **Emitter Cut off Current** | | $I_{EBO}$ | $V_{EB}$=5V, $I_C$=0 | | | 1.0 | µA |
| **Breakdown Voltages** | | $V_{CEO}$ | $I_C$=10mA, $I_B$=0 | 50 | | | V |
| | | $V_{CBO}$ | $I_C$=1mA, $I_E$=0 | 60 | | | V |
| | | $V_{EBO}$ | $I_C$=0, $I_E$=1mA | 5.0 | | | V |
| **Saturation Voltages** | | $V_{CE(sat)}$ | $I_C$=3A, $I_B$=0.15A | | | 0.4 | V |
| | | $V_{BE(sat)}$ | | | | 1.2 | V |
| **DC Current Gain** | | $h_{FE}$ | $I_C$=1A,$V_{CE}$=1V** | 70 | | 240 | |
| | | | $I_C$=3A,$V_{CE}$=1V | 30 | | 20 | |
| **Transition frequency** | | | | | | | |
| | **PNP** | $f_T$ | $I_C$=1.0A,$V_{CE}$=4V | | 60 | | MHz |
| | **NPN** | | | | 120 | | MHz |
| **Output Capacitance** | | | | | | | |
| | **PNP** | $C_o$ | $V_{CB}$=10V,$I_E$=0,f=1MHz | | 170 | | pF |
| | **NPN** | | | | 80 | | pF |

**Switching Time**

| | | | | |
|---|---|---|---|---|
| | | VCC=30V, IB1=-IB2=0.15A<br>Duty cycle =1% | | |
| **Turn on time** | $t_{on}$ | | 0.1 | µs |
| **Storage time** | $t_s$ | | 0 | µs |
| **Fall time** | $t_f$ | | 0.1 | µs |

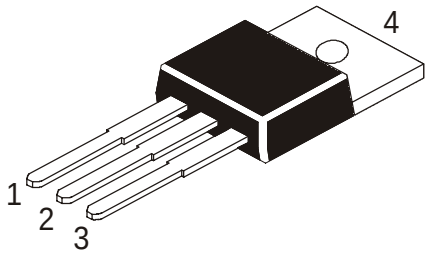
**** $h_{FE}$ classification : O: 70-140 Y: 120-240**

## TO-220 Plastic Package



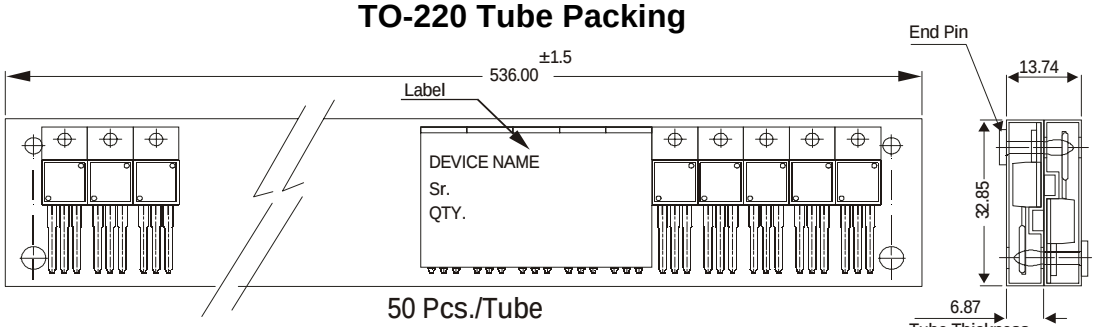

| DIM | MIN | MAX |
|---|---|---|
| A | 14.42 | 16.51 |
| B | 9.63 | 10.67 |
| C | 3.56 | 4.83 |
| D | — | 0.90 |
| E | 1.15 | 1.40 |
| F | 3.75 | 3.88 |
| G | 2.29 | 2.79 |
| H | 2.54 | 3.43 |
| J | — | 0.56 |
| K | 12.70 | 14.73 |
| L | 2.80 | 4.07 |
| M | 2.03 | 2.92 |
| N | — | 31.24 |
| O | 7 DEG | |

All diminsions in mm.




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

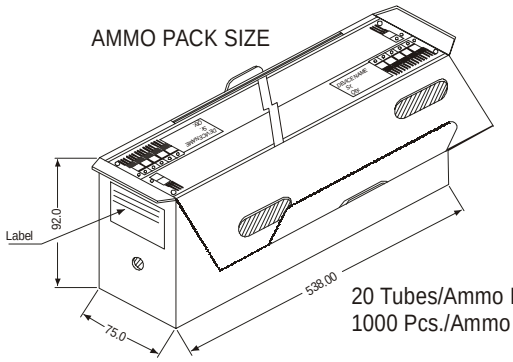
## TO-220 Tube Packing




50 Pcs./Tube

All Dimensions in mm

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

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