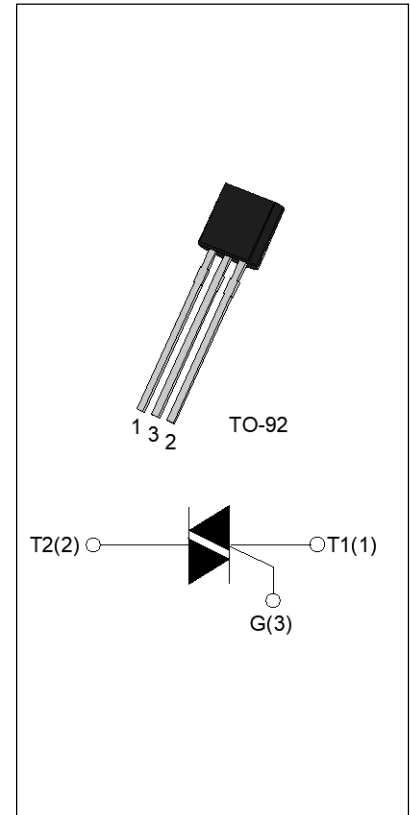


**JST01U-800SW 1A TRIAC**

Rev.A.2.0

**DESCRIPTION:**

The JST01U-800SW 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. JST01U-800SW snubberless triac is especially recommended for use on inductive loads. It can be driven directly through the MCU I/O port. Complying with UL standards (File ref: E252906). Package TO-92 is RoHS compliant.


**MAIN FEATURES**

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
$V_{DRM}/V_{RRM}$	800	V
$I_{GT\ I/II/III}$	10/10/10	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 ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	800	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	800	V
RMS on-state current ( $T_c \leq 45^\circ\text{C}$ )	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	15	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		16.5	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	1.25	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100\text{Hz}$ , $T_j=125^\circ\text{C}$ )	$di/dt$	100	$\text{A}/\mu\text{s}$
Peak gate current ( $t_p=10\mu\text{s}$ , $T_j=125^\circ\text{C}$ )	$I_{GM}$	1	A
Average gate power dissipation ( $T_j=125^\circ\text{C}$ )	$P_{G(AV)}$	0.1	W

Peak gate power	$P_{GM}$	2	W
Peak pulse voltage ( $T_j=25^{\circ}C$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	4	kV

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}C$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V R_L=33\Omega$	I - II -III	MAX.	10	mA
$V_{GT}$		I - II -III	MAX.	1	V
$V_{GD}$	$V_D=V_{DRM} T_j=125^{\circ}C$ $R_L=3.3K\Omega$	I - II -III	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	I -III	MAX.	20	mA
		II		40	
$I_H$	$I_T=100mA$		MAX.	15	mA
dV/dt	$V_D=540V$ Gate Open $T_j=125^{\circ}C$		MIN.	300	V/ $\mu s$
(dI/dt) <sub>c</sub>	(dV/dt) <sub>c</sub> =10V/ $\mu s$ $T_j=125^{\circ}C$		MIN.	1	A/ms
$t_{on}$	$I_G=20mA I_A=200mA I_R=20mA$ $T_j=25^{\circ}C$		TYP.	2.5	$\mu s$
$t_{off}$				25	

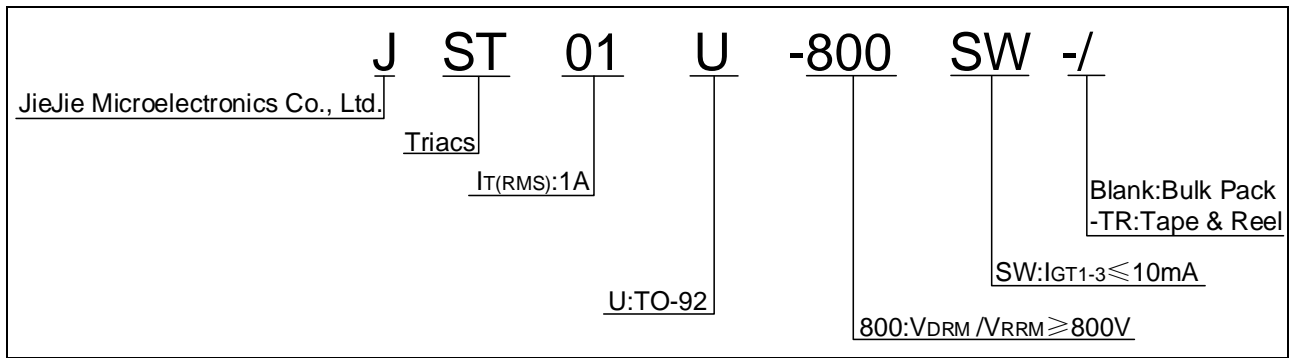
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=1.4A t_p=380\mu s$	$T_j=25^{\circ}C$	1.3	V
$V_{TO}$	Threshold voltage	$T_j=125^{\circ}C$	0.93	V
$R_D$	Dynamic resistance	$T_j=125^{\circ}C$	146	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}C$	5	$\mu A$
$I_{RRM}$		$T_j=125^{\circ}C$	0.15	mA

