



SILICON PLASTIC POWER TRANSISTOR

NPN MJE13007

...suited for 115 and 220 V switch-mode applications such as Switching Regulators, Inverters, Motor Controls, Solenoid/Relay 400VOLTS/80WATTS

drivers and Deflection circuits.

TO-220

MAXIMUM RATINGS

Rating	Symbol	MJE13007	Unit
Collector-Emitter Voltage	$V_{CEO(SUS)}$	400	Vdc
Collector-Emitter Voltage	V_{CEV}	700	Vdc
Emitter-Base Voltage	V_{EB}	9	Vdc
Collector Current-Continuous	I_C	8	Adc
Peak		16	
Base Current	I_B	4	Adc
--Peak(1)	IBM	8	
Total Power Dissipation @ $T_C=25^\circ C$ Derate above $25^\circ C$	P_D	80 0.64	Watts W/ $^\circ C$
Operating & Storage Junction Temperature Range	T_j, T_{stg}	-65 to +150	$^\circ C$

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction to Case	R_{JC}	1.56	$^\circ C/W$

ELECTRICAL CHARACTERISTICS ($T_C=25^\circ C$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Sustaining Voltage ($I_C=10mA, I_B=0$)	$V_{CEO(SUS)}$	400	—	Vdc
Collector Cutoff Current ($V_{CEV}=\text{Rated Value}, V_{BE}(\text{off})=1.5Vdc$)	I_{CEV}	—	1	mAdc
Emitter Cutoff Current ($V_{BE}=9Vdc, I_C=0$)	I_{EBO}	—	1	mAdc

ON CHARACTERISTICS

DC Current Gain ($I_C=2Adc, V_{CE}=5Vdc$) ($I_C=5Adc, V_{CE}=5Vdc$)	h_{FE}	8 5	60 30	—
Collector-Emitter Saturation Voltage ($I_C=2Adc, I_B=400mAdc$) ($I_C=5Adc, I_B=1Adc$)	$V_{CE(sat)}$	—	1.0 2	Vdc
Base-Emitter Saturation Voltage ($I_C=2Adc, I_B=400mAdc$) ($I_C=5Adc, I_B=1Adc$)	$V_{BE(sat)}$	—	1.2 1.6	Vdc

