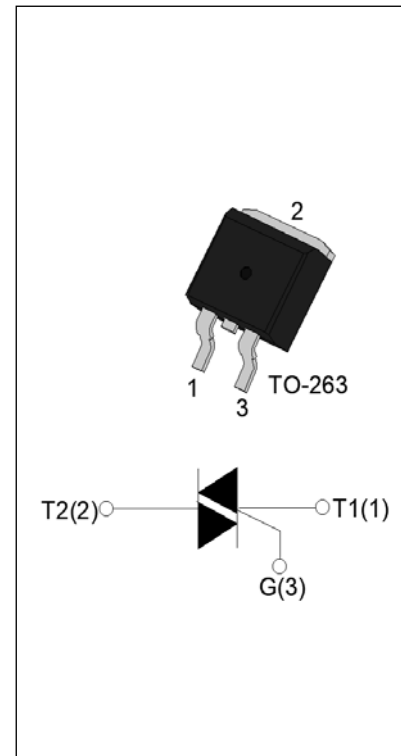


JST08E-800TW 8A TRIAC

Rev.A.1.1

DESCRIPTION:

The JST08E-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. JST08E-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.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	800	V
$I_{GT\ I/II/III}$	5/5/5	mA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-125	$^{\circ}C$
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 ($T_c \leq 107^{\circ}C$)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle , $t_p=20ms$, $T_j=25^{\circ}C$)	I_{TSM}	80	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$, $T_j=25^{\circ}C$)		88	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	32	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 ($T_j=25^{\circ}\text{C}$; non-repetitive, off-state; FIG.8)	V_{pp}	1.5	kV
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ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I - II -III	MAX.	5	mA
V_{GT}		I - II -III	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	I - II -III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX.	10	mA
		II		15	
I_H	$I_T=100\text{mA}$		MAX.	10	mA
dV/dt	$V_D=540\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	100	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=10\text{V}/\mu\text{s}$, $T_j=125^{\circ}\text{C}$		MIN.	0.5	A/ms
t_{on}	$I_G=10\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	2	μs
t_{off}				20	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=11\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.8	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	44	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.35	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.6	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC, in free air, $S=2\text{cm}^2$)	45	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

J	ST	08	E	-800	TW	-/
JieJie Microelectronics Co., Ltd.	Triacs	$I_{T(RMS)}: 8A$	E: TO-263	800: $V_{DRM} / V_{RRM} \geq 800V$	TW: $I_{GT1-3} \leq 5mA$	Blank: Tube -TR: Tape & Reel

MARKING

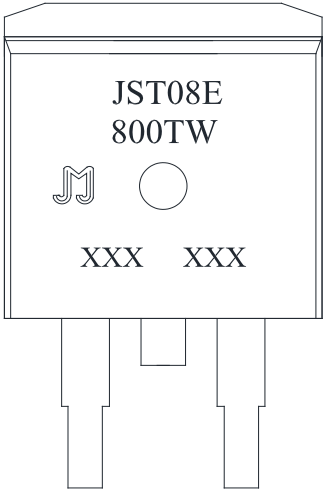
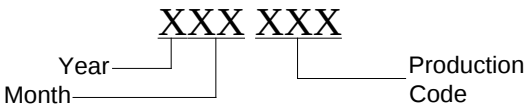
	
