

**Silicon NPN Power Transistor**

**BDY72**

**DESCRIPTION**

- Continuous Collector Current- $I_C= 3A$
- Collector Power Dissipation-  
:  $P_C= 25W @T_C= 25^\circ C$
- Collector-Emitter Sustaining Voltage-  
:  $V_{CEO(SUS)}= 120V(\text{Min})$

**APPLICATIONS**

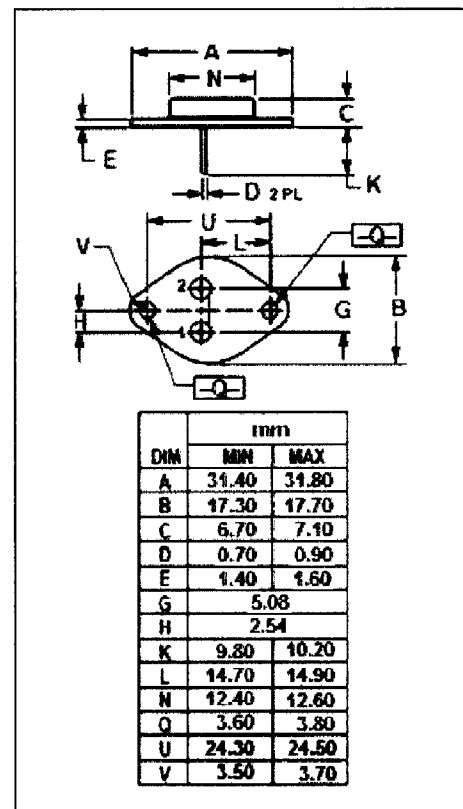
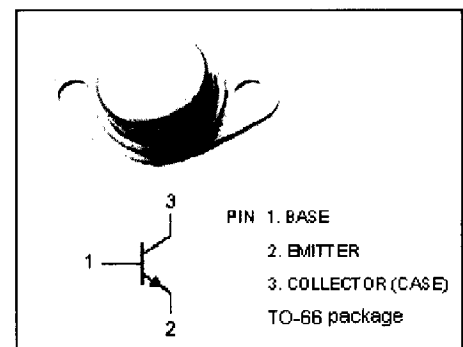
- Designed for use in general purpose switching and linear amplifier applications requiring high breakdown voltages.

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

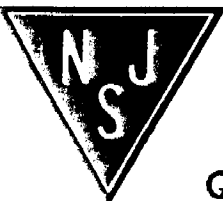
| SYMBOL    | PARAMETER                                     | VALUE   | UNIT       |
|-----------|---|---------|------------|
| $V_{CBO}$ | Collector-Base Voltage                        | 150     | V          |
| $V_{CEO}$ | Collector-Emitter Voltage                     | 120     | V          |
| $V_{CEX}$ | Collector-Emitter Voltage $V_{BE}= -1.5V$     | 150     | V          |
| $V_{CER}$ | Collector-Emitter Voltage $R_{BE}= 100\Omega$ | 130     | V          |
| $V_{EBO}$ | Emitter-Base Voltage                          | 7       | V          |
| $I_C$     | Collector Current-Continuous                  | 3       | A          |
| $I_B$     | Base Current-Continuous                       | 2       | A          |
| $P_C$     | Collector Power Dissipation@ $T_C=25^\circ C$ | 25      | W          |
| $T_J$     | Junction Temperature                          | 200     | $^\circ C$ |
| $T_{stg}$ | Storage Temperature                           | -65~200 | $^\circ C$ |

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                            | MAX | UNIT         |
|---------------|--------------------------------------|-----|--------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 7.0 | $^\circ C/W$ |



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### ELECTRICAL CHARACTERISTICS

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

| SYMBOL         | PARAMETER                            | CONDITIONS  | MIN | MAX        | UNIT |
|----------------|--------------------------------------|---|-----|------------|------|
| $V_{CE(SUS)}$  | Collector-Emitter Sustaining Voltage | $I_C=100\text{mA}; I_B=0$   | 120 |            | V    |
| $V_{CER(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=100\text{mA}; R_{BE}=100\Omega$  | 130 |            | V    |
| $V_{CEX(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=100\text{mA}; V_{BE}=-1.5\text{V}$   | 150 |            | V    |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C=0.5\text{A}; I_B=50\text{mA}$  |     | 6.0        | V    |
| $V_{BE(on)}$   | Base-Emitter On Voltage              | $I_C=0.5\text{A}; V_{CE}=4\text{V}$   |     | 1.7        | V    |
| $I_{CEO}$      | Collector Cutoff Current             | $V_{CE}=140\text{V}; I_B=0$   |     | 10         | mA   |
| $I_{CEX}$      | Collector Cutoff Current             | $V_{CE}=130\text{V}; V_{BE(off)}=1.5\text{V}$<br>$V_{CE}=130\text{V}; V_{BE(off)}=1.5\text{V}; T_c=150^\circ\text{C}$ |     | 1.0<br>5.0 | mA   |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB}=7\text{V}; I_C=0$   |     | 1.0        | mA   |
| $h_{FE}$       | DC Current Gain                      | $I_C=0.5\text{A}; V_{CE}=4\text{V}$   | 60  | 180        |      |
| $f_T$          | Current Gain-Bandwidth Product       | $I_C=0.2\text{A}; V_{CE}=10\text{V}$  | 0.8 |            | MHz  |