



## SWITCHMODE Series NPN Silicon Power Transistors

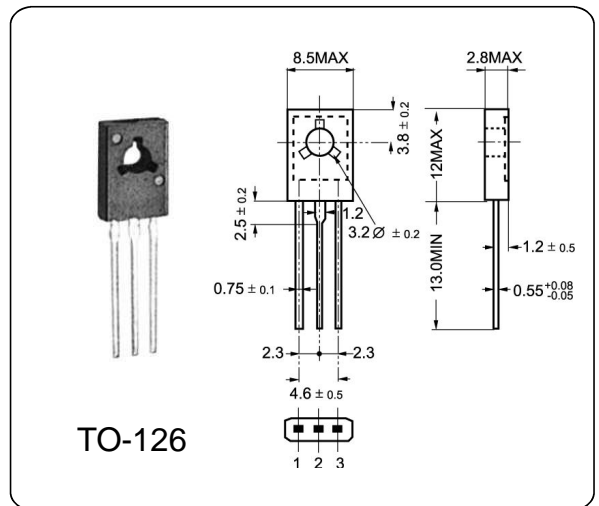
## MJE13003

### DESCRIPTION

These devices are designed for high –voltage, high –speed power switching inductive circuits where fall time is critical. They are particularly suited for 115 and 220 V SWITCHMODE such as Switching Regulator s, Inverters, Motor Controls,applications Solenoid/Relay drivers and Deflection circuits.

### ABSOLUTE MAXIMUM RATINGS ( Ta = 25 °C)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CBO}$	700	V
Collector-Emitter Voltage	$V_{CEO}$	400	V
Emitter-Base Voltage	$V_{EBO}$	9	V
Collector Current	$I_C$	1.5	A
Base Current	$I_B$	0.75	A
Total Dissipation at	$P_{tot}$	40	W
Max. Operating Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55~150	°C



### ELECTRICAL CHARACTERISTICS ( Ta = 25 °C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector Cut-off Current	$I_{CEO}$	$V_{CB}=400V, I_E=0$			1.0	mA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=9V, I_C=0$			1.0	mA
Collector-Emitter Sustaining Voltage	$V_{CEO}$	$I_C=10mA, I_B=0$	400			V
DC Current Gain	$h_{FE(1)}$	$V_{CE}=2V, I_C=0.5A$	8		40	
	$h_{FE(2)}$	$V_{CE}=2V, I_C=1.0A$	5		25	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=0.5A, I_B=100mA$			0.5	V
		$I_C=1A, I_B=250mA$			1.0	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=250mA$			1.2	V
Current Gain Bandwidth Product	$f_T$	$V_{CE}=10V, I_C=100mA$	4	10		MHz
Storage Time	$T_S$	$I_{B1}=I_{B2}=0.2A, t_p=25us$		2	4	us