

# isc Silicon NPN Power Transistor

**MJ12002**

## DESCRIPTION

- High Switching Speed
- Wide Area of Safe Operation
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

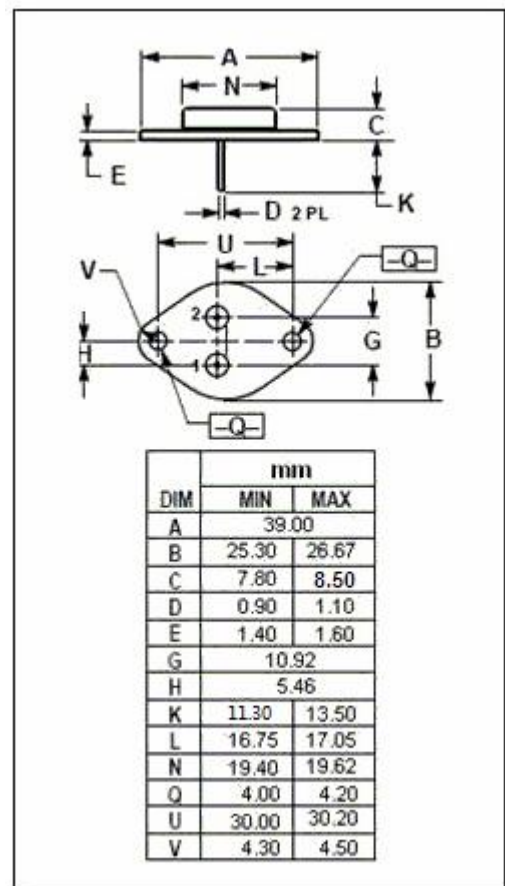
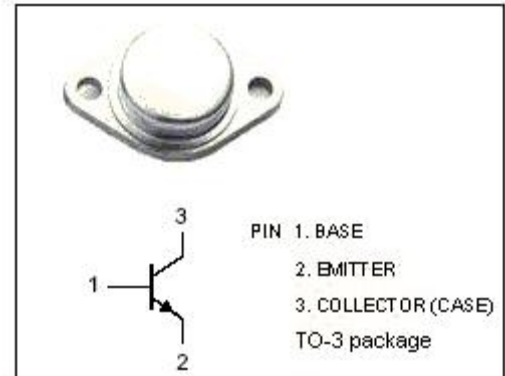
- Designed for use in large screen color deflection circuits.

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

| SYMBOL         | PARAMETER                                             | VALUE   | UNIT               |
|----------------|-------------------------------------------------------|---------|--------------------|
| $V_{CBO}$      | Collector- Base Voltage                               | 1500    | V                  |
| $V_{CEO(SUS)}$ | Collector-Emitter Voltage                             | 750     | V                  |
| $V_{EBO}$      | Emitter-Base Voltage                                  | 5       | V                  |
| $I_E$          | Emitter Current-Continuous                            | 7       | A                  |
| $P_C$          | Collector Power Dissipation@ $T_C=25^{\circ}\text{C}$ | 100     | W                  |
| $T_J$          | Junction Temperature                                  | 150     | $^{\circ}\text{C}$ |
| $T_{stg}$      | Storage Temperature                                   | -65~150 | $^{\circ}\text{C}$ |

## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                           | MAX  | UNIT                 |
|---------------|-------------------------------------|------|----------------------|
| $R_{th\ j-c}$ | Thermal Resistance,Junction to Case | 1.25 | $^{\circ}\text{C/W}$ |



**isc Silicon NPN Power Transistor****MJ12002****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL                | PARAMETER                            | CONDITIONS                                                             | MIN | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|------------------------------------------------------------------------|-----|------|-----|------|
| V <sub>CEO(SUS)</sub> | Collector-Emitter Sustaining Voltage | I <sub>C</sub> =10mA ; I <sub>B</sub> =0                               | 750 |      |     | V    |
| V <sub>CE(sat)</sub>  | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 2A; I <sub>B</sub> = 1.8A                             |     |      | 5.0 | V    |
| V <sub>BE(sat)</sub>  | Base-Emitter Saturation Voltage      | I <sub>C</sub> = 2A; I <sub>B</sub> = 1.8A                             |     |      | 1.5 | V    |
| I <sub>CBO</sub>      | Collector Cutoff Current             | V <sub>CB</sub> = 1500V; I <sub>E</sub> = 0                            |     |      | 1.0 | mA   |
| I <sub>EBO</sub>      | Emitter Cutoff Current               | V <sub>EB</sub> = 5V; I <sub>C</sub> =0                                |     |      | 1.0 | mA   |
| h <sub>FE</sub>       | DC Current Gain                      | I <sub>C</sub> = 0.5A ; V <sub>CE</sub> = 5V                           |     | 10.5 |     |      |
| f <sub>T</sub>        | Current-Gain—Bandwidth Product       | I <sub>C</sub> = 0.1A; V <sub>CE</sub> = 5V; f <sub>test</sub> =1.0MHz |     | 4    |     | MHz  |
| C <sub>OB</sub>       | Output Capacitance                   | I <sub>E</sub> = 0; V <sub>CB</sub> = 10V; f <sub>test</sub> =0.1MHz   |     | 50   |     | pF   |
| t <sub>f</sub>        | Fall Time                            | I <sub>C</sub> = 3A , I <sub>B1</sub> = 1.2A; L <sub>B</sub> = 8 μ H   |     | 0.5  | 1.0 | μ s  |

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