

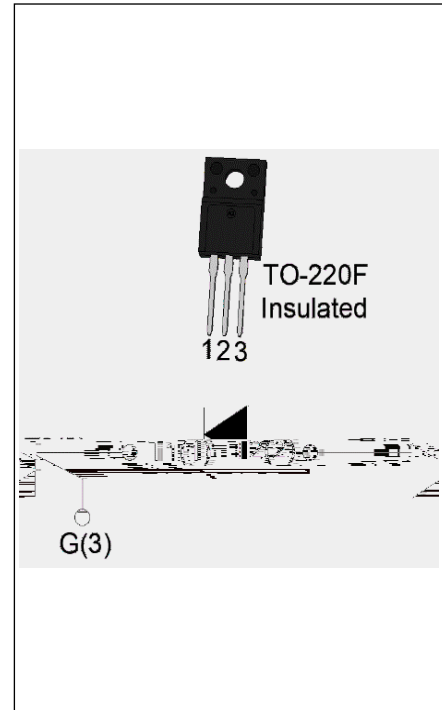


## JST24F-800B 25A TRIAC

Rev.A.1.0

### DESCRIPTION:

The JST24F-800B 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. By using an external plastic package, JST24F-800B provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
$V_{DRM}/V_{RRM}$	800	V
$I_{GT\ I/II/III/IV}$	50/50/50/70	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 ( $T_c \leq 72^\circ\text{C}$ )	$I_{T(RMS)}$	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	$\text{A}^2\text{s}$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100\text{Hz}$ , $T_j=125^\circ\text{C}$ )	I - II	100	$\text{A}/\mu\text{s}$
	III-IV	50	
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	kV
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**ELECTRICAL CHARACTERISTICS** ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12\text{V } R_L=33$	I - II - III	MAX.	50	mA
		IV		70	
$V_{GT}$		ALL	MAX.	1	V
$V_{GD}$	$V_D=V_{DRM} T_j=125^\circ\text{C}$ $R_L=3.3\text{K}$	ALL	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	I - III - IV	MAX.	80	mA
		II		120	
$I_H$	$I_T=500\text{mA}$		MAX.	80	mA
$dV/dt$	$V_D=540\text{V}$ Gate Open $T_j=125^\circ\text{C}$		MIN.	1000	$\text{V}/\mu\text{s}$
$(dV/dt)_c$	$(dI/dt)_c=13.3\text{A/ms}$ , $T_j=125^\circ\text{C}$		MIN.	12	$\text{V}/\mu\text{s}$
$t_{on}$	$I_G=80\text{mA } I_A=400\text{mA } I_R=40\text{mA}$ $T_j=25^\circ\text{C}$		TYP.	3	$\mu\text{s}$
$t_{off}$				50	

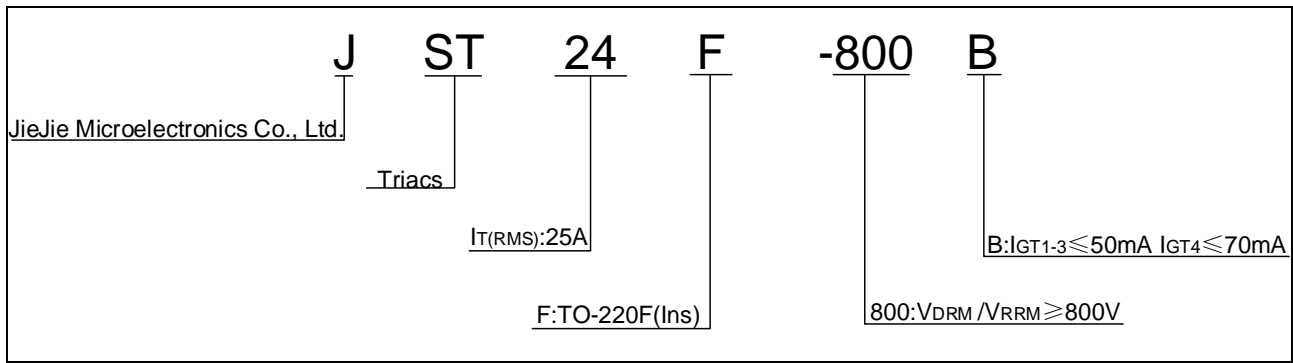
**STATIC CHARACTERISTICS**

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	m
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^\circ\text{C}$	2	mA