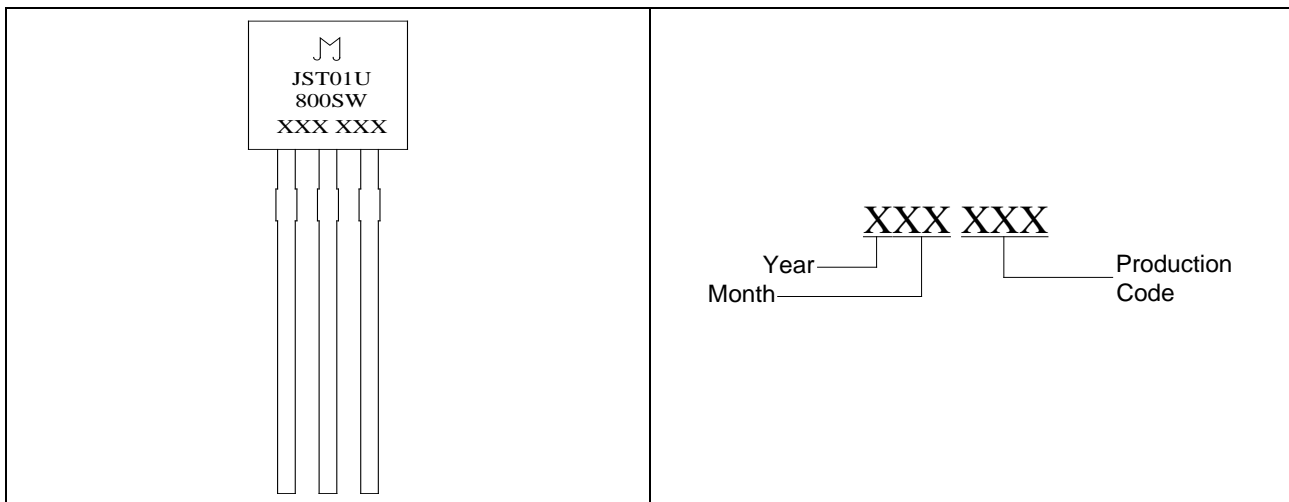
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	65	$^{\circ}C/W$
$R_{th(j-a)}$	junction to ambient (AC)	150	$^{\circ}C/W$

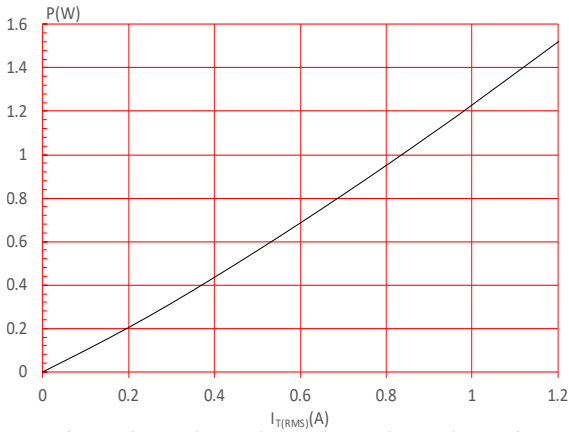
ORDERING INFORMATION



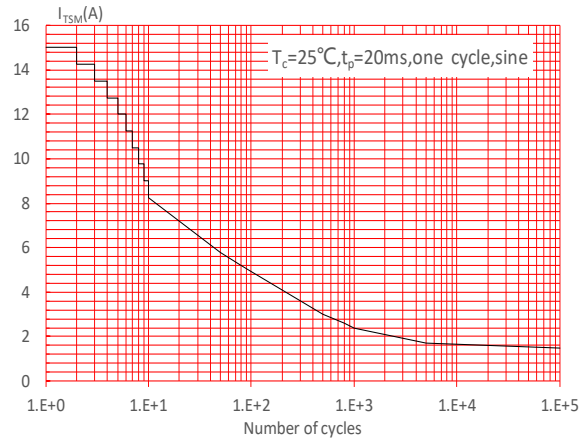
MARKING



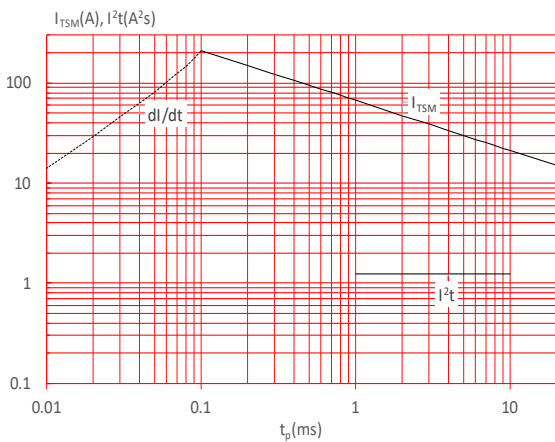
**FIG.1:** Maximum power dissipation versus RMS on-state current



