

JST16C-800TW 16A TRIAC

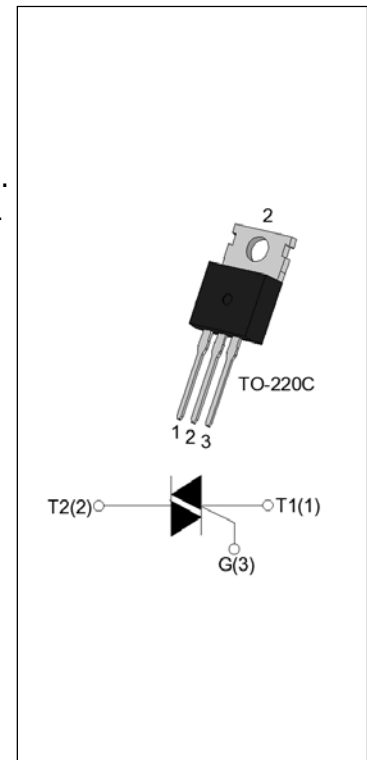
Rev.A.1.1

DESCRIPTION:

The JST16C-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. JST16C-800TW snubberless triac is especially recommended for use on inductive loads. It can be driven directly through the MCU I/O port. From T2 terminals to external heatsink. Package TO-220C is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	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	°C
Operating junction temperature range	T_j	-40-125	°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 ($T_c \leq 100^{\circ}C$)	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle , $t_p=20ms$, $T_j=25^{\circ}C$)	I_{TSM}	160	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$, $T_j=25^{\circ}C$)		176	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	128	A ² s
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/ μs
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.7)	V_{pp}	3	kV
--	----------	---	----

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.	15	mA
		II		20	
I_H	$I_T=500\text{mA}$		MAX.	15	mA
dV/dt	$V_D=540\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	80	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=10\text{V}/\mu\text{s}$ $T_j=125^{\circ}\text{C}$		MIN.	1.5	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.	3	μs
t_{off}				25	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=22.5\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.77	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	30	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.1	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

J	ST	16	C	-800	TW
JieJie Microelectronics Co., Ltd.	Triacs	$I_T(RMS):16A$	C:TO-220C	800: $V_{DRM}/V_{RRM} \geq 800V$	TW: $I_{GT1-3} \leq 5mA$

MARKING

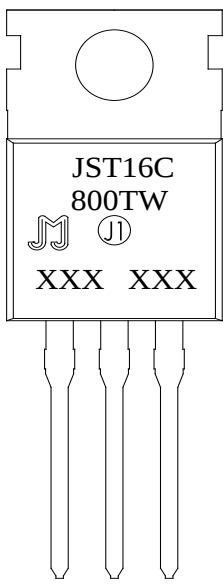
	XXX XXX Year Month Production Code
---	---

