

## isc Silicon NPN Darlington Power Transistor

## MJE800T

## DESCRIPTION

- Collector–Emitter Breakdown Voltage—  
:  $V_{(BR)CEO} = 60\text{ V}$
- DC Current Gain—  
:  $h_{FE} = 750(\text{Min}) @ I_C = 1.5\text{A}$   
=  $100(\text{Min}) @ I_C = 4\text{A}$
- Complement to Type MJE700T
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

## APPLICATIONS

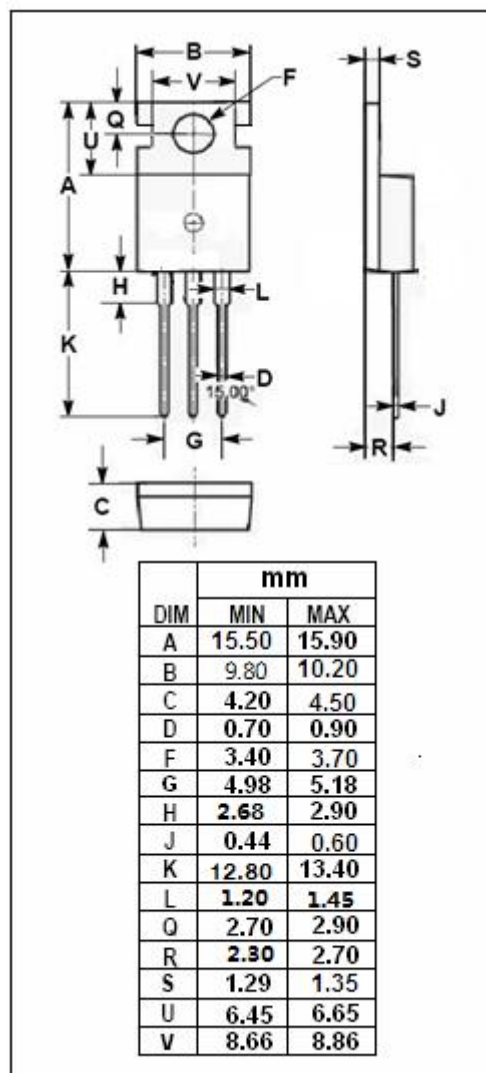
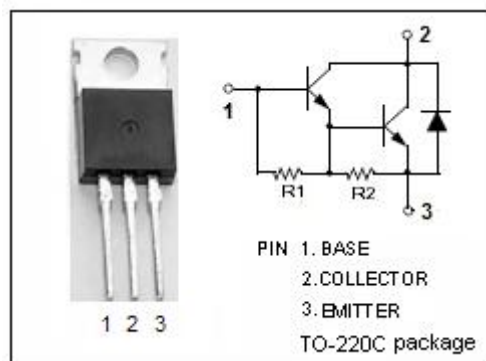
- Designed for general-purpose amplifier and low-speed switching applications

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

| SYMBOL    | PARAMETER                                             | VALUE   | UNIT             |
|-----------|-------------------------------------------------------|---------|------------------|
| $V_{CBO}$ | Collector-Base Voltage                                | 60      | V                |
| $V_{CEO}$ | Collector-Emitter Voltage                             | 60      | V                |
| $V_{EBO}$ | Emitter-Base Voltage                                  | 5       | V                |
| $I_C$     | Collector Current-Continuous                          | 4       | A                |
| $I_B$     | Base Current                                          | 0.1     | A                |
| $P_C$     | Collector Power Dissipation<br>$T_C=25^\circ\text{C}$ | 50      | W                |
| $T_j$     | Junction Temperature                                  | 150     | $^\circ\text{C}$ |
| $T_{stg}$ | Storage Temperature Range                             | -55~150 | $^\circ\text{C}$ |

## THERMAL CHARACTERISTICS

| SYMBOL        | PARAMETER                            | MAX | UNIT               |
|---------------|--------------------------------------|-----|--------------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 2.5 | $^\circ\text{C/W}$ |



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## ELECTRICAL CHARACTERISTICS

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

| SYMBOL          | PARAMETER                            | CONDITIONS                                                                        | MIN | MAX        | UNIT |
|-----------------|--------------------------------------|-----------------------------------------------------------------------------------|-----|------------|------|
| $V_{(BR)CEO}$   | Collector-Emitter Breakdown Voltage  | $I_C=50\text{mA}; I_B=0$                                                          | 60  |            | V    |
| $V_{CE(sat)-1}$ | Collector-Emitter Saturation Voltage | $I_C=1.5\text{A}; I_B=30\text{mA}$                                                |     | 2.5        | V    |
| $V_{CE(sat)-2}$ | Collector-Emitter Saturation Voltage | $I_C=4\text{A}; I_B=40\text{mA}$                                                  |     | 3.0        | V    |
| $V_{BE(on)-1}$  | Base-Emitter On Voltage              | $I_C=1.5\text{A}; V_{CE}=3\text{V}$                                               |     | 2.5        | V    |
| $V_{BE(on)-2}$  | Base-Emitter On Voltage              | $I_C=4\text{A}; V_{CE}=3\text{V}$                                                 |     | 3.0        | V    |
| $I_{CEO}$       | Collector Cutoff Current             | $V_{CE}=60\text{V}; I_B=0$                                                        |     | 0.1        | mA   |
| $I_{CBO}$       | Collector Cutoff Current             | $V_{CB}=60\text{V}; I_E=0$<br>$V_{CB}=60\text{V}; I_E=0; T_C=100^{\circ}\text{C}$ |     | 0.1<br>0.5 | mA   |
| $I_{EBO}$       | Emitter Cutoff Current               | $V_{EB}=5\text{V}; I_C=0$                                                         |     | 2.0        | mA   |
| $h_{FE-1}$      | DC Current Gain                      | $I_C=1.5\text{A}; V_{CE}=3\text{V}$                                               | 750 |            |      |
| $h_{FE-2}$      | DC Current Gain                      | $I_C=4\text{A}; V_{CE}=3\text{V}$                                                 | 100 |            |      |

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