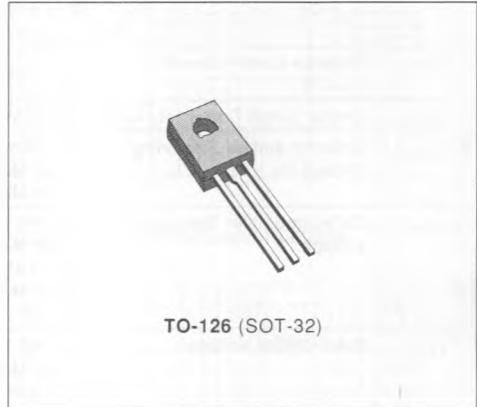


MEDIUM POWER DARLINGTONS

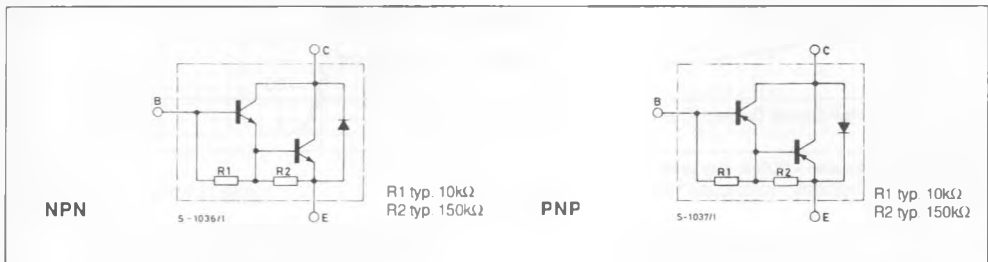
DESCRIPTION

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	Parameter	Value		Unit
		MJE800/1 MJE700/1	MJE802/3 MJE702/3	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	60	80	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	60	80	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5		V
I_C	Collector Current	4		A
I_B	Base Current	0.1		A
P_{101}	Total Power Dissipation at $T_{case} \leq 25^\circ\text{C}$	40		W
T_{stg}	Storage Temperature	- 65 to 150		$^\circ\text{C}$
T_J	Junction Temperature	150		$^\circ\text{C}$

For PNP types voltage and current values are negative.

THERMAL DATA

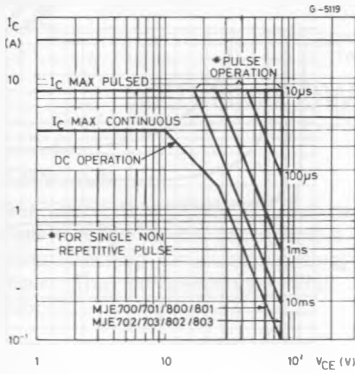
$R_{th(j-case)}$	Thermal Resistance Junction-case	Max	3.13	°C/W
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ unless otherwise specified)

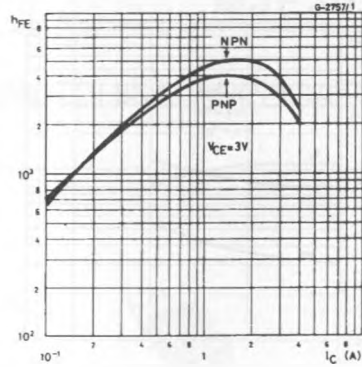
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = \text{rated } V_{CB0}$ $V_{CB} = \text{rated } V_{CB0}$ $T_{case} = 100^{\circ}C$			100 500	μA μA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = \text{rated } V_{CEO}$			100	μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 5V$			2	mA
$V_{CEO(sus)}$ *	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = 50mA$ for MJE800/1, MJE700/1 for MJE802/3, MJE702/3	60 80			V V
$V_{CE(sat)}$ *	Collector-emitter Saturation Voltage	$I_C = 4A$ $I_B = 40mA$ for MJE800/2, MJE700/2 $I_C = 1.5A$ $I_B = 30mA$ for MJE801/3, MJE701/3 $I_C = 2A$ $I_B = 40mA$			3 2.5 2.8	V V V
V_{BE} *	Base-emitter Voltage	$I_C = 4A$ $V_{CE} = 3V$ for MJE800/1, MJE700/1 $I_C = 1.5A$ $V_{CE} = 3V$ for MJE801/3, MJE701/3 $I_C = 2A$ $V_{CE} = 3V$			3 2.5 2.5	V V V
h_{FE} *	DC Current Gain	$I_C = 4A$ $V_{CE} = 3V$ for MJE800/2, MJE700/2 $I_C = 1.5A$ $V_{CE} = 3V$ for MJE801/3, MJE701/3 $I_C = 2A$ $V_{CE} = 3V$	100 750 750			
h_{fe}	Small Signal Current Gain	$I_C = 1.5A$ $V_{CE} = 3V$ $f = 1MHz$	1			

