

SILICON NPN POWER DARLINGTON TRANSISTOR

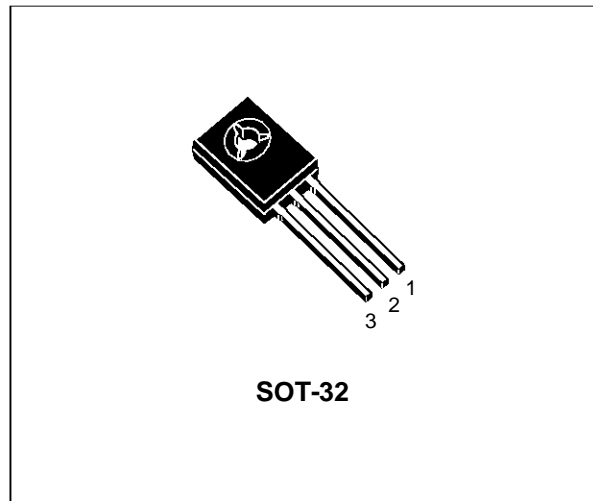
- SGS-THOMSON PREFERRED SALESTYPE
- NPN DARLINGTON

APPLICATIONS

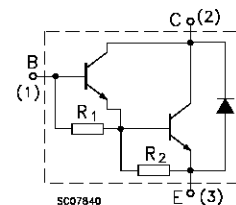
- GENERAL PURPOSE SWITCHING

DESCRIPTION

The MJE802 is a silicon epitaxial-base NPN transistor in monolithic Darlington configuration and it is mounted in Jedec SOT-32 plastic package. It is intended for use in medium power linear and switching applications.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage ($I_E = 0$)	80	V
V_{CEO}	Collector-Emitter Voltage ($I_B = 0$)	80	V
V_{EBO}	Base-Emitter Voltage ($I_C = 0$)	5	V
I_C	Collector Current	4	A
I_B	Base Current	0.1	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25\text{ }^\circ\text{C}$	40	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ\text{C}$
T_j	Max Operating Junction Temperature	150	$^\circ\text{C}$

MJE802

THERMAL DATA

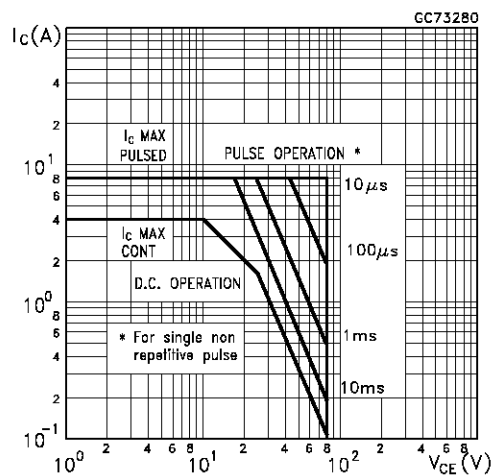
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	3.13	$^{\circ}\text{C}/\text{W}$
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ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

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

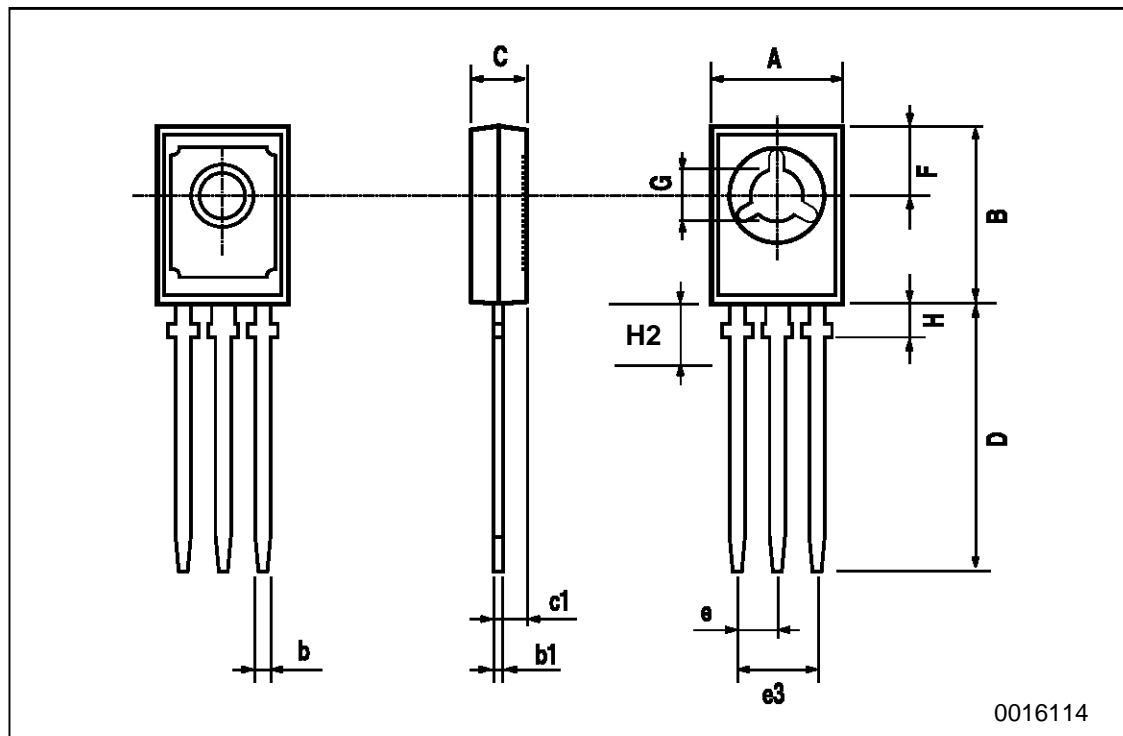
* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 1.5\%$

Safe Operating Area



SOT-32 (TO-126) MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.040		0.106
c1	1.0		1.3	0.039		0.050
D	15.4		16.0	0.606		0.629
e		2.2			0.087	
e3	4.15		4.65	0.163		0.183
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100
H2		2.15			0.084	



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