

JST139E-800D 16A TRIAC

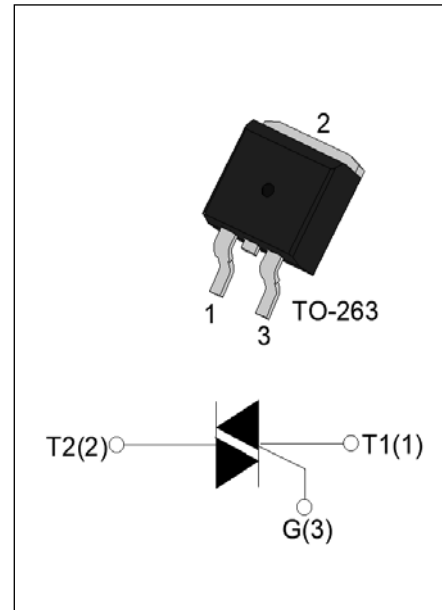
Rev.A.1.0

DESCRIPTION:

The JST139E-800D triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Package TO-263 is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	800	V
$I_{GT} / / /$	5/5/5/10	mA


ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	
Operating junction temperature range		T_j	-40-125	
Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$)		V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)		V_{RRM}	800	V
RMS on-state current ($T_c = 95^\circ\text{C}$)		$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)		I_{TSM}	140	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)			154	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)		I^2t	98	A^2s
Critical rate of rise of on-state current ($I_G=2 I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	-	di/dt	50	$\text{A}/\mu\text{s}$
	-		20	
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)		I_{GM}	4	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	10	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.8)		V_{pp}	4.5	kV

ELECTRICAL CHARACTERISTICS ($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V$ $R_L=33$	- -	MAX.	5	mA
				10	
V_{GT}		ALL	MAX.	1	

ORDERING INFORMATION

J	ST	139	E	-800	D	- /
JieJie Microelectronics Co., Ltd.	Triacs	$I_{T(RMS)}: 16A$	E: TO-263	800: $V_{DRM} / V_{RRM} \quad 800V$	D: IGT1-3 5mA IGT4 10mA	Blank: Tube -TR: Tape & Reel

