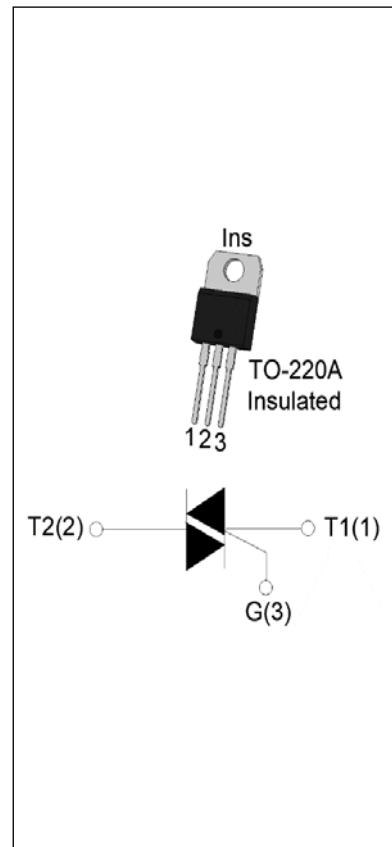


JST24A-800BW 25A TRIAC

Rev.A.1.1

DESCRIPTION:

The JST24A-800BW 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. JST24A-800BW snubberless triac is especially recommended for use on inductive loads. By using an internal ceramic pad, JST24A-800BW provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
V_{DRM}/V_{RRM}	800	V
$I_{GT\ I/II/III}$	50/50/50	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 ($T_c \leq 79^\circ\text{C}$)	$I_{T(RMS)}$	25	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	250	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		275	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	340	A^2s
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 ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)	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. 7)	V_{pp}	2.5	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.	50	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.	80	mA
		II		100	
I_H	$I_T=500\text{mA}$		MAX.	75	mA
dV/dt	$V_D=540\text{V}$ Gate Open $T_J=125^{\circ}\text{C}$		MIN.	2000	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}$ $T_J=125^{\circ}\text{C}$		MIN.	25	A/ms
t_{on}	$I_G=80\text{mA}$ $I_A=400\text{mA}$ $I_R=40\text{mA}$ $T_J=25^{\circ}\text{C}$		TYP.	10	μs
t_{off}				70	

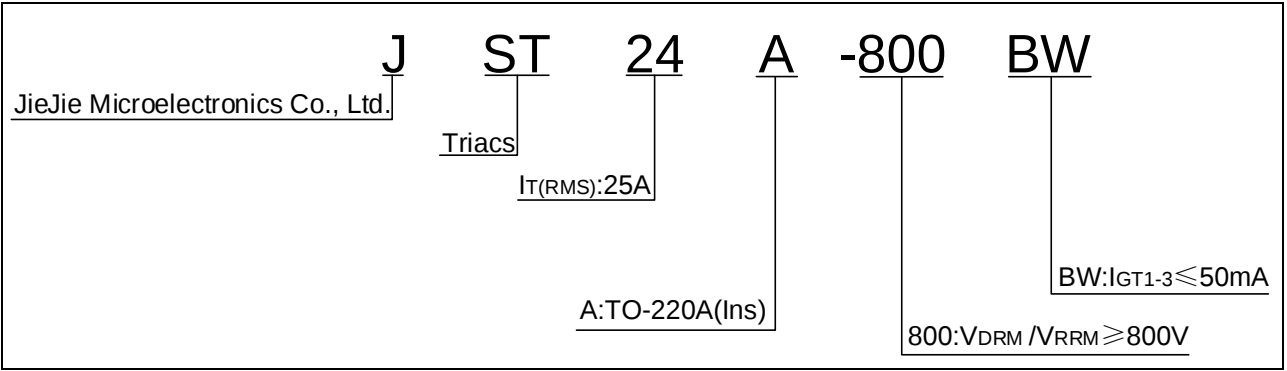
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=35\text{A}$ $t_p=380\mu\text{s}$	$T_J=25^{\circ}\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_J=125^{\circ}\text{C}$	0.75	V
R_D	Dynamic resistance	$T_J=125^{\circ}\text{C}$	18	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_J=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_J=125^{\circ}\text{C}$	2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.3	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

