

isc Silicon NPN Power Transistor

BDX12

DESCRIPTION

- Collector-Emitter Breakdown Voltage-
: $V_{(BR)CEO} = 120V$ (Min)
- Excellent Safe Operating Area
- Low Collector-Emitter Saturation Voltage
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation.

APPLICATIONS

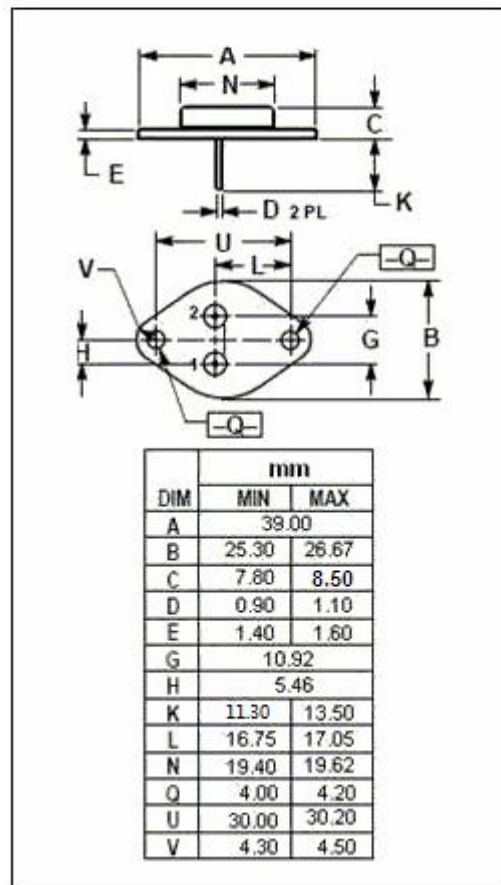
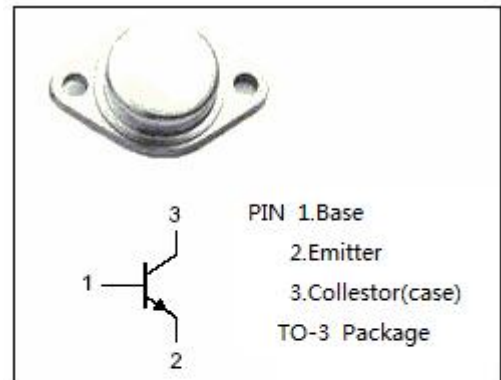
- Designed for application in industrial and commercial equipment including high fidelity audio amplifier, series and shunt regulators and power switches

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

| SYMBOL | PARAMETER | VALUE | UNIT |
|-----------|--|---------|-------------|
| V_{CBO} | Collector-Base Voltage | 140 | V |
| V_{CEO} | Collector-Emitter Voltage | 120 | V |
| V_{EBO} | Emitter-Base Voltage | 7 | V |
| I_c | Collector Current-Continuous | 5 | A |
| P_c | Collector Power Dissipation@ $T_c=25^{\circ}C$ | 100 | W |
| T_J | Junction Temperature | 150 | $^{\circ}C$ |
| T_{stg} | Storage Temperature | -65~150 | $^{\circ}C$ |

THERMAL CHARACTERISTICS

| SYMBOL | PARAMETER | MAX | UNIT |
|---------------|--------------------------------------|------|---------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 1.75 | $^{\circ}C/W$ |



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

| SYMBOL | PARAMETER | CONDITIONS | MIN | MAX | UNIT |
|-------------------|--------------------------------------|-----------------------------------|-----|-----|------|
| $V_{CEO(SUS)}^*$ | Collector-Emitter Sustaining Voltage | $I_C=50\text{mA}; I_B=0$ | 120 | | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB}=140\text{V}; I_E=0$ | | 0.1 | mA |
| I_{CEO} | Collector Cutoff Current | $V_{CE}=120\text{V}; I_B=0$ | | 0.5 | mA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB}=7\text{V}; I_C=0$ | | 0.1 | mA |
| $V_{CE(sat)-1}^*$ | Collector-Emitter Saturation Voltage | $I_C=2\text{A}; I_B=200\text{mA}$ | | 1.0 | V |
| $V_{CE(sat)-2}^*$ | Collector-Emitter Saturation Voltage | $I_C=5\text{A}; I_B=500\text{mA}$ | | 2.0 | V |
| $V_{BE(ON)-1}^*$ | Base-Emitter On Voltage | $I_C=2\text{A}; V_{CE}=4\text{V}$ | | 2.0 | V |
| $V_{BE(ON)-2}^*$ | Base-Emitter On Voltage | $I_C=5\text{A}; V_{CE}=4\text{V}$ | | 3.0 | V |
| h_{FE-1}^* | DC Current Gain | $I_C=2\text{A}; V_{CE}=4\text{V}$ | 20 | 70 | |
| h_{FE-2}^* | DC Current Gain | $I_C=5\text{A}; V_{CE}=4\text{V}$ | 10 | | |

 *:Pulse test:Pulse width=300us,duty cycle \leq 2%

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