

# MJE800/1/2/3 MJE700/1/2/3

## MEDIUM POWER DARLINGTONS

#### DESCRIPTION

The MJE800. MJE801, MJE802 and MJE803 are silicon epitaxial-base NPN power transistors in monolithic Darlington configuration and are mounted in Jedec TO-126 plastic package. They are intended for use in medium power linear and switching applications.

The complementary PNP types are the MJE700, MJE701, MJE702 and MJE703 respectively.



#### INTERNAL SCHEMATIC DIAGRAMS



#### ABSOLUTE MAXIMUM RATINGS

Symbol		Va			
	Parameter	MJE800/1 MJE700/1	MJE802/3 MJE702/3	Unit	
V <sub>CBO</sub>	Collector-base Voltage (I <sub>E</sub> = 0)	60	80	V	
VCEO	Collector-emitter Voltage (I <sub>B</sub> = 0)	60	80	V	
VEBO	Emitter-base Voltage (I <sub>C</sub> = 0)		5		
1 <sub>C</sub>	Collector Current		4		
1 <sub>B</sub>	Base Current	0	0.1		
Ptot	Total Power Dissipation at T <sub>case</sub> ≤ 25°C	4	40		
Tstg	Storage Temperature	- 65 t	- 65 to 150		
T,	Junction Temperature	1!	150		

For PNP types voltage and current values are negative.

### MJE800/1/2/3-MJE700/1/2/3

#### THERMAL DATA

Rth j-case 1	Thermal Resistance Junction-case	Max	3.13	°C/W
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ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
І <sub>сво</sub>	Collector Cutoff Current (I <sub>E</sub> = 0)	$V_{CB}$ = rated $V_{CBO}$ $V_{CB}$ = rated $V_{CBO}$ $T_{case}$ = 100°C			100 500	μΑ μΑ
ICEO	Collector Cutoff Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = rated V <sub>CEO</sub>			100	μA
IEBO	Emitter Cutoff Current ( $I_C = 0$ )	V <sub>EB</sub> = 5V			2	mA
V <sub>CEO(sus)</sub> °	Collector-emitter Sustaining Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> = 50mA for MJE800/1, MJE700/1 for MJE802/3, MJE702/3	60 80			V V
V <sub>CE(sat)</sub> *	Collector-emitter Saturation Voltage	$ \begin{array}{ccccc} I_{C} = 4A & I_{B} = 40 \text{mA} \\ \text{for MJE800/2, MJE700/2} \\ I_{C} = 1.5A & I_{B} = 30 \text{mA} \\ \text{for MJE801/3, MJE701/3} \\ I_{C} = 2A & I_{B} = 40 \text{mA} \end{array} $			3 2.5 2.8	V V V
V <sub>BE</sub> *	Base-emitter Voltage	$\label{eq:linear} \begin{array}{llllllllllllllllllllllllllllllllllll$			3 2.5 2.5	v v v
h <sub>FE</sub> *	DC Current Gain	$\label{eq:constraint} \begin{array}{llllllllllllllllllllllllllllllllllll$	100 750 750			
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = 1.5A V <sub>CE</sub> = 3V f = 1MHz	1			

\* Pulsed . pulse duration = 300µs, duty cycle = 1.5%.



Safe Operating Areas.



DC Transconductance.



Small Signal Current Gain.



DCCurrent Gain.



Collector-emitter Saturation Voltage.



Collector-emitter Saturation Voltage (NPN).



SGS-THOMSON

Saturated Switching Characteristics (NPN).



Collector-emitter Saturation Voltage (PNP).



Collector-emitter Saturation Voltage (PNP).



