

## isc Silicon NPN Darlington Power Transistor

2SD679

## DESCRIPTION

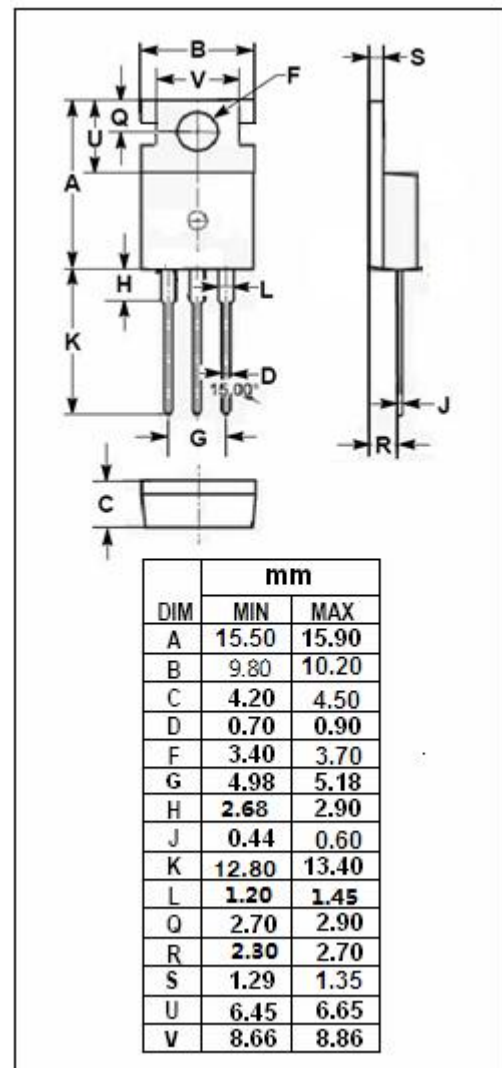
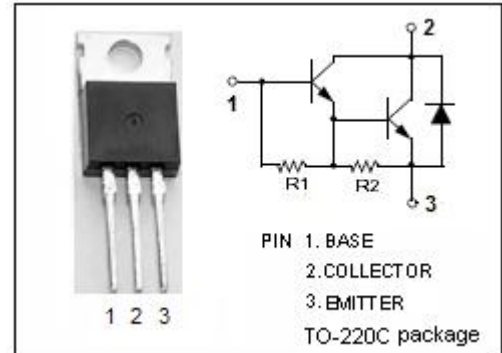
- Collector-Emitter Sustaining Voltage-  
 $V_{CEO(SUS)} = 70V(\text{Min})$
- Low Collector-Emitter Saturation Voltage-  
:  $V_{CE(sat)} = 2.0V(\text{Max.}) @ I_C = 3A$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

- Designed for general purpose amplifier and low speed switching applications.

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

| SYMBOL    | PARAMETER   | VALUE   | UNIT             |
|-----------|---|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                    | 70      | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                                 | 70      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                      | 5       | V                |
| $I_C$     | Collector Current-Continuous                              | 4       | A                |
| $I_{CM}$  | Collector Current-Peak                                    | 6       | A                |
| $I_B$     | Base Current-Continuous                                   | 50      | mA               |
| $P_C$     | Collector Power Dissipation<br>@ $T_C = 25^\circ\text{C}$ | 40      | W                |
| $T_J$     | Junction Temperature                                      | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                                 | -65~150 | $^\circ\text{C}$ |



**isc Silicon NPN Darlington Power Transistor****2SD679****ELECTRICAL CHARACTERISTICS****T<sub>C</sub>=25°C unless otherwise specified**

| SYMBOL                | PARAMETER                            | CONDITIONS                                 | MIN  | TYP. | MAX | UNIT |
|-----------------------|--------------------------------------|--|------|------|-----|------|
| V <sub>CEO(SUS)</sub> | Collector-Emitter Sustaining Voltage | I <sub>C</sub> = 30mA, I <sub>B</sub> = 0  | 70   |      |     | V    |
| V <sub>CE(sat)</sub>  | Collector-Emitter Saturation Voltage | I <sub>C</sub> = 3A, I <sub>B</sub> = 12mA |      |      | 2.0 | V    |
| V <sub>BE(on)</sub>   | Base-Emitter On Voltage              | I <sub>C</sub> = 3A; V <sub>CE</sub> = 3V  |      |      | 2.2 | V    |
| I <sub>CBO</sub>      | Collector Cutoff Current             | V <sub>CB</sub> = 70V, I <sub>E</sub> = 0  |      |      | 0.1 | mA   |
| I <sub>CEO</sub>      | Collector Cutoff Current             | V <sub>CE</sub> = 70V, I <sub>B</sub> = 0  |      |      | 0.5 | mA   |
| I <sub>EBO</sub>      | Emitter Cutoff Current               | V <sub>EB</sub> = 5V; I <sub>C</sub> = 0   |      |      | 2.0 | mA   |
| h <sub>FE-1</sub>     | DC Current Gain                      | I <sub>C</sub> = 1A; V <sub>CE</sub> = 3V  | 1000 |      |     |      |
| h <sub>FE-2</sub>     | DC Current Gain                      | I <sub>C</sub> = 3A; V <sub>CE</sub> = 3V  | 500  |      |     |      |

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