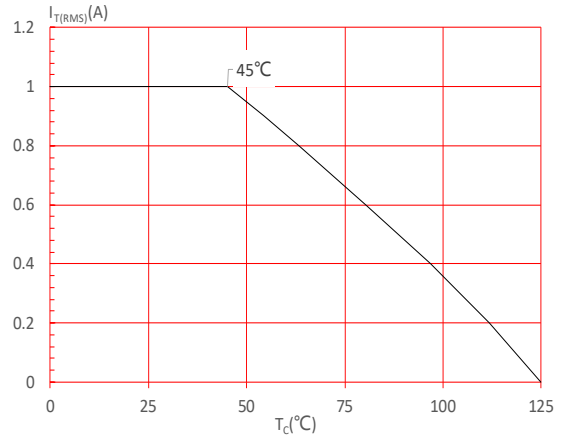
**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm)(full cycle)



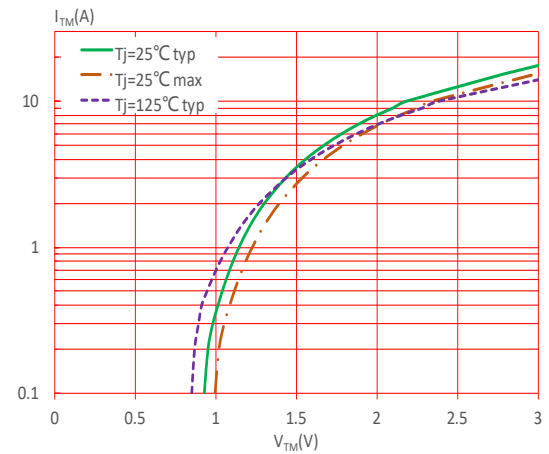
**FIG.5:** On-state characteristics



**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  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 100\text{A}/\mu\text{s}$ )

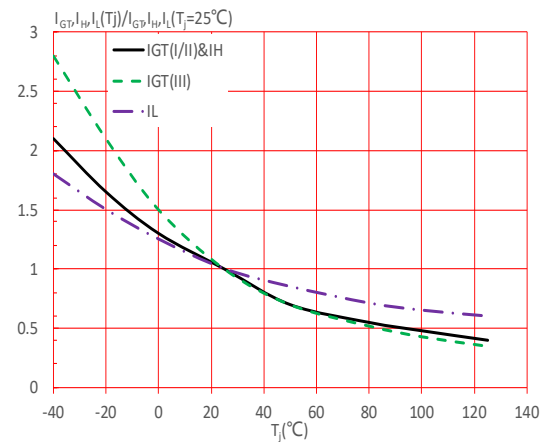
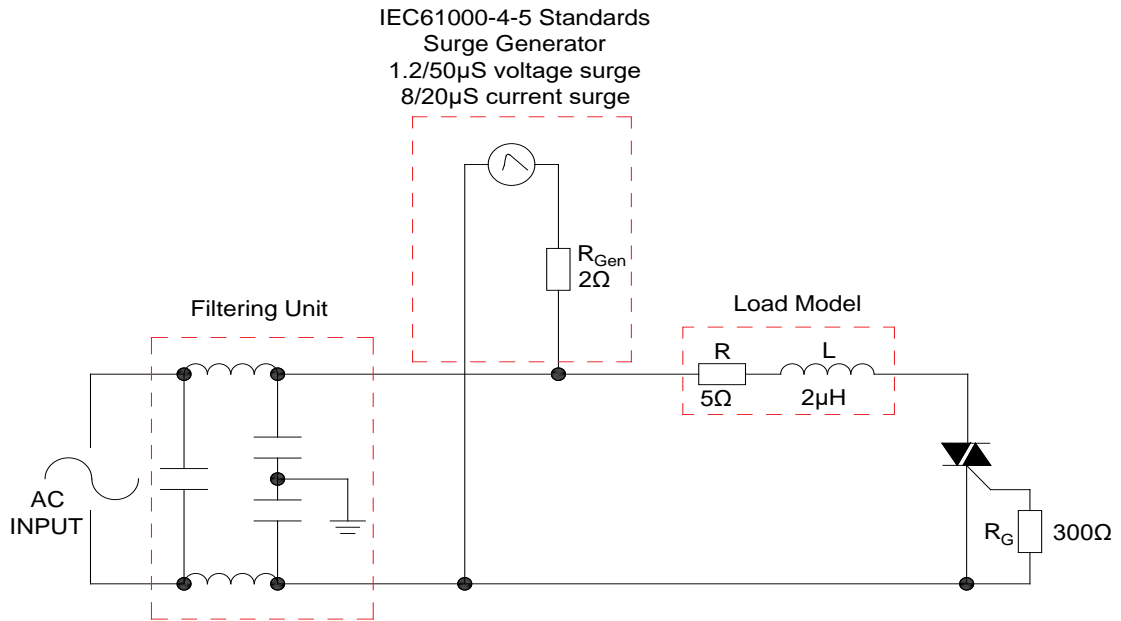