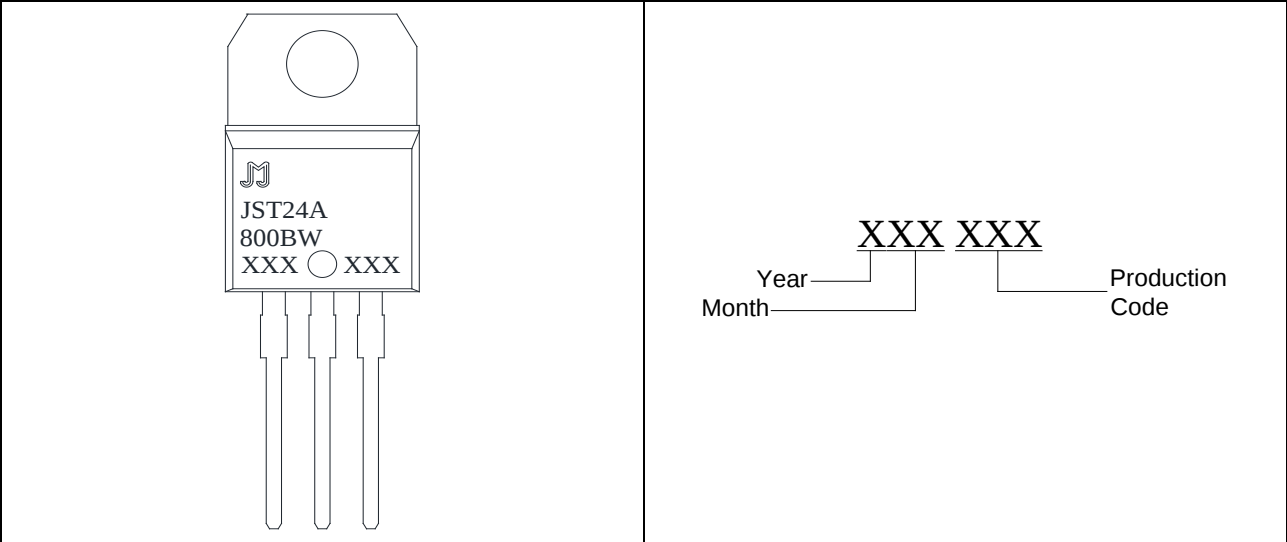


FIG.1: Maximum power dissipation versus RMS on-state current

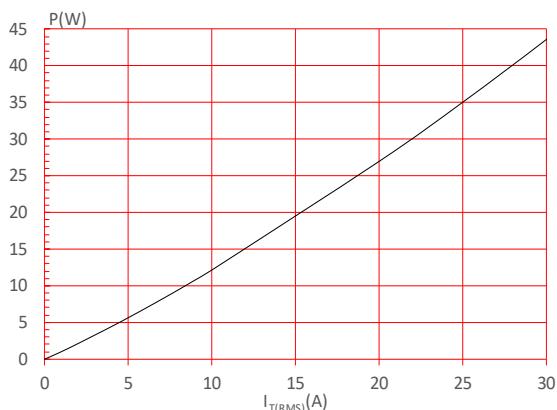


FIG.2: RMS on-state current versus case temperature

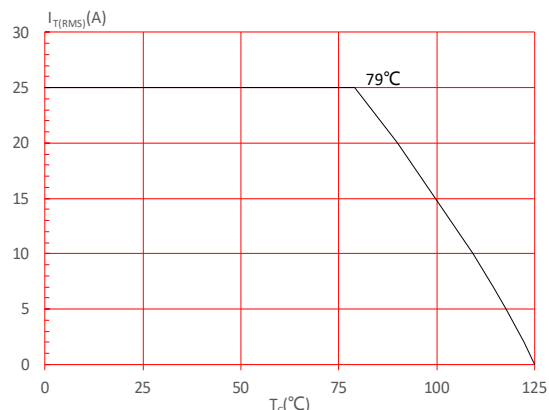


FIG.3: Surge peak on-state current versus number of cycles

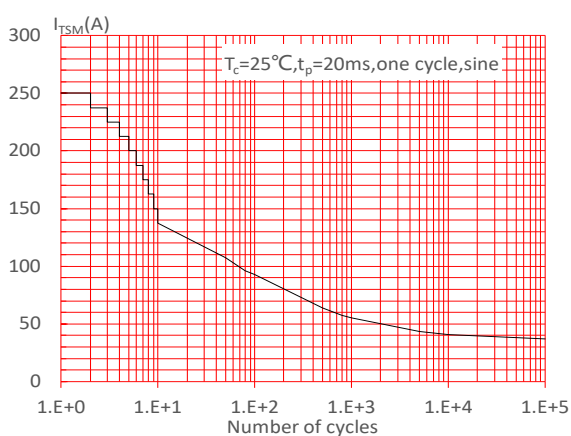