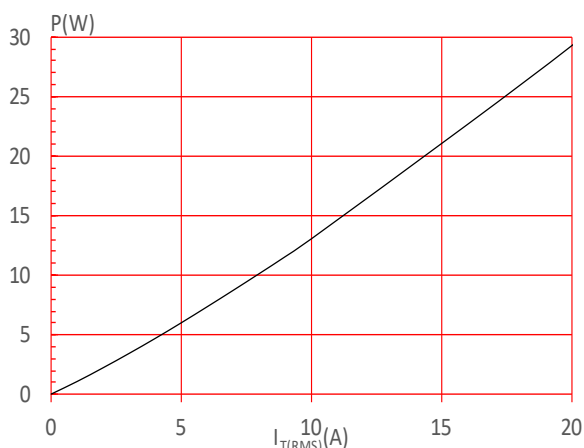
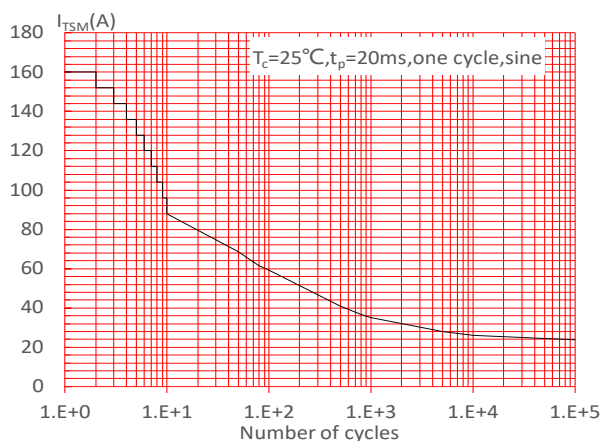
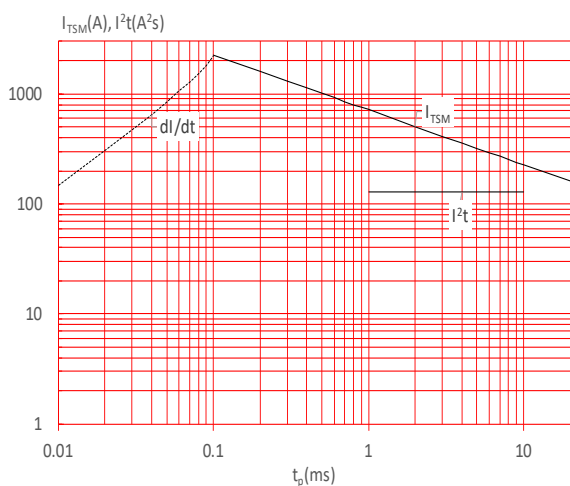
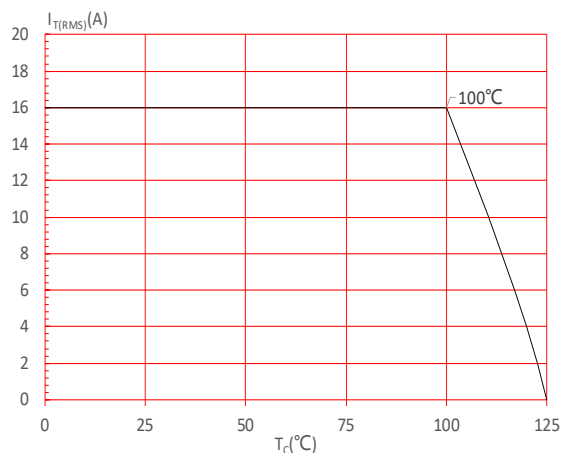
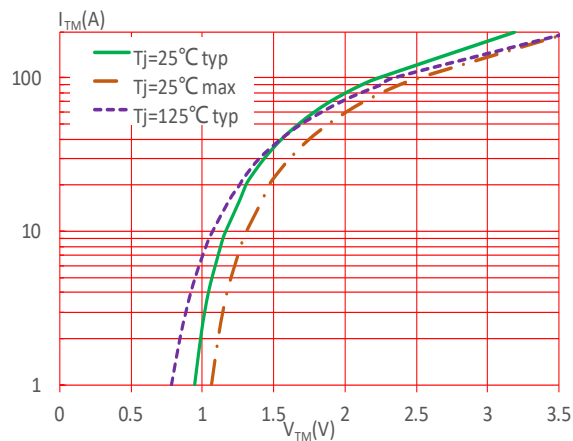
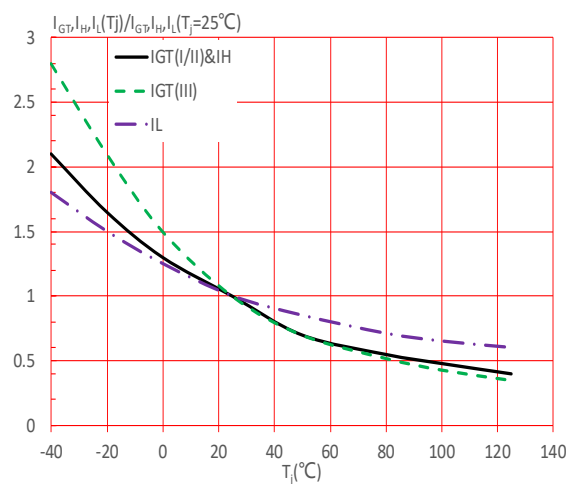
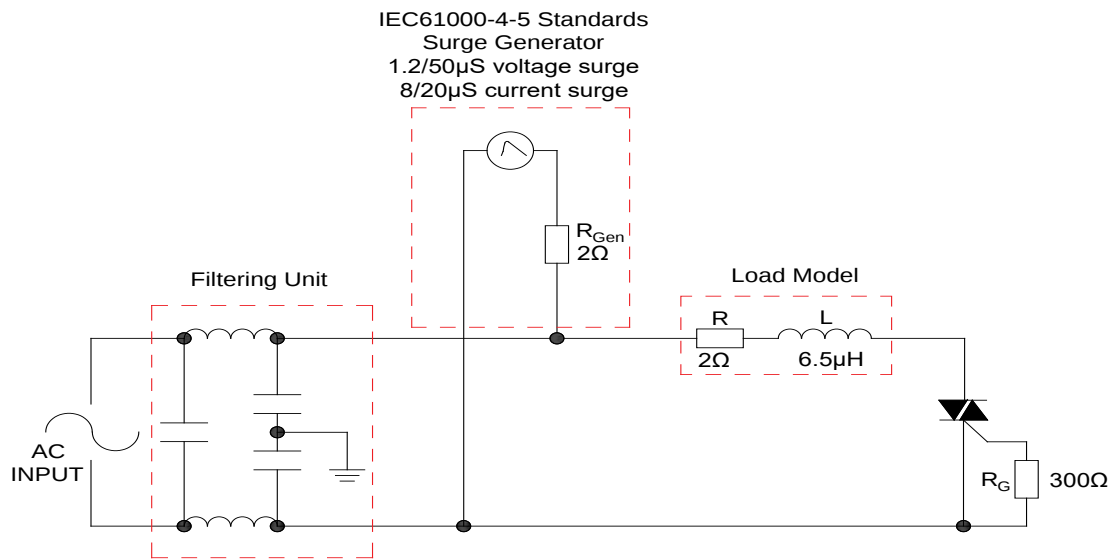
FIG.1: Maximum power dissipation versus RMS on-state current

