

**isc Silicon NPN Power Transistor**
**BD329**
**DESCRIPTION**

- DC Current Gain-  
:  $h_{FE} = 85 \sim 375(\text{Min}) @ I_C = 0.5\text{A}$
- Collector-Emitter Sustaining Voltage -  
:  $V_{CEO(\text{SUS})} = 20\text{V}(\text{Min})$
- Complement to type BD330
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

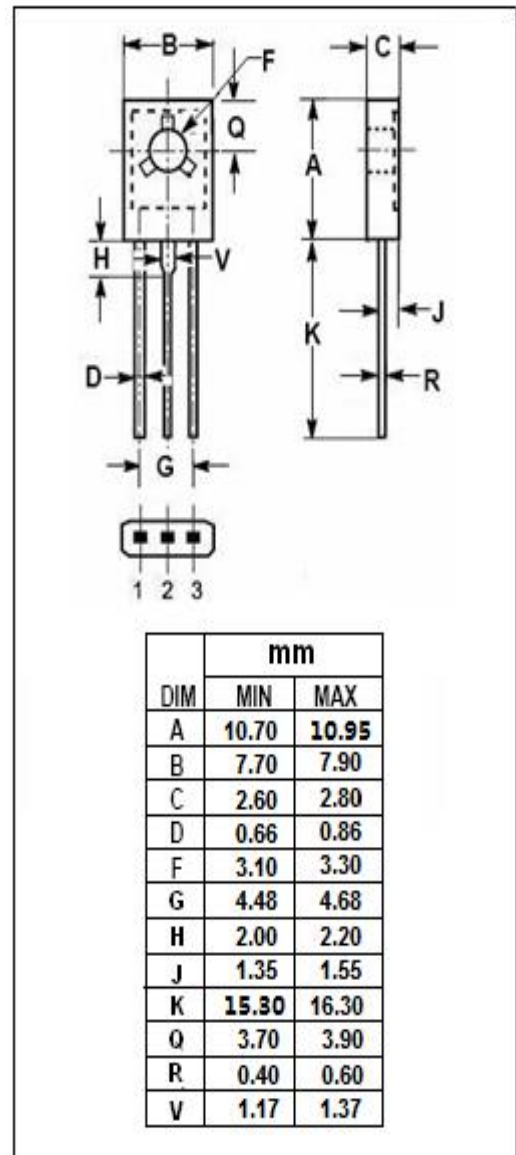
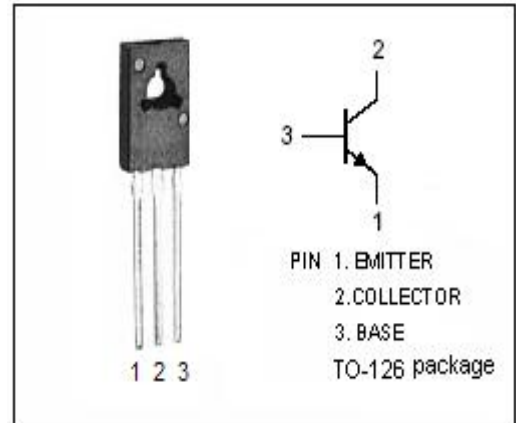
- Especially for battery equipped applications.

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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                    | 32      | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                                 | 20      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                      | 5       | V                |
| $I_C$     | Collector Current-Continuous                              | 3       | A                |
| $I_{BM}$  | Base Current-Peak   | 1       | A                |
| $P_C$     | Collector Power Dissipation<br>@ $T_C = 25^\circ\text{C}$ | 15      | 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    | 7   | $^\circ\text{C}/\text{W}$ |
| $R_{th\ j-a}$ | Thermal Resistance, Junction to Ambient | 100 | $^\circ\text{C}/\text{W}$ |



**isc Silicon NPN Power Transistor****BD329****ELECTRICAL CHARACTERISTICS** $T_C=25^{\circ}\text{C}$  unless otherwise specified

| SYMBOL         | PARAMETER                            | CONDITIONS  | MIN | TYP. | MAX       | UNIT          |
|----------------|--------------------------------------|---|-----|------|-----------|---------------|
| $V_{CEQ(SUS)}$ | Collector-Emitter Sustaining Voltage | $I_C=30\text{mA}; I_B=0$  | 20  |      |           | V             |
| $V_{CE(sat)}$  | Collector-Emitter Saturation Voltage | $I_C=2\text{A}; I_B=0.2\text{A}$  |     |      | 0.5       | V             |
| $V_{BE(on)-1}$ | Base-Emitter On Voltage              | $I_C=5\text{mA}; V_{CE}=10\text{V}$   |     | 0.6  |           | V             |
| $V_{BE(on)-2}$ | Base-Emitter On Voltage              | $I_C=2\text{A}; V_{CE}=1\text{V}$   |     |      | 1.2       | V             |
| $I_{CBO}$      | Collector Cutoff Current             | $V_{CB}=32\text{V}; I_E=0$<br>$V_{CB}=32\text{V}; I_E=0, T_C=150^{\circ}\text{C}$ |     |      | 0.1<br>10 | $\mu\text{A}$ |
| $I_{EBO}$      | Emitter Cutoff Current               | $V_{EB}=5\text{V}; I_C=0$   |     |      | 0.1       | $\mu\text{A}$ |
| $h_{FE-1}$     | DC Current Gain                      | $I_C=5\text{mA}; V_{CE}=10\text{V}$   | 50  |      |           |               |
| $h_{FE-2}$     | DC Current Gain                      | $I_C=0.5\text{A}; V_{CE}=1\text{V}$   | 85  |      | 375       |               |
| $h_{FE-3}$     | DC Current Gain                      | $I_C=2\text{A}; V_{CE}=1\text{V}$   | 40  |      |           |               |
| $f_T$          | Current-Gain—Bandwidth Product       | $I_C=50\text{mA}; V_{CE}=5\text{V}; f_{test}=100\text{MHz}$                       |     | 130  |           | MHz           |

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