MARKING

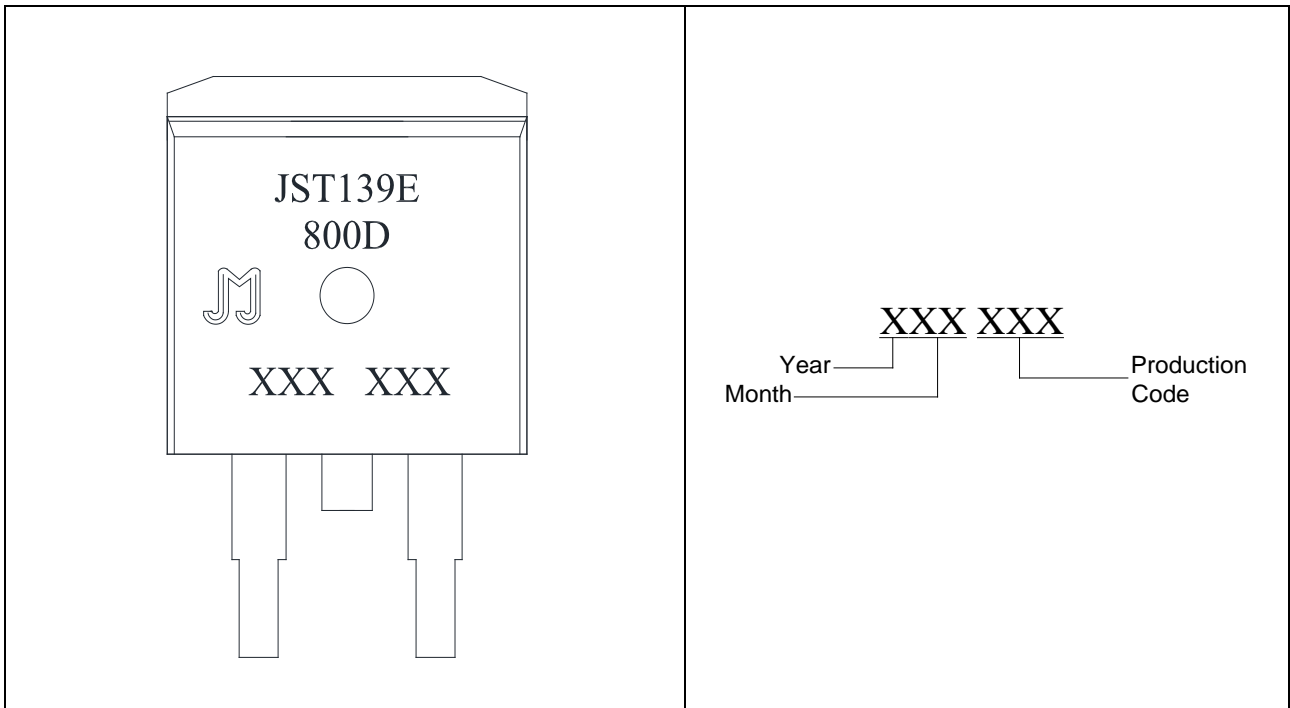


FIG.1 Maximum power dissipation versus RMS on-state current

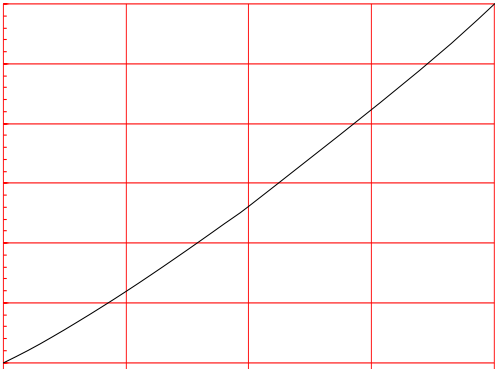


FIG.2: RMS on-state current versus case temperature

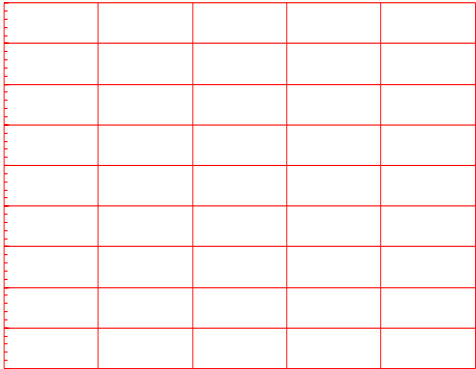


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

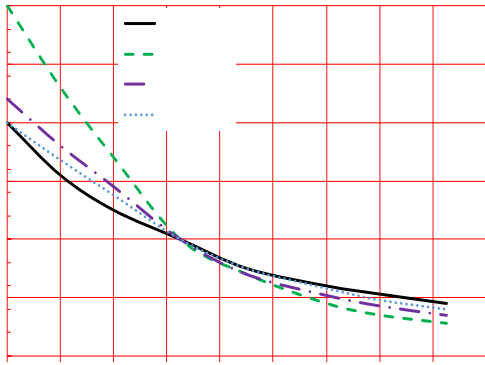
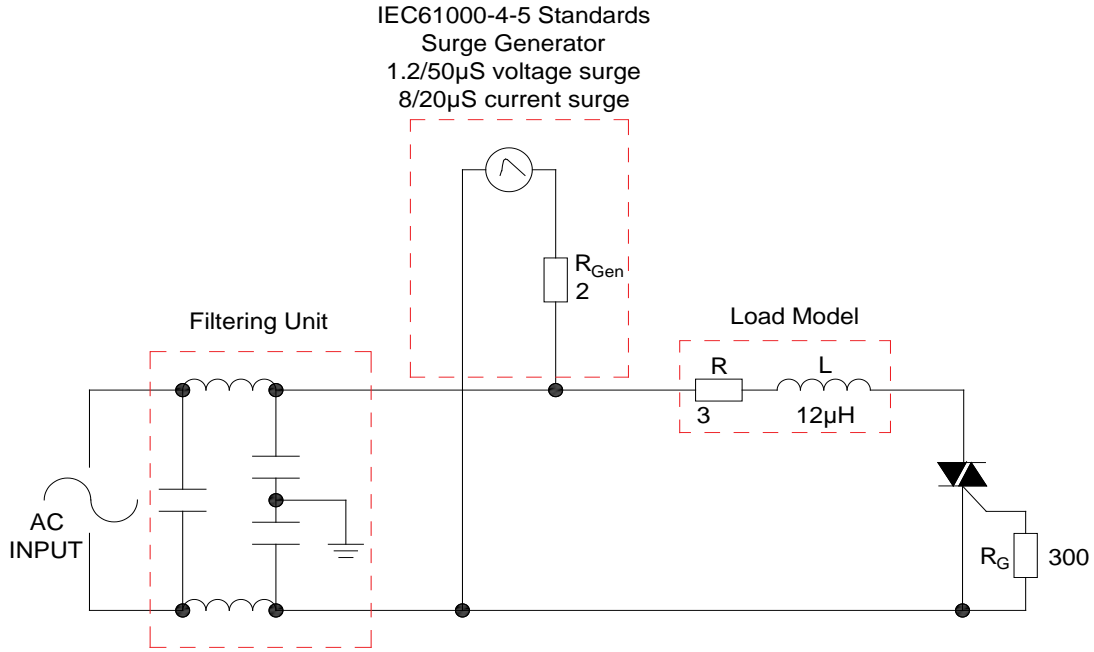
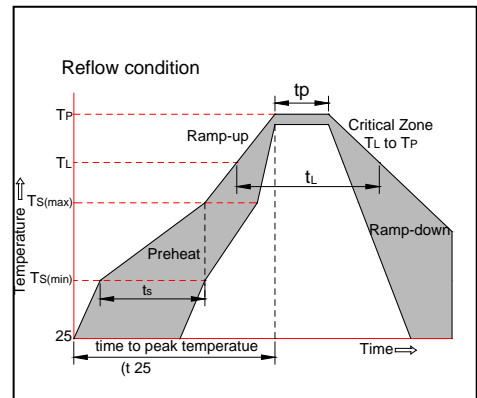


FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SOLDERING PARAMETERS

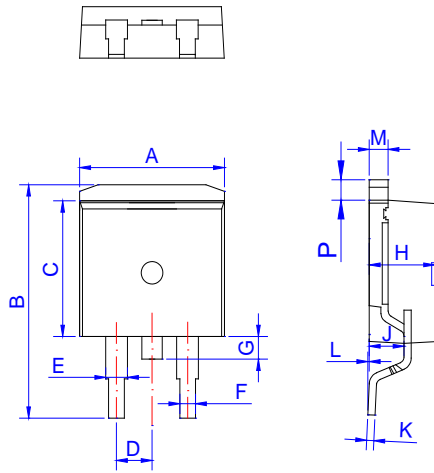
Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min (T _{s(min)})	+150
	-Temperature Max(T _{s(max)})	+200
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp (T _L) to peak)		3 /sec. Max
T _{s(max)} to T _L - Ramp-up Rate		3 /sec. Max
Reflow	-Temperature(T _L) (Liquidus)	+217
	-Temperature(t _L)	60-150 secs.
Peak Temp (T _p)		+260(+0/-5)
Time within 5 of actual Peak Temp (t _p)		20-40secs.
Ramp-down Rate		6 /sec. Max
Time 25 to Peak Temp (T _p)		8 min. Max
Do not exceed		+260



ORDERING INFORMATION

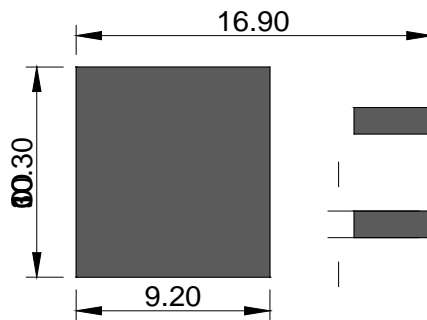
Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		-	-			
JST139E-800D	800	5	10	TO-263	50	Tube 263EiEt

PACKAGE MECHANICAL DATA

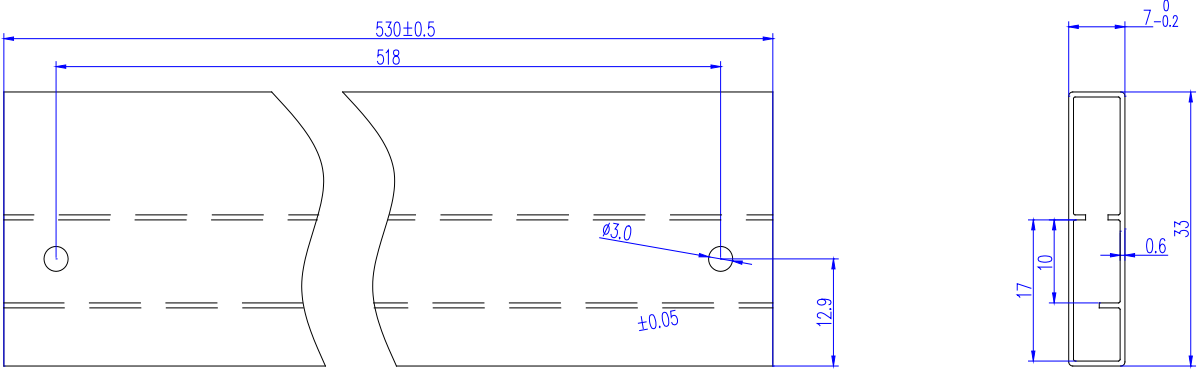


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.37		0.378
D	2.40		2.70	0.094		0.106
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G	1.00		1.50	0.039		0.059
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		0.106
K	0.38		0.55	0.015		0.022
L	0	0.10	0.25	0	0.004	0.010
M	1.25		1.35	0.049		0.053
P	1.20		1.50	0.047		0.059

FOOTPRINT-TO-263 (dimensions in mm)



DELIVERY MODE



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