

**isc Silicon NPN Darlington Power Transistor**
**MJE803**
**DESCRIPTION**

- Collector–Emitter Breakdown Voltage—  
:  $V_{(BR)CEO} = 80\text{ V}$
- DC Current Gain—  
:  $h_{FE} = 750(\text{Min}) @ I_C = 2\text{ A}$   
=  $100(\text{Min}) @ I_C = 4\text{ A}$
- Complement to Type MJE703
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

**APPLICATIONS**

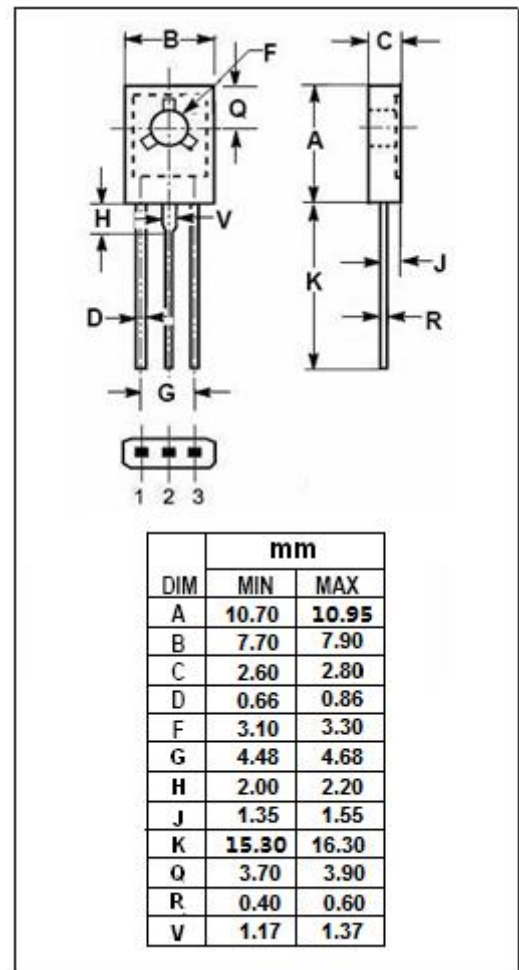
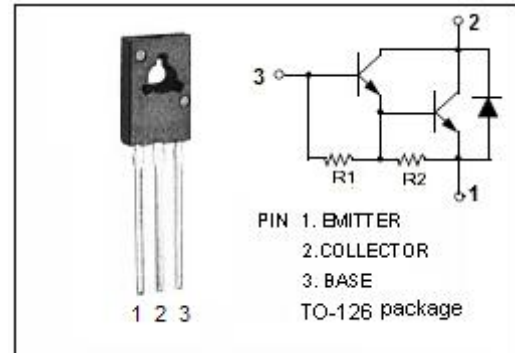
- Designed for general-purpose amplifier and low-speed switching applications

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	80	V
$V_{CEO}$	Collector-Emmitter Voltage	80	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 $T_C = 25^\circ\text{C}$	40	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	3.13	$^\circ\text{C/W}$



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## MJE803

## ELECTRICAL CHARACTERISTICS

T<sub>c</sub>=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage	I <sub>c</sub> = 50mA; I <sub>B</sub> = 0	80		V
V <sub>CE(sat)-1</sub>	Collector-Emitter Saturation Voltage	I <sub>c</sub> = 2A; I <sub>B</sub> = 40mA		2.8	V
V <sub>CE(sat)-2</sub>	Collector-Emitter Saturation Voltage	I <sub>c</sub> = 4A; I <sub>B</sub> =-40mA		3.0	V
V <sub>BE(on)-1</sub>	Base-Emitter On Voltage	I <sub>c</sub> = 2A; V <sub>CE</sub> = 3V		2.5	V
V <sub>BE(on)-2</sub>	Base-Emitter On Voltage	I <sub>c</sub> = 4A; V <sub>CE</sub> = -3V		3.0	V
I <sub>CEO</sub>	Collector Cutoff Current	V <sub>CE</sub> = 80V; I <sub>B</sub> = 0		0.1	mA
I <sub>CBO</sub>	Collector Cutoff Current	V <sub>CB</sub> = 80V; I <sub>E</sub> = 0 V <sub>CB</sub> = 80V; I <sub>E</sub> = 0; T <sub>c</sub> = 100°C		0.1 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> = 2A ; V <sub>CE</sub> = 3V	750		
h <sub>FE-2</sub>	DC Current Gain	I <sub>c</sub> = 4A ; V <sub>CE</sub> = 3V	100		

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