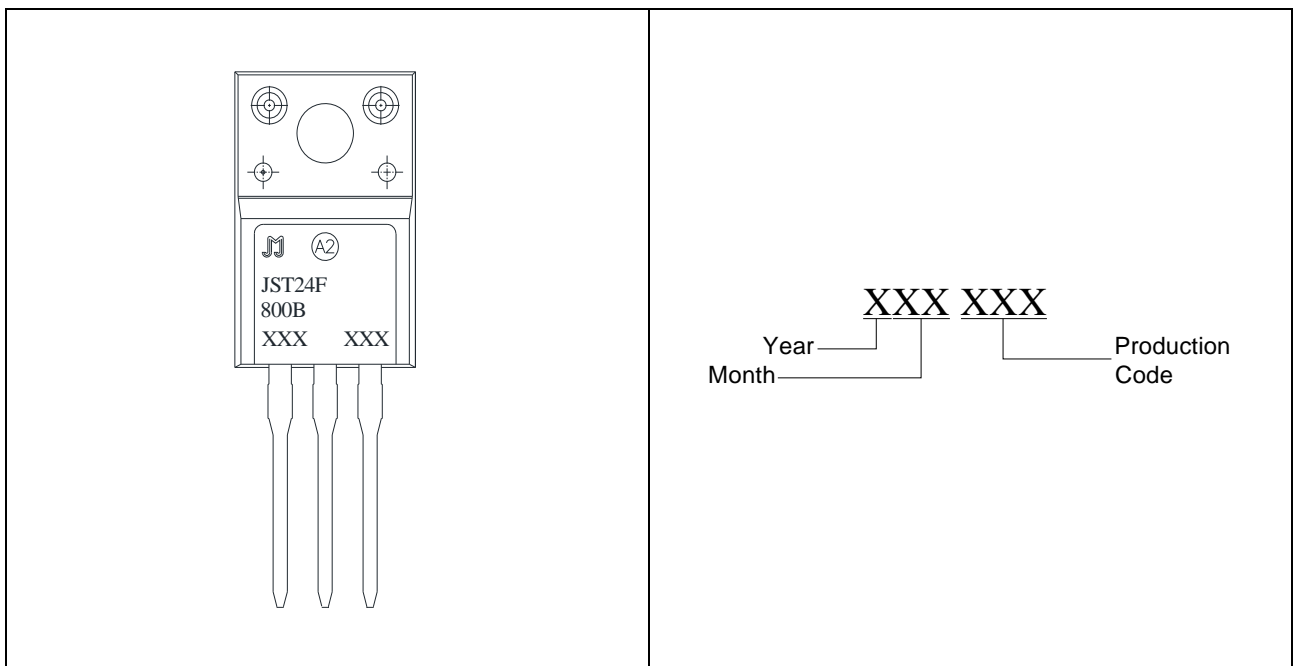
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.5	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^\circ\text{C}/\text{W}$