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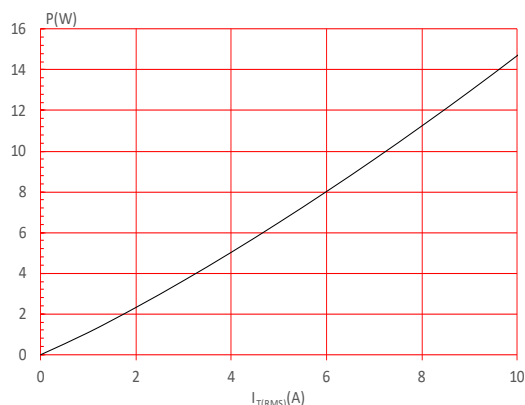
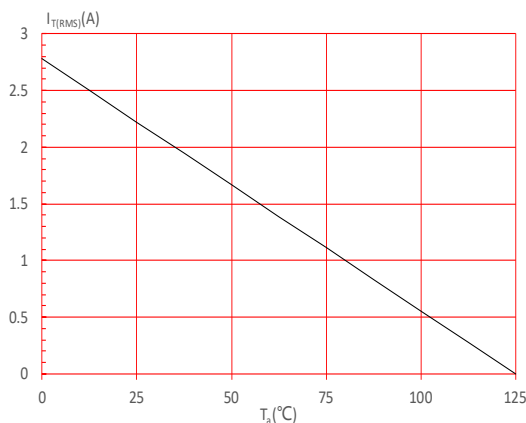
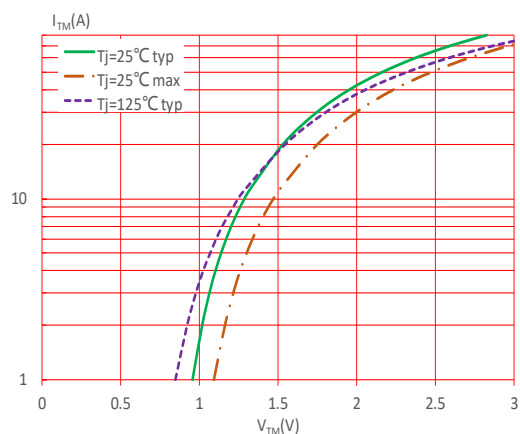
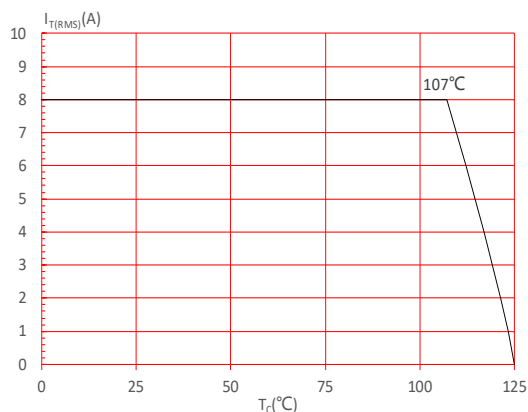
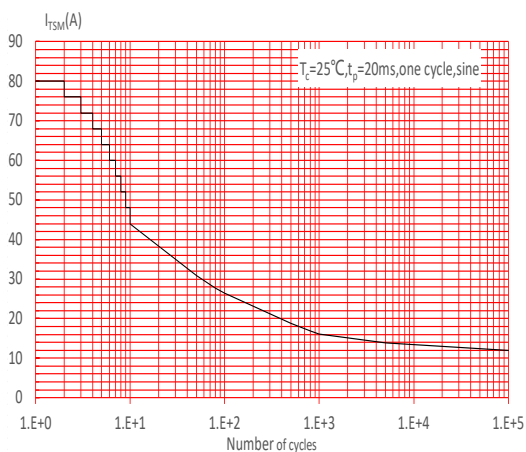
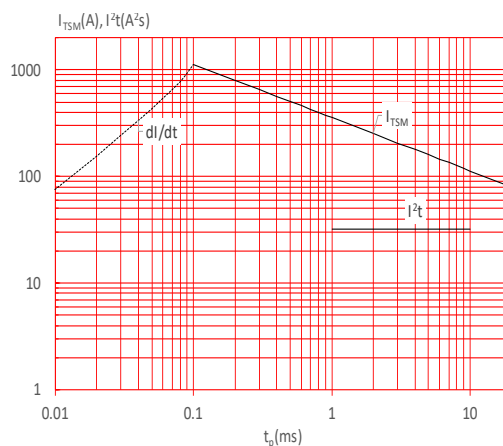
FIG.1: Maximum power dissipation versus RMS on-state current

FIG.3: RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35 μ m)(full cycle)

FIG.5: On-state characteristics

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

FIG.4: Surge peak on-state current versus number of cycles

FIG.6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 50A/\mu s$)


