



SILICON NPN POWER DARLINGTON TRANSISTOR

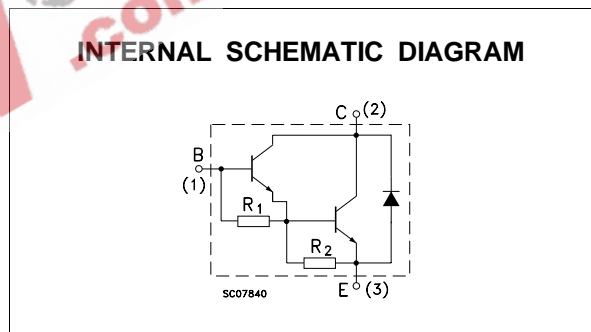
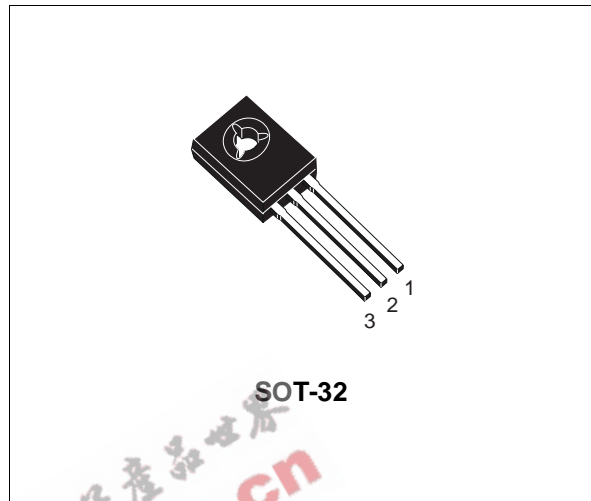
- STMicroelectronics PREFERRED SALESTYPE
- NPN DARLINGTON

APPLICATIONS

- GENERAL PURPOSE SWITCHING

DESCRIPTION

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



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 $T_{case} \leq 25^\circ C$	40	W
T_{stg}	Storage Temperature	-65 to 150	$^\circ C$
T_j	Max Operating Junction Temperature	150	$^\circ C$

MJE802

THERMAL DATA

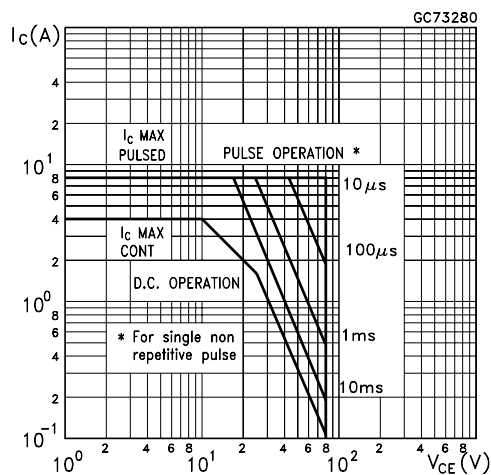
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max	3.13	$^{\circ}C/W$
---------------	-------------------------------------	-----	------	---------------

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}C$ 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
		$V_{CB} = \text{rated } V_{CBO}$ $T_{case} = 100^{\circ}C$			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 ($I_C = 0$)	$V_{EB} = 5 V$			2	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage ($I_B = 0$)	$I_C = 50 mA$	80			V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 4 A$			3	V
		$I_C = 1.5 A$	$I_B = 40 mA$ $I_B = 30 mA$		2.5	V
V_{BE}^*	Base-Emitter Voltage	$I_C = 4 A$	$V_{CE} = 3 V$		3	V
		$I_C = 1.5 A$	$V_{CE} = 3 V$		2.5	V
h_{FE}^*	DC Current Gain	$I_C = 4 A$	$V_{CE} = 3 V$	100		
		$I_C = 1.5 A$	$V_{CE} = 3 V$	750		
h_{fe}	Small Signal Current Gain	$I_C = 1.5 A$ $f = 1 MHz$	$V_{CE} = 3 V$	1		

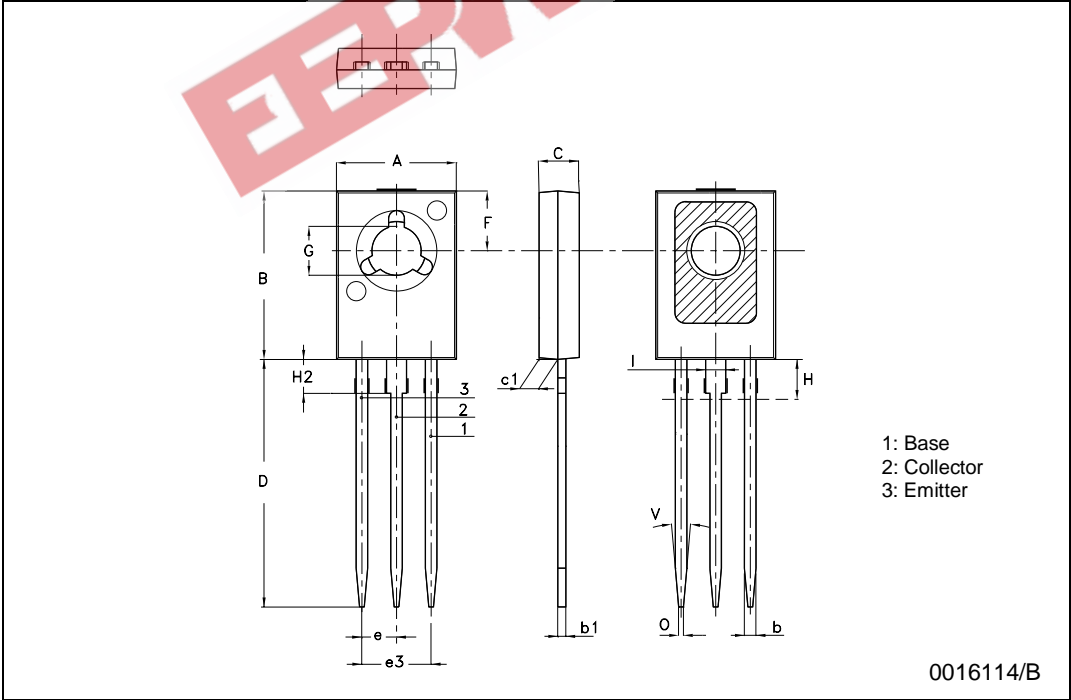
* Pulsed: Pulse duration = 300 μs , duty cycle $\leq 1.5\%$

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		0.425
b	0.7		0.9	0.028		0.035
b1	0.40		0.65	0.015		0.025
C	2.4		2.7	0.094		0.106
c1	1.0		1.3	0.039		0.051
D	15.4		16.0	0.606		0.630
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100
H2		2.15			0.084	
I		1.27			0.05	
O		0.3			0.011	
V		10°			10°	





Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics.

All other names are the property of their respective owners.

© 2003 STMicroelectronics – All Rights reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States.

<http://www.st.com>