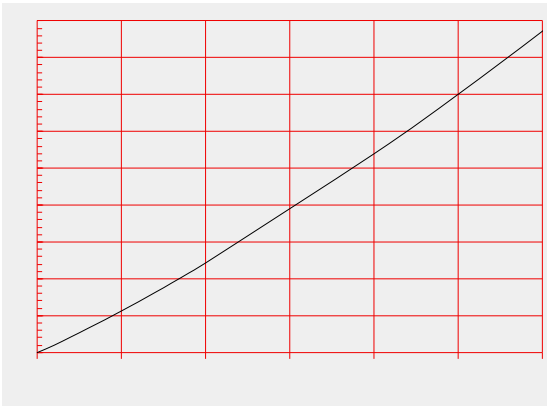
ORDERING INFORMATION



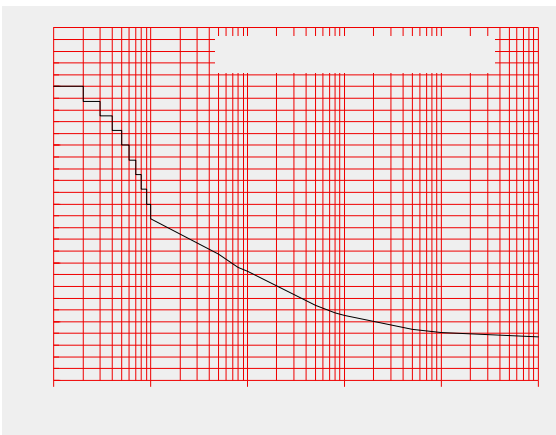
MARKING



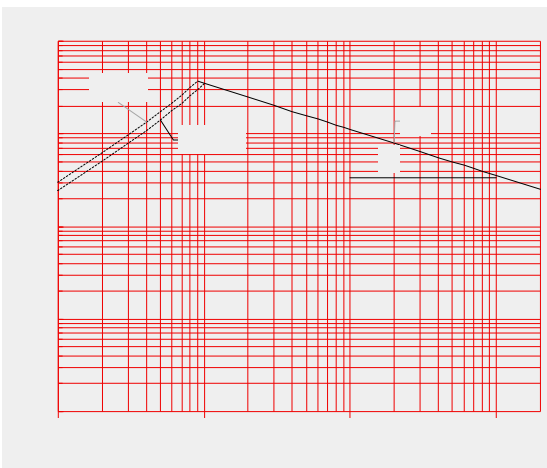
**FIG.1** Maximum power dissipation versus RMS on-state current



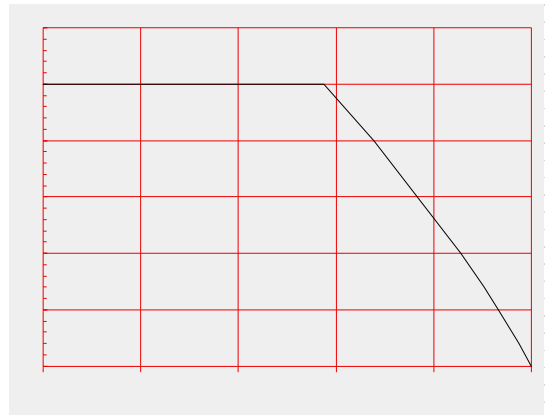
**FIG.3:** Surge peak on-state current versus number of cycles



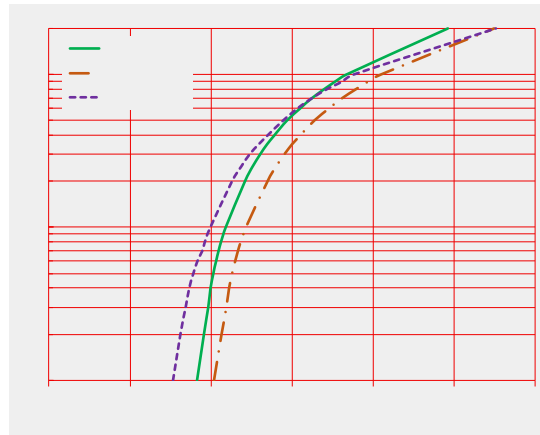
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( I - II:  $di/dt < 100\text{A}/\mu\text{s}$ ; III-IV:  $di/dt < 50\text{A}/\mu\text{s}$ )