FIG.4: On-state characteristics

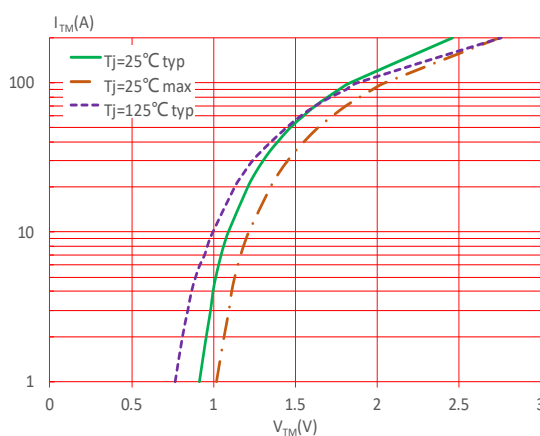


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 100A/\mu s$)

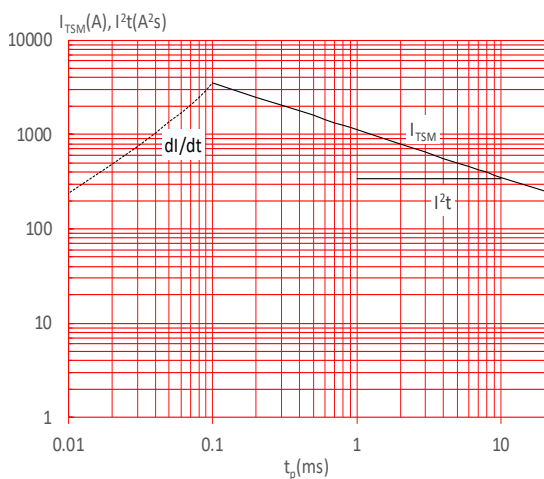


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

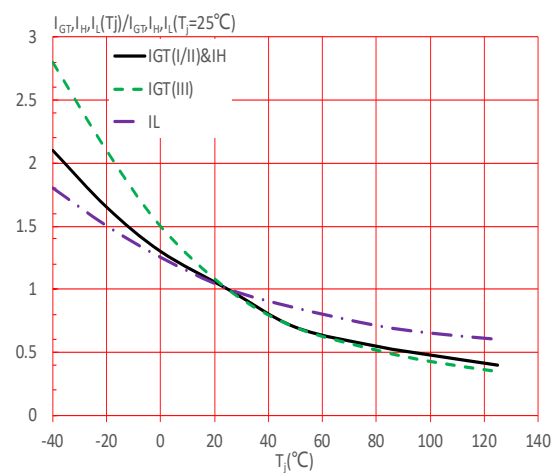
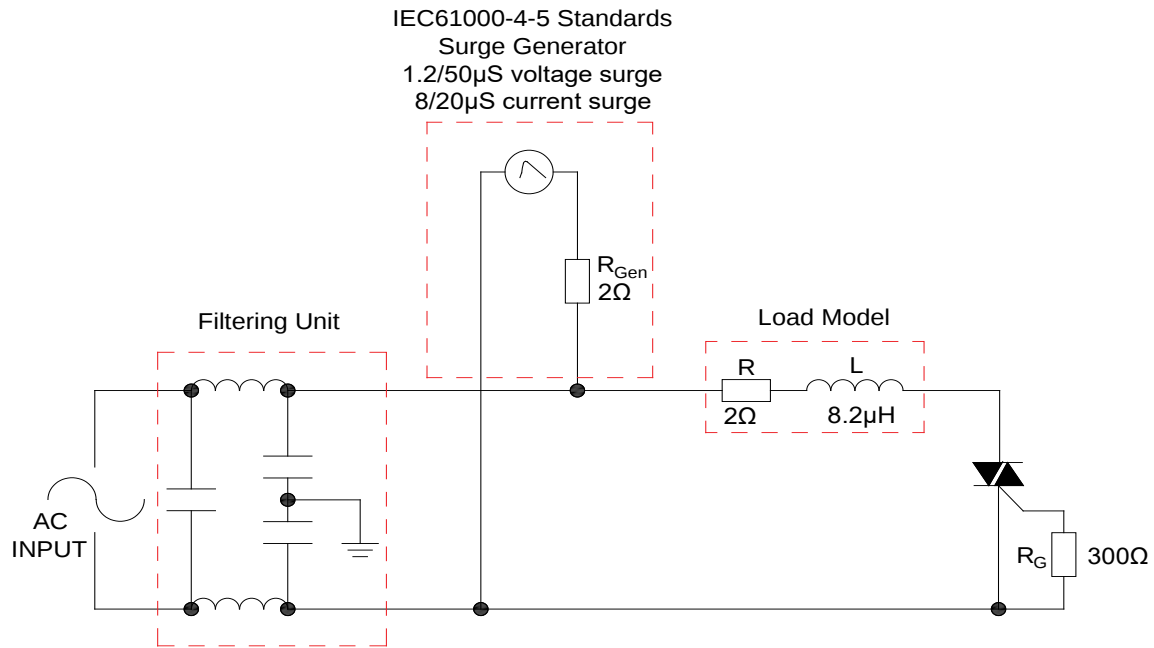


