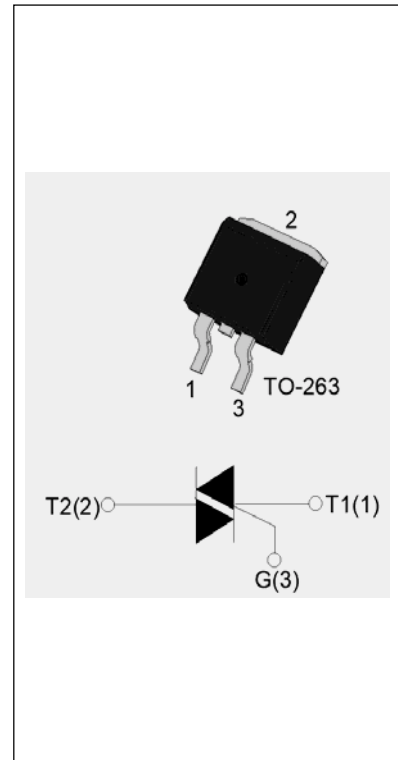




The JST12E-800TW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. JST12E-800TW snubberless triac is especially recommended for use on inductive loads. It can be driven directly through the MCU I/O port. Package TO-263 is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	800	V
$I_{GT} / /$	5/5/5	mA

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 ($T_j=25^\circ C$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ C$)	V_{RRM}	800	V
RMS on-state current ($T_c = 103^\circ C$)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle, $t_p=20ms$, $T_j=25^\circ C$)	I_{TSM}	120	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6ms$, $T_j=25^\circ C$)		132	
I^2t value for fusing ($t_p=10ms$, $T_j=25^\circ C$)	I^2t	72	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=125^\circ C$)	di/dt	50	$A/\mu s$
Peak gate current ($t_p=20\mu s$, $T_j=125^\circ C$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125^\circ C$)	$P_{G(AV)}$	0.5	W
Peak gate power	P_{GM}	10	W



Peak pulse voltage ($T_j=25$; non-repetitive, off-state; FIG.8)	V_{pp}	3.5	kV
--	----------	-----	----

($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V R_L=33$	- -	MAX.	5	mA
V_{GT}		- -	MAX.	1	V
V_{GD}	$V_D=V_{DRM} T_j=125$ $R_L=3.3K$	- -	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	-	MAX.	10	mA
				15	
I_H	$I_T=500mA$		MAX.	10	mA
dV/dt	$V_D=540V$ Gate Open $T_j=125$		MIN.	80	V/ μs
(dI/dt)c	(dV/dt)c=10V/ μs $T_j=125$		MIN.	1	A/ms
t_{on}	$I_G=10mA I_A=200mA I_R=20mA$ $T_j=25$		TYP.	2	μs
t_{off}				20	

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=17A t_p=380\mu s$	$T_j=25$	1.5	V
V_{TO}	Threshold voltage	$T_j=125$	0.77	V
R_D	Dynamic resistance	$T_j=125$	35	m
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	μA
I_{RRM}		$T_j=125$	0.5	mA

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.3	/W
$R_{th(j-a)}$	junction to ambient (AC, in free air, S=2cm ²)	45	/W