**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

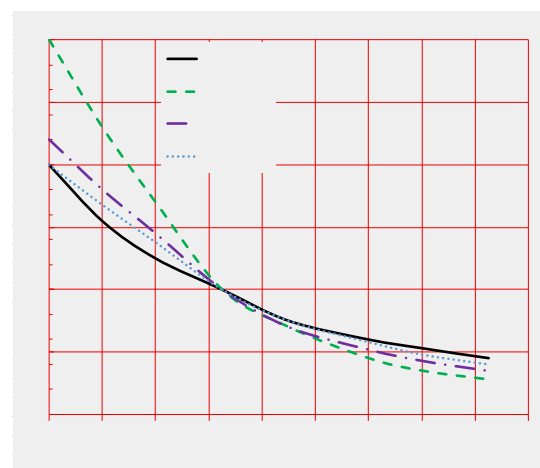
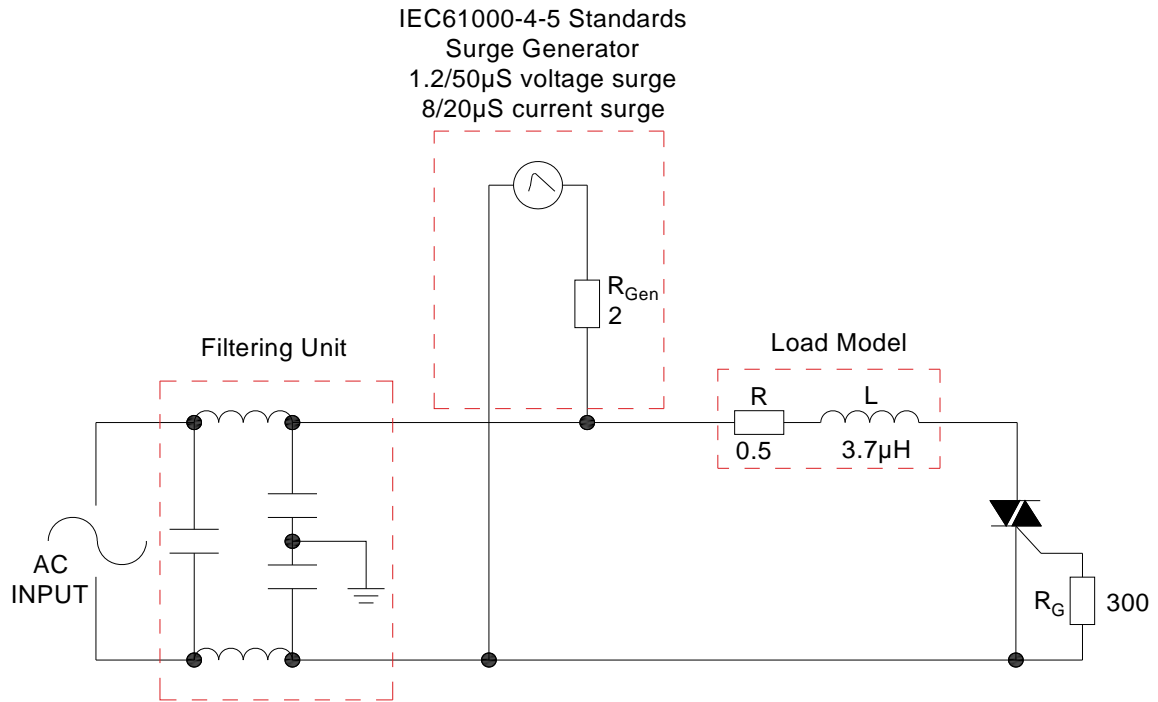


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



## SHAPING AND SOLDERING PARAMETERS

Refer to 《Instructions for installation of plastic-sealed in-line power devices》 released by JieJie.

**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		-	-			
<b>JST24F-800B</b>	<b>800</b>	<b>50</b>	<b>70</b>	<b>TO-220F(Ins)</b>	<b>50</b>	<b>Tube</b>

**Document Revision History**

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated

PACKAGE MECHANICAL DATA



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