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

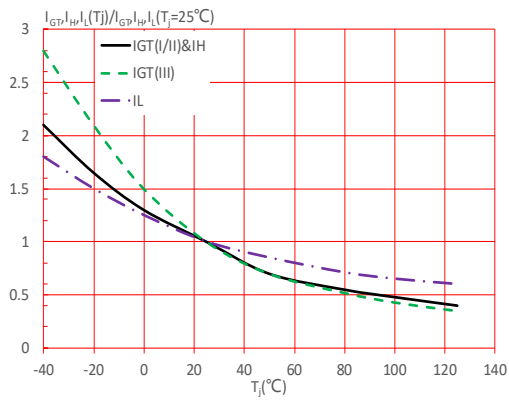
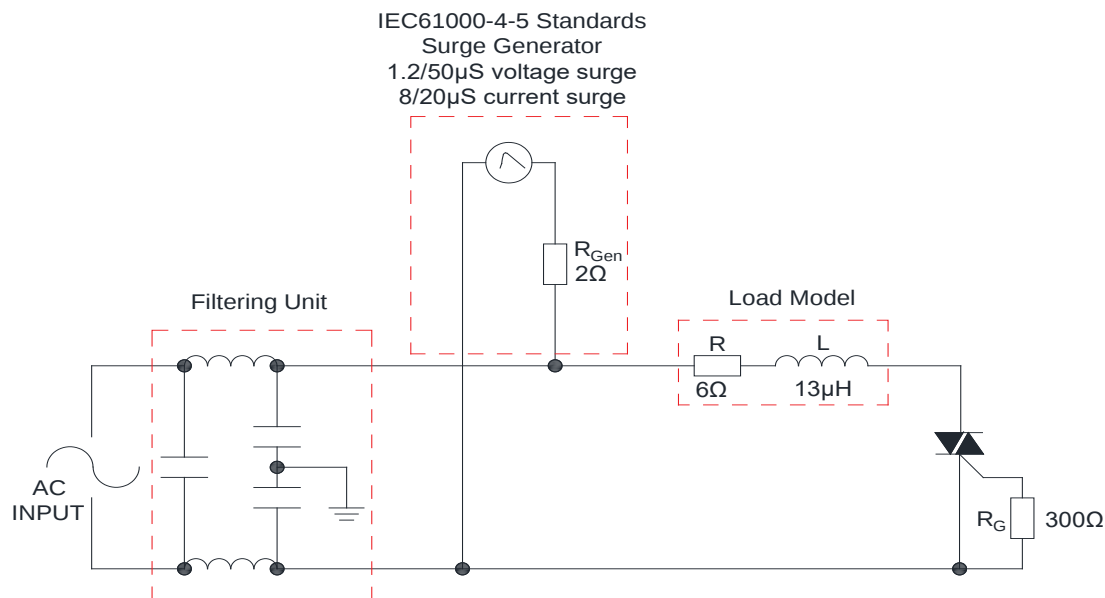
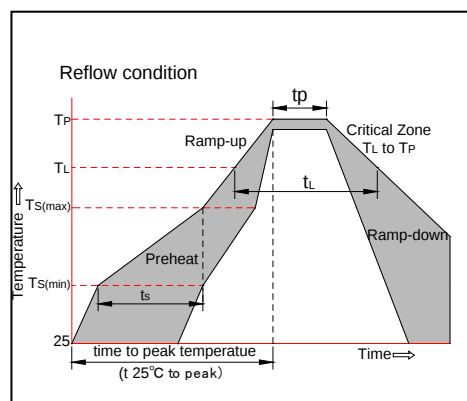


FIG.8: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SOLDERING PARAMETERS

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



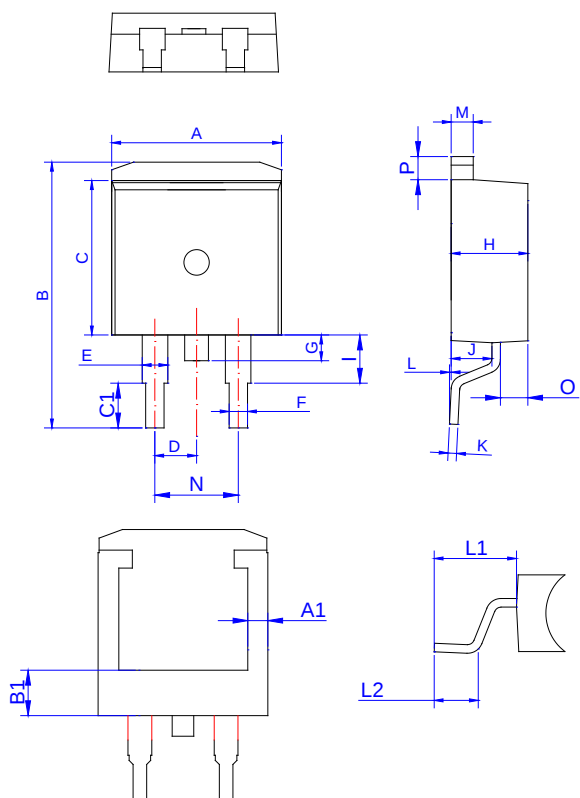
ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
JST08E-800TW	800	5	TO-263	50	Tube
JST08E-800TW-TR				800	Tape & Reel

