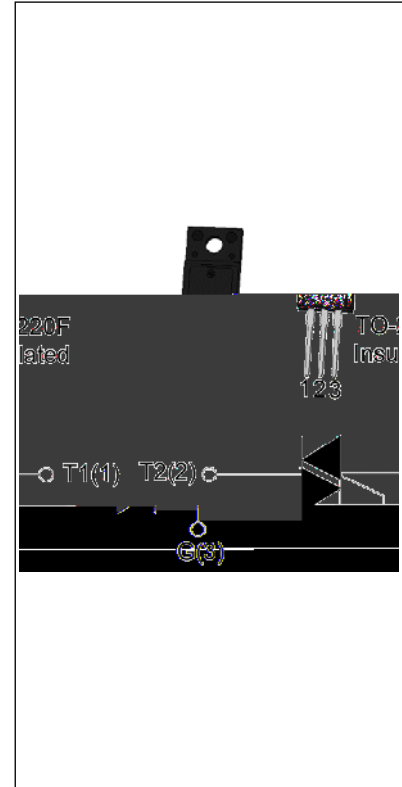




The JST04F-600BW triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. JST04F-600BW snubberless triac is especially recommended for use on inductive loads. By using an external plastic package, JST04F-600BW provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	4	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT} / /$	50/50/50	mA

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-125	
Repetitive peak off-state voltage ( $T_j=25^\circ C$ )	$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^\circ C$ )	$V_{RRM}$	600	V
RMS on-state current ( $T_c = 97^\circ C$ )	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, $t_p=20ms$ , $T_j=25^\circ C$ )	$I_{TSM}$	40	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6ms$ , $T_j=25^\circ C$ )		44	
$I^2t$ value for fusing ( $t_p=10ms$ , $T_j=25^\circ C$ )	$I^2t$	8	$A^2s$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ , $f=100Hz$ , $T_j=125^\circ C$ )	$di/dt$	100	$A/s$
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

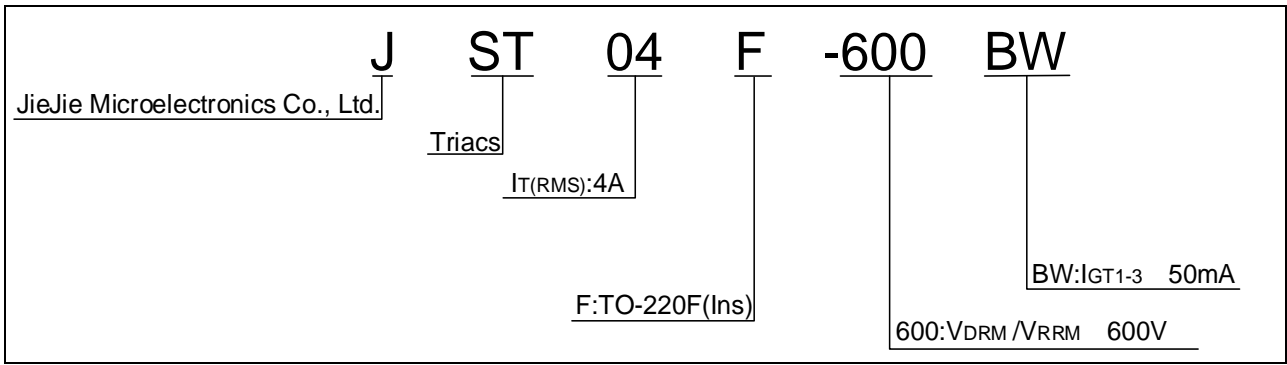
Peak gate power	$P_{GM}$	10	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive,off-state;FIG.7)	$V_{pp}$	4	kV

( $T_j=25$  unless otherwise specified)

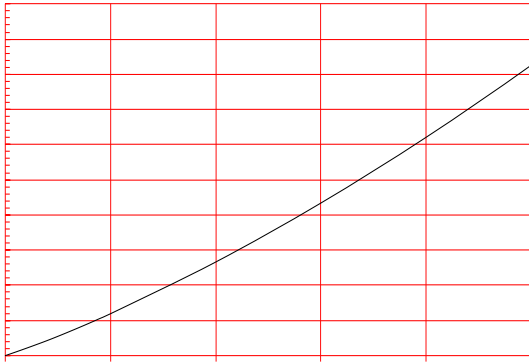
Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V R_L=33$	- -	MAX.	50	mA
$V_{GT}$		- -	MAX.	1	V
$V_{GD}$	$V_D=V_