SGS-THOMSON MICROELECTRONICS

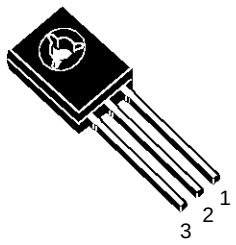
MJE802
MJE803

SILICON NPN POWER DARLINGTON TRANSISTORS

- SGS-THOMSON PREFERRED SALESTYPES

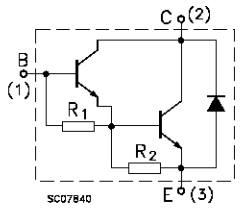
DESCRIPTION

The MJE802 and MJE803 are silicon epitaxial-base NPN transistors in monolithic Darlington configuration and are mounted in Jedec SOT-32 plastic package. They are intended for use in medium power linear and switching applications.



SOT-32

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

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

For PNP types voltage and current values are negative.

THERMAL DATA

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

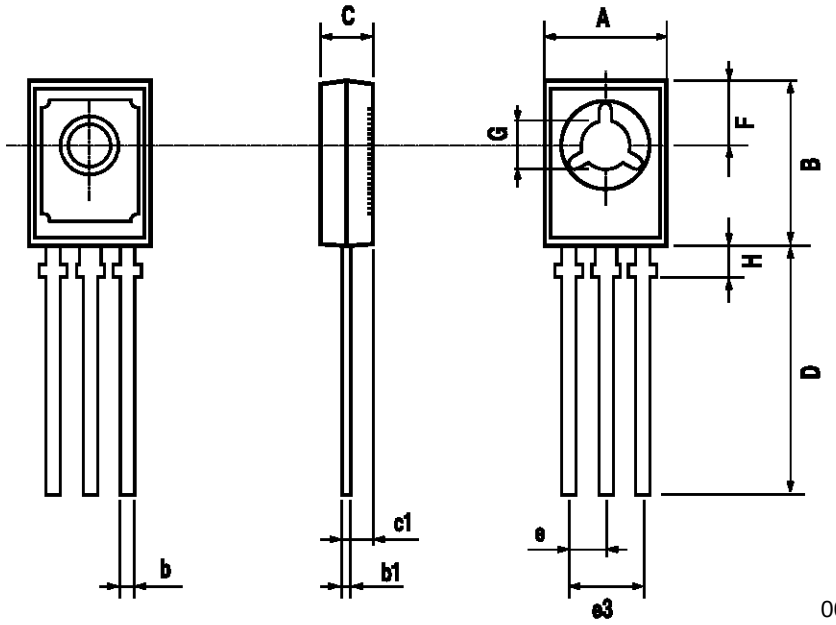
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

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

* Pulsed: Pulse duration = 300µs, duty cycle ≤ 1.5%

SOT-32 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	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
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



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