FIG.3: Surge peak on-state current versus number of cycles

FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

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

FIG.4: On-state characteristics

FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics

ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
JST16C-800TW	800	5	TO-220C	50	Tube

Document Revision History

Date	Revision	Changes
Apr.12, 2023	A.1.0	Last updated
Oct.15, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin plug with dimensions and labels:

- Top View:** Shows the circular base with a central hole and a dashed line indicating the center.
- Front View:** Shows the plug body with dimensions:
 - E:** Total width of the plug body.
 - L:** Distance from the left edge to the center of the top hole.
 - L3:** Height of the top section.
 - H:** Total height of the plug body.
 - L1:** Height of the top section.
 - K:** Height of the middle section.
 - L2:** Height of the bottom section.
 - B:** Width of the bottom section.
 - G:** Distance from the left edge to the center of the bottom hole.
 - M:** Total width of the bottom section.
- Side View:** Shows the plug body with dimensions:
 - A:** Total width of the plug body.
 - C2:** Distance from the left edge to the center of the top hole.
 - E:** Total height of the plug body.
 - D:** Height of the middle section.
 - C3:** Height of the bottom section.
 - C:** Width of the bottom section.
- Bottom View:** Shows the plug body with dimensions:
 - E1:** Distance from the left edge to the center of the bottom hole.
 - H1:** Height of the bottom section.
- Notes:**
 - $\varnothing 3.45-3.65\text{mm}$ (indicated by a blue arrow pointing to the top hole).

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.25		1.35	0.049		0.053
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.30	0.390		0.406
E1	0.80		1.20	0.031		0.047
F	6.30		6.90	0.248		0.272
G	2.40		2.70	0.094		0.106
H	28.00		29.80	1.102		1.173
H1	2.15		2.55	0.085		0.100
I	4.70		5.10	0.185		0.201
K	9.90		10.30	0.390		0.406
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
M	4.80		5.20	0.189		0.205

Technical drawing of a 3D printed part, showing three views: top, front, and side views. The drawing includes dimensions and a label for the 'printing area'.

Top View Dimensions:

- Overall width: 520 ± 0.5
- Overall height: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5

Front View Dimensions:

- Overall width: 520 ± 0.5
- Overall height: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5

Side View Dimensions:

- Overall width: 7 ± 0.2
- Overall height: 33
- Distance from left edge to center of top hole: 7 ± 0.2
- Distance from left edge to center of bottom hole: 33
- Distance from left edge to center of top hole: 7 ± 0.2
- Distance from left edge to center of bottom hole: 33
- Distance from left edge to center of top hole: 7 ± 0.2
- Distance from left edge to center of bottom hole: 33
- Distance from left edge to center of top hole: 7 ± 0.2
- Distance from left edge to center of bottom hole: 33

Other Dimensions and Features:

- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5
- Distance from left edge to center of top hole: 520 ± 0.5
- Distance from left edge to center of bottom hole: 530 ± 0.5

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied.



is a registered trademark of Jiangsu JieJie Microelectronics Co., Ltd.

Copyright © 2025 Jiangsu JieJie Microelectronics Co., Ltd. All rights reserved.