

isc Silicon NPN Power Transistor

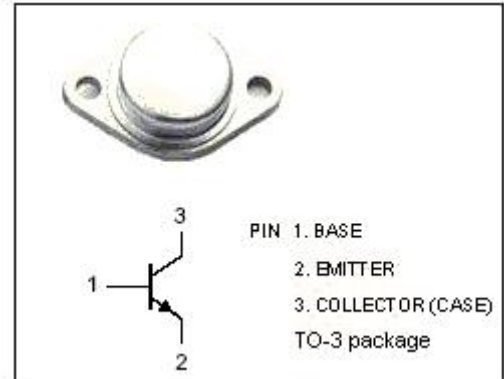
MJ12003

DESCRIPTION

- Collector-Emitter Sustaining Voltage-
: $V_{CEO(SUS)} = 750V(\text{Min})$
- High Switching Speed
- Wide Area of Safe Operation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

- Designed for use in CRT deflection circuits.

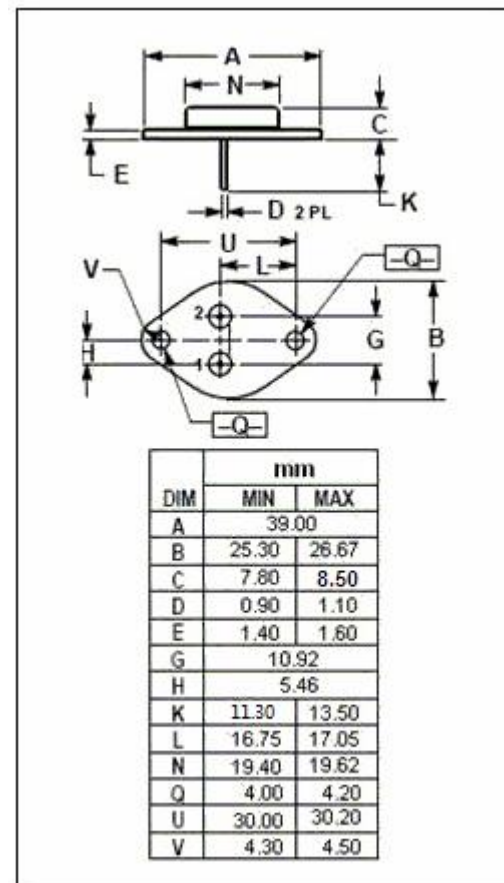


ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

| 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_C | Collector Current-Continuous | 4 | A |
| I_B | Base Current-Continuous | 3 | A |
| 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 | $^\circ\text{C/W}$ |



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ELECTRICAL CHARACTERISTICS

 $T_C=25^{\circ}\text{C}$ unless otherwise specified

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP. | MAX | UNIT |
|---------------|--------------------------------------|---|-----|------|-----|---------------|
| $V_{CE(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=10\text{mA}$; $I_B=0$ | 750 | | | V |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C= 3\text{A}$; $I_B= 1.2\text{A}$ | | | 5.0 | V |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage | $I_C= 3\text{A}$; $I_B= 1.2\text{A}$ | | | 1.5 | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}= 1500\text{V}$; $I_E= 0$ | | | 1.0 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}= 5\text{V}$; $I_C=0$ | | | 1.0 | mA |
| h_{FE} | DC Current Gain | $I_C= 0.5\text{A}$; $V_{CE}= 5\text{V}$ | 6 | | | |
| f_T | Current-Gain—Bandwidth Product | $I_C= 0.1\text{A}$; $V_{CE}= 5\text{V}$; $f_{test}=1.0\text{MHz}$ | | 4 | | MHz |
| C_{OB} | Output Capacitance | $I_E= 0$; $V_{CB}= 10\text{V}$; $f_{test}=0.1\text{MHz}$ | | 90 | | pF |
| t_f | Fall Time | $I_C= 3\text{A}$, $I_{B1}= 1.2\text{A}$; $L_B= 8\ \mu\text{H}$ | | 0.5 | 1.0 | μs |

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