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



### LEAD FORMING AND SOLDERING

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

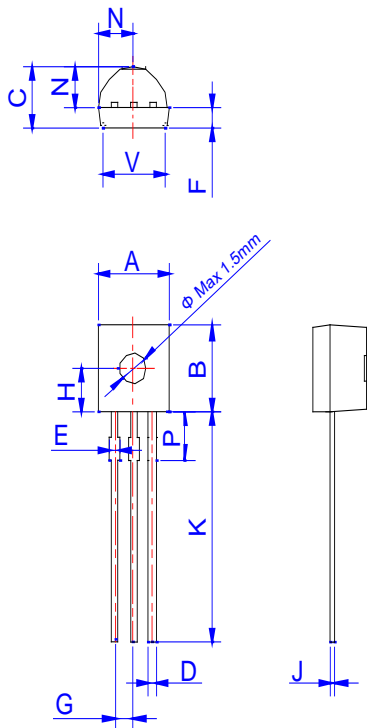
## ORDERING INFORMATION

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I -II-III			
JST01U-800SW	800	10	TO-92	1,000	Bulk Pack
JST01U-800SW-TR				2,000	Tape & Reel

## Document Revision History

Date	Revision	Changes
Apr.10, 2023	A.1.0	Last updated
Mar.31, 2025	A.2.0	Renew PACKAGE MECHANICAL DATA

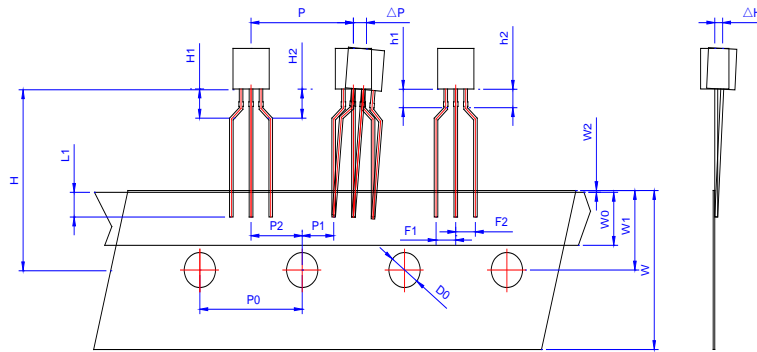
PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.50		0.70	0.020		0.028
F	1.10		1.30			0.051
G	1.10		1.40	0.043		0.055
H	2.20		2.40	0.087		0.094
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.80		2.30	0.071		0.091
V	4.10		4.50	0.161		0.177

DELIVERY MODE

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92	Bulk Pack	1,000	10,000	50,000



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
P	12.40	12.70	13.00	0.488	0.500	0.512
P0	12.40	12.70	13.00	0.488	0.500	0.512
P1	3.55	3.85	4.15	0.140	0.152	0.163
P2	5.95	6.35	6.75	0.233	0.250	0.265
ΔP	-1.00	0	1.00	-0.039	0	0.039
F1, F2	2.30	2.50	2.70	0.090	0.098	0.106
F1-F2	-0.10	0	0.10	-0.004	0	0.004
W	17.50	18.00	19.00	0.689	0.709	0.748
W0	5.50	6.00	6.50	0.217	0.236	0.256
W1	8.50	9.00	9.50	0.335	0.354	0.374
W2			1.00			0.039
D0	3.80	4.00	4.20	0.150	0.157	0.165
ΔH	-1.00	0	1.00	-0.039	0	0.039
L1	2.50			0.098		
H	18.00	19.00	20.00	0.709	0.748	0.787
H1, H2			3.00			0.119
H1-H2	-0.50		0.50	-0.020		0.020
h1, h2			1.00			0.040
h1-h2	-0.20		0.20	-0.008		0.008

PACKAGE	OUTLINE	REEL (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92	Tape & Reel	/	2,000	20,000



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