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

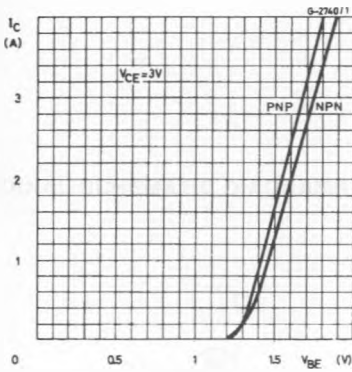
Safe Operating Areas.



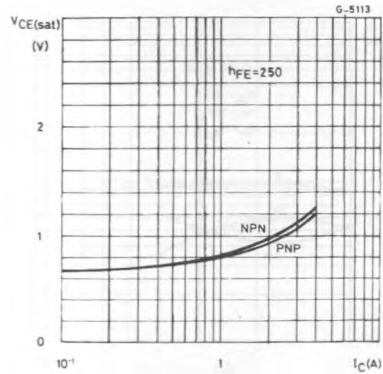
DCCurrent Gain.



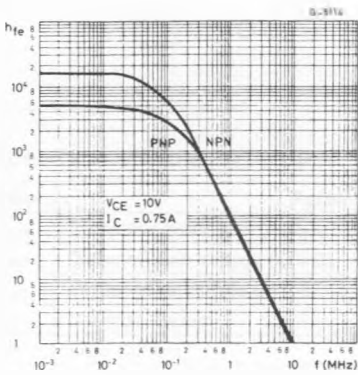
DC Transconductance.



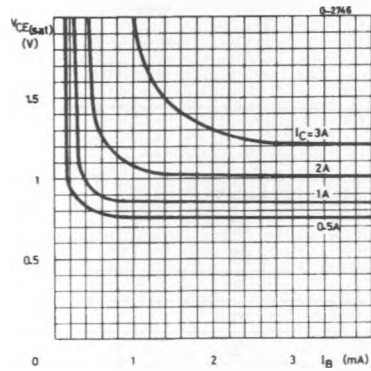
Collector-emitter Saturation Voltage.



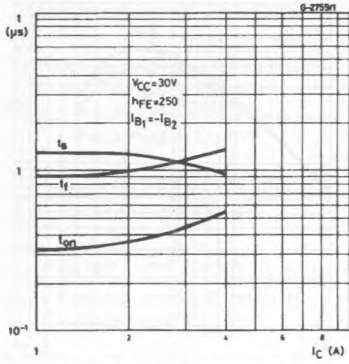
Small Signal Current Gain.



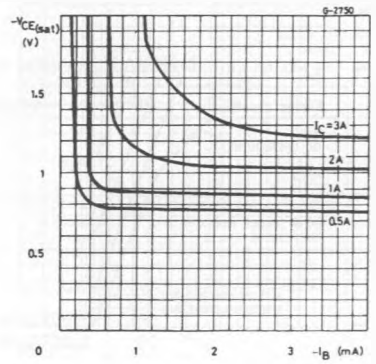
Collector-emitter Saturation Voltage (NPN).



Saturated Switching Characteristics (NPN).



Collector-emitter Saturation Voltage (PNP).



Collector-emitter Saturation Voltage (PNP).