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



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 $V_{\text{DRM}}/V_{\text{RRM}}(\text{V})$	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
JST24A-800BW	800	50	TO-220A(Ins)	50	Tube

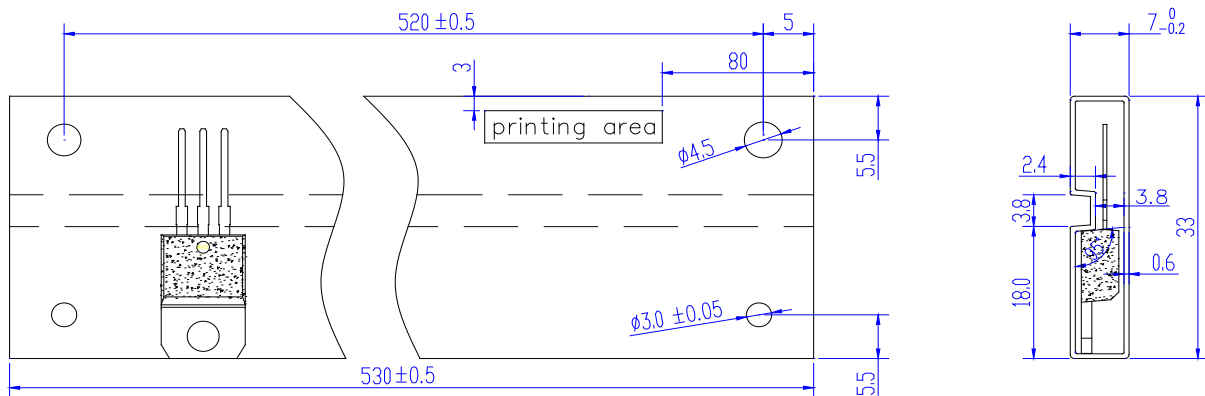
Document Revision History

Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update
Oct.13, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin plug, showing three views: front, side, and top. The drawing includes the following dimensions and labels:

- Front View (Left):** Shows the plug's profile with dimensions H (total height), J (height to the top of the pins), $L1$ (height of the top section), $L2$ (height of the middle section), $L3$ (height of the bottom section), E (width of the top section), I (width of the top section), B (width of the middle section), G (width of the bottom section), K (width of the bottom section), and $H1$ (height of the bottom section).
- Side View (Right):** Shows the plug's profile with dimensions A (width of the top section), $C2$ (width of the middle section), D (width of the bottom section), $C3$ (width of the bottom section), C (width of the bottom section), and F (width of the bottom section).
- Top View (Bottom):** Shows the plug's top with dimensions $E1$ (width of the top section) and $H1$ (height of the bottom section).
- Other Labels:** $\Phi 3.7-3.9mm$ (diameter of the top section), $\sqrt{17}$ (angle of the top section), and $\sqrt{17}$ (angle of the bottom section).

DELIVERY MODE



<http://www.jjwdz.com>

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