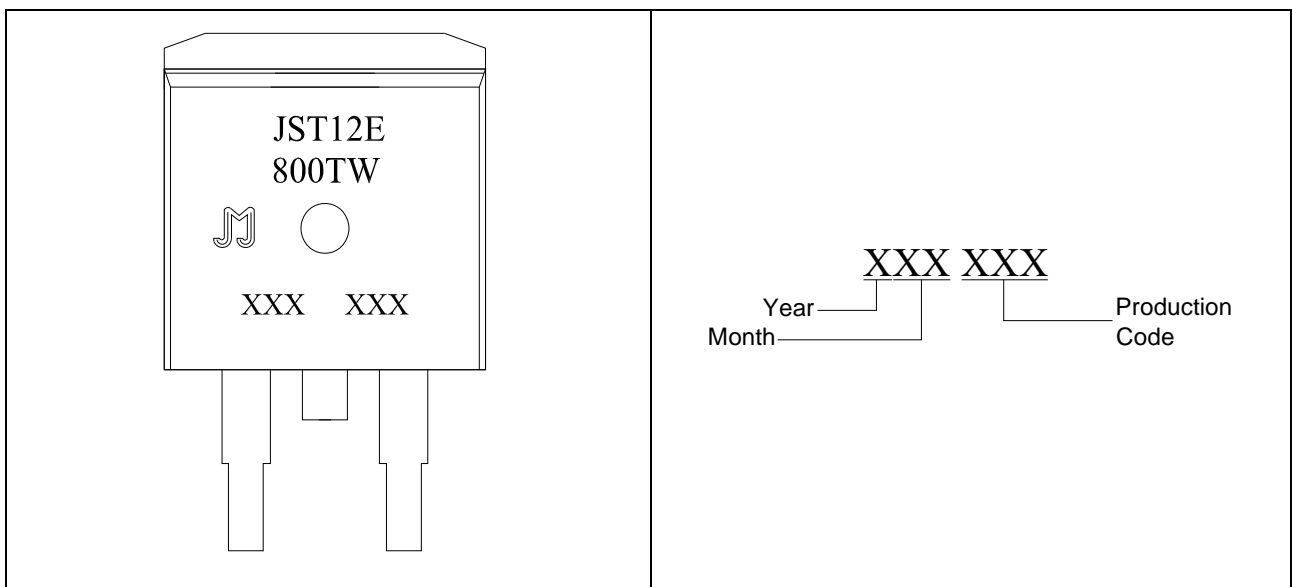
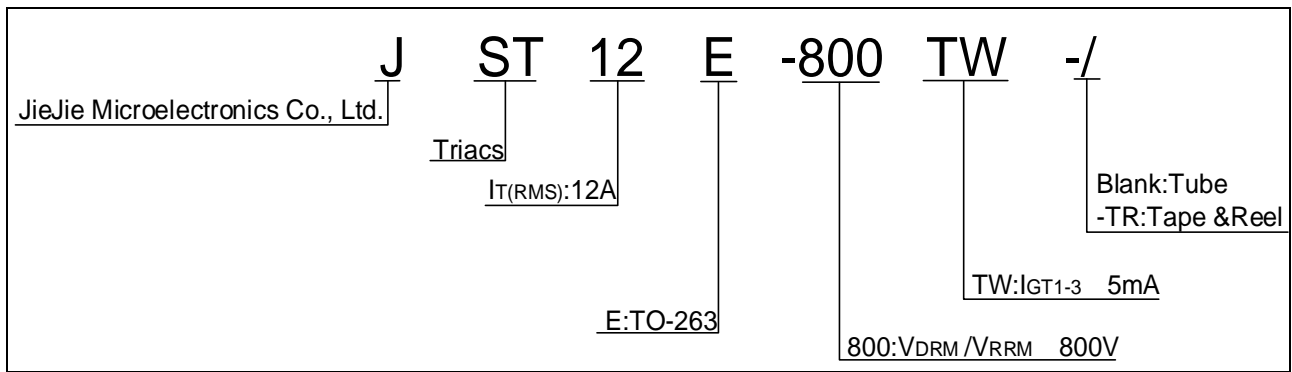


FIG.1 Maximum power dissipation versus RMS on-state current

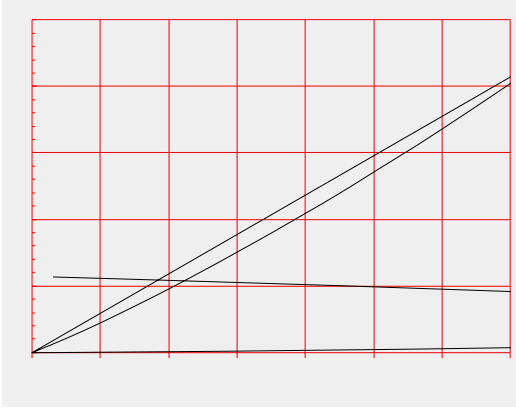


FIG.2: RMS on-state current versus case temperature

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

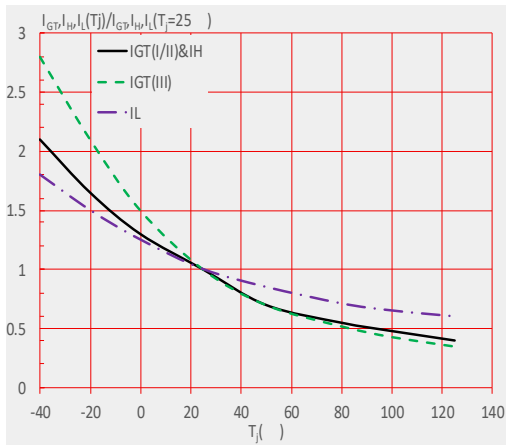
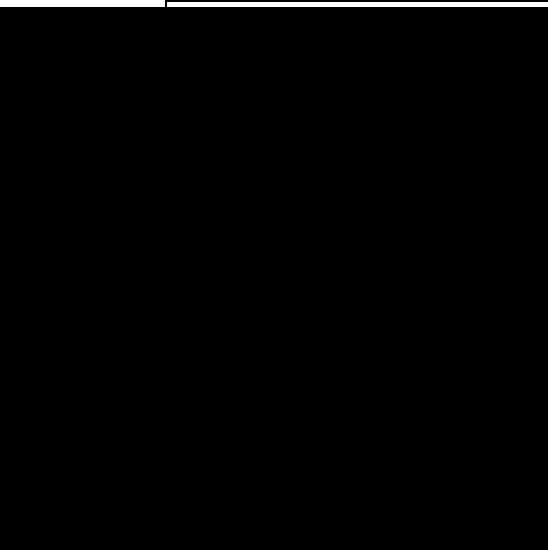
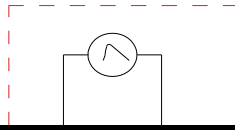


