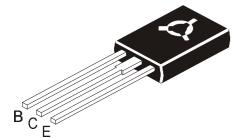


NPN EPITAXIAL SILICON POWER TRANSISTORS

MJE13003

MJE13002

TO-126 Plastic Package



Suitable for Switching Regulators, Inverters, Motor Control Solenoid/Relay Drivers and Deflection Circuits

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	MJE13002	MJE13003	UNIT
Collector Emitter Voltage	V _{CEO(sus)}	300	400	V
Collector Emitter Voltage	V _{CEV}	600	700	V
Emitter Base Voltage	V _{EBO}		9.0	V
Collector Current Continuous	Ι _C		1.5	Α
Peak	*I _{CM}		3.0	А
Base Current Continuous	Ι _Β		0.75	А
Peak	*I _{BM}		1.5	А
Emitter Current Continuous	Ι _Ε		2.25	Α
Peak	*I _{EM}		4.5	А
Total Power Dissipation @ T _a =25 ^o C	P _D		1.4	W
Derate Above 25°C			11.2	mW/ ºC
Total Power Dissipation @ T _c =25 ^o C	P _D		40	W
Derate Above 25°C			320	mW/ ºC
Operating And Storage Junction Temperature Range	$T_{j,}T_{stg}$	- 6	65 to 150	°C

THERMAL RESISTANCE

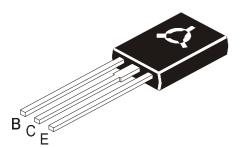
Junction to Case	R _{th (j-c)}	3.12	°C/W
Junction to Ambient in free air	R _{th (j-a)}	89	°C/W
Maximum Load Temperature for			
Soldering Purposes 1/8" from Case for 5	TL	275	°C
Seconds			

*Pulse Test: Pulse Width=5ms, Duty Cycle<10%

ELECTRICAL CHARACTERISTICS (T_c=25^oC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	ΤΥΡ	MAX	UNIT
Collector Emitter Sustaining Voltage	**V _{CEO(sus)}	I _C =10mA, I _B =0				
		MJE13002	300			V
		MJE13003	400			V
Collector Cuttoff Current	I _{CEV}	V _{CEV} =Rated Value, V _{BE} (off)=1.5V			1.0	mA
		V _{CEV} =Rated Value, V _{BE} (off)=1.5V,T _c =100°C			5.0	mA
Emitter Cuttoff Current	I _{EBO}	V _{EB} =9V, I _C =0			1.0	mA

NPN SILICON POWER TRANSISTORS



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ELECTRICAL CHARACTERISTICS (T_c=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
DC Current Gain	**h _{FE}	I _C =0.5A, V _{CE} =2V	8		40	
		I _C =1A,V _{CE} =2V	5		25	
Collector Emitter Saturation Voltage	**V _{CE(sat)}	I _C =0.5A, I _B =0.1A			0.5	V
		I _C =1A, I _B =0.25A			1.0	V
		I _C =1.5A, I _B =0.5A			3.0	V
		I _C =1A, I _B =0.25A,T _C =100 ^o C			1.0	V
Base Emitter Saturation Voltage	**V _{BE(sat)}	I _C =0.5A, I _B =0.1A			1.0	V
		I _C =1A, I _B =0.25A			1.2	V
		I _C =1A, I _B =0.25A, T _C =100°C			1.1	V

DYNAMIC CHARACTERISTICS

Transition Frequency	f _T	I _C =100mA, V _{CE} =10V	4.0	4.0		MHz
		f=1MHz				
Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=0.1MHz		21		pF

Resistive Load

Delay Time	t _d	V _125V ↓ _1A		0.1	μs
Rise Time	t _r	V _{CC} =125V, I _C =1A,		1.0	μs
Storage Time	t _s	I _{B1} =I _{B2} =0.2A, t _p =25μs, Duty Cycle <u><</u> 1%		4.0	μs
Fall Time	t _f			0.7	μs

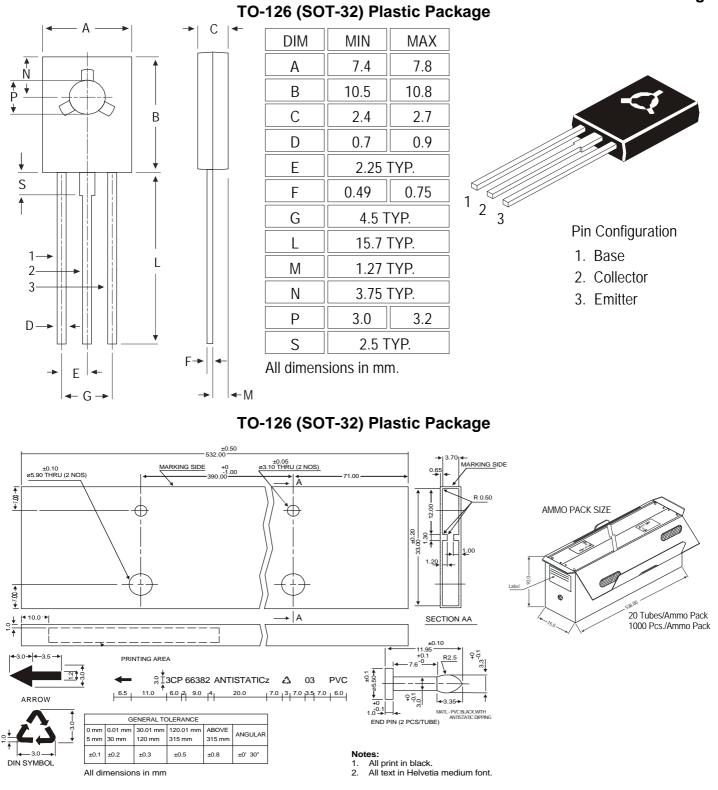
Inductive Load, Clamped

Voltage Storage Time	t _{sv}	V _{Clamp} =300V, I _C =1A,		4.00	μs
Crossover Time	t _C	I _{B1} =0.2A, V _{BE(off)} =5V,		0.75	μs
Fall Time	t _{fi}	T _c =100°C	0.15		μs

**Pulse Test: Pulse Width=300ms, Duty Cycle<2%

MJE13002 MJE13003

TO126 Plastic Package



Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-126 Bulk	500 pcs/polybag	340 gm/500 pcs	3" x 7.5" x 7.5"	2K	17" x 15" x 13.5"	32K	31 kgs
TO-126 Tube	50 pcs/tube	73 gm/50 pcs	3" x 3.7" x 21.5"	1K	19" x 19" x 19"	10K	15 kgs

MJE13002 MJE13003

TO126 Plastic Package

Disclaimer

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