

**isc Silicon NPN Power Transistor**
**BD159**
**DESCRIPTION**

- Collector–Emitter Sustaining Voltage–  
:  $V_{CEO(SUS)} = 350V(\text{Min})$
- DC Current Gain–  
:  $h_{FE} = 30\sim 240(\text{Min}) @ I_C = 50\text{mA}$
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

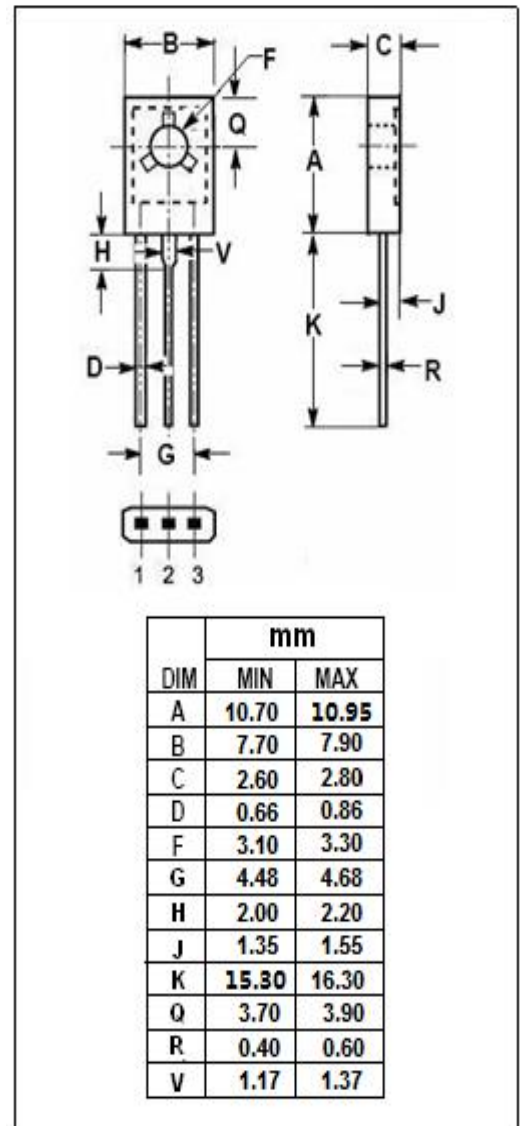
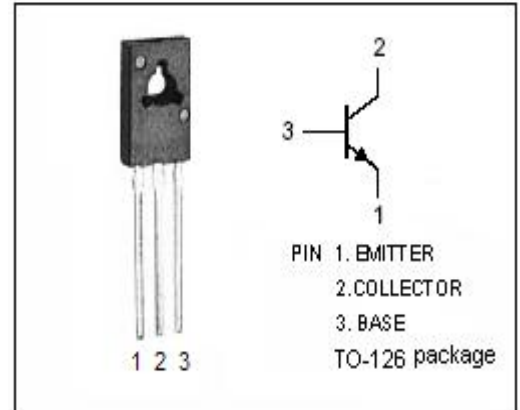
- Designed for power output stages for television, radio, phonograph and other consumer product applications.

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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                | 375     | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                             | 350     | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                  | 5       | V                |
| $I_C$     | Collector Current-Continuous                          | 0.5     | A                |
| $I_{CM}$  | Collector Current-Peak                                | 1.0     | A                |
| $I_B$     | Base Current-Continuous                               | 0.25    | A                |
| $P_C$     | Collector Power Dissipation<br>$T_C=25^\circ\text{C}$ | 20      | W                |
| $T_j$     | Junction Temperature                                  | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                             | -65~150 | $^\circ\text{C}$ |

**THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                            | MAX  | UNIT                      |
|---------------|--------------------------------------|------|---------------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 6.25 | $^\circ\text{C}/\text{W}$ |



## isc Silicon NPN Power Transistor

BD159

## ELECTRICAL CHARACTERISTICS

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

| SYMBOL         | PARAMETER                            | CONDITIONS                               | MIN | MAX | UNIT |
|----------------|--------------------------------------|--|-----|-----|------|
| $V_{CEO(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C = 1.0\text{mA}; I_B = 0$            | 350 |     | V    |
| $V_{(BR)CBO}$  | Collector-Base Breakdown Voltage     | $I_C = 0.1\text{mA}; I_E = 0$            | 375 |     | V    |
| $V_{(BR)EBO}$  | Emitter-Base Breakdown Voltage       | $I_E = 0.1\text{mA}; I_C = 0$            | 5   |     | V    |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C = 50\text{mA}; I_B = 5\text{mA}$    |     | 1.0 | V    |
| $I_{CBO}$      | Collector Cutoff Current             | $V_{CB} = 375\text{V}; I_E = 0$          |     | 0.1 | mA   |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB} = 5\text{V}; I_C = 0$            |     | 0.1 | mA   |
| $h_{FE}$       | DC Current Gain                      | $I_C = 50\text{mA}; V_{CE} = 10\text{V}$ | 30  | 240 |      |

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