Document Revision History

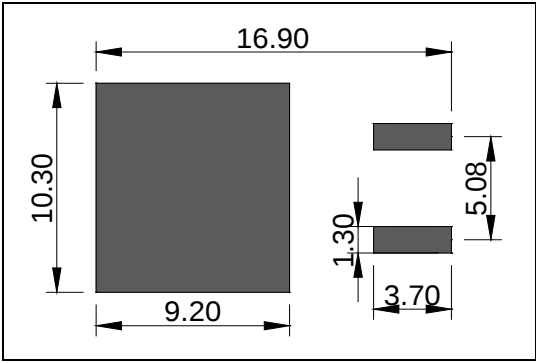
Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated
Oct.17, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.90		10.20	0.390		0.402
A1	0.80		1.20	0.031		0.047
B	14.70		15.80	0.579		0.622
B1	2.15		2.55	0.085		0.100
C	9.40		9.60	0.370		0.378
C1	2.40		2.80	0.094		0.110
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
I	1.80		2.20			
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
L1	4.65		5.05	0.183		0.199
L2	1.90			0.075		
M	1.25		1.35	0.049		0.053
N	4.80		5.20			
O	1.30		1.50			
P	1.20		1.50	0.047		0.059

FOOTPRINT-TO-263 (dimensions in mm)



Technical drawing of a mechanical part, showing three views: front view, side view, and cross-sectional view.

Front View Dimensions:

- Overall width: 530 ± 0.5
- Distance from left edge to center of hole: 518
- Distance from center of hole to right edge: 12.9
- Hole diameter: $\varnothing 3.0$
- Surface finish: ± 0.05

Side View Dimensions:

- Overall height: 33
- Distance from top edge to center of hole: 17.5
- Distance from center of hole to bottom edge: 10.5
- Distance from left edge to center of hole: 1.5
- Distance from center of hole to right edge: 1.5
- Distance from left edge to center of hole: 0.6
- Distance from center of hole to right edge: 2.6

Cross-sectional View Dimensions:

- Overall width: $7_{-0.2}^0$
- Distance from left edge to center of hole: 1.5
- Distance from center of hole to right edge: 1.5
- Distance from left edge to center of hole: 0.6
- Distance from center of hole to right edge: 2.6

Technical drawing of a wheel assembly, showing front, side, and detail views with dimensions.

Front View (Top): Shows four wheel units. Dimensions include:

- Overall width: W
- Unit width: $B0$
- Unit spacing: $A0$
- Unit pitch: $P1$
- Unit pitch: $P0$
- Unit pitch: $P2$
- Unit pitch: $D0$
- Unit pitch: B
- Unit pitch: 3.6
- Unit pitch: E
- Unit pitch: F
- Unit pitch: 10.6
- Unit pitch: 4.20 ± 0.1
- Unit pitch: $K0$
- Unit pitch: $B-B$

Side View (Bottom): Shows the profile of the wheel. Dimensions include:

- Overall height: t
- Unit height: 10.6
- Unit height: 4.20 ± 0.1
- Unit height: $K0$
- Unit height: $B-B$

Detail View (Left): Shows a cross-section of the wheel. Dimensions include:

- Angle: 10°
- Unit width: $A-A$

Top View (Right): Shows the wheel from above. Dimensions include:

- Overall diameter: $\phi 330$
- Inner diameter: $\phi 276$
- Inner diameter: $\phi 100$
- Inner diameter: $\phi 13$
- Unit width: 28

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

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch

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