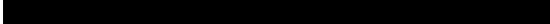
FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards

IEC61000-4-5 Standards
 Surge Generator
 1.2/50 μ S voltage surge
 8/20 μ S current surge



	Pb-Free assembly (see figure at right)
	+150
	+200
(ts)	60-180 secs.
	3 /sec. Max
	3 /sec. Max

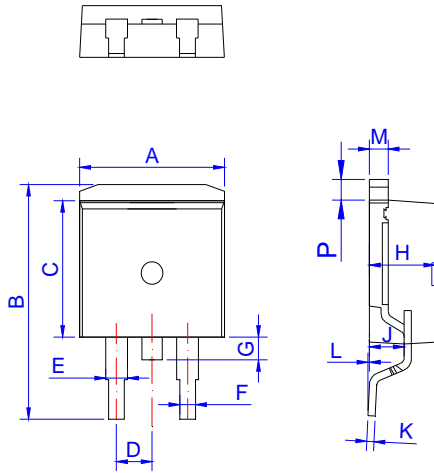
~ € • ð À 0 T J u0 <V`te Tbt" 50 ~ € • Æ`t p .



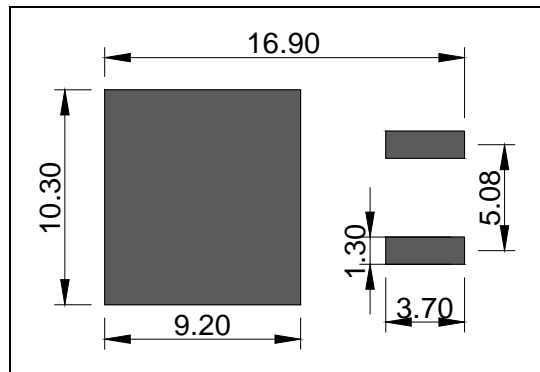
Order code	Voltage V _{DRM} /V _{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		- -			
JST12E-800TW	800	5	TO-263	50	Tube
JST12E-800TW-TR				800	Tape & Reel

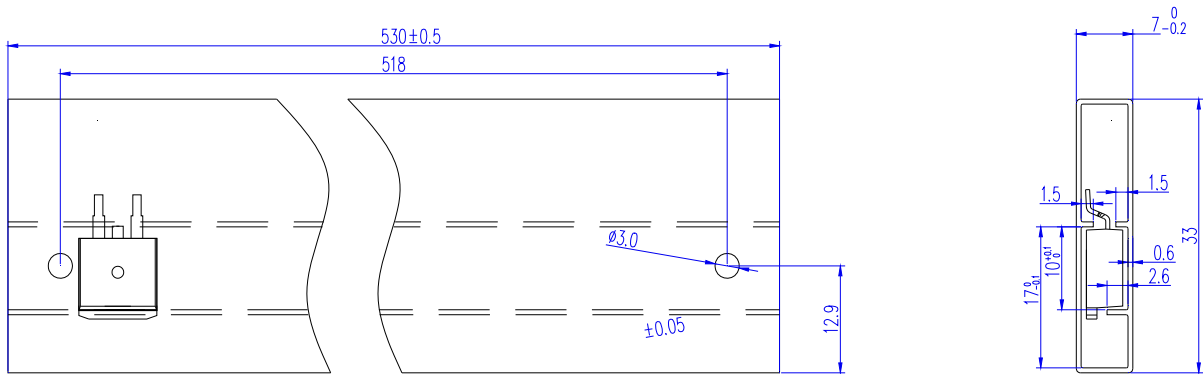
Document Revision History

Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated

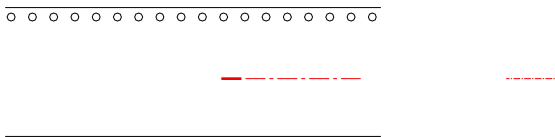


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
B	14.70		15.80	0.579		0.622
C	9.40		9.60	0.37		0.378
D	2.40		2.70	0.094		0.106
E	1.20		1.50	0.047		0.059
F	0.75		0.85	0.029		0.033
G	1.00		1.50	0.039		0.059
H	4.40		4.70	0.173		0.185
J	2.30		2.70	0.091		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





PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	5,000



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	23.70	24.00	24.30	0.933	0.945	0.957
E	1.65	1.75	1.85	0.065	0.069	0.073
F	11.40	11.50	11.60	0.449	0.453	0.457
D0	-	1.50	1.60	-	0.059	0.063
D1	-	1.50	1.60	-	0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	15.90	16.00	16.10	0.626	0.630	0.634
P2	1.90	2.00	2.10	0.075	0.079	0.083
A0	10.80	10.90	11.00	0.425	0.429	0.433
B0	16.20	16.30	16.40	0.638	0.642	0.646
K0	4.80	4.90	5.00	0.189	0.193	0.197
t	0.35	0.40	0.45	0.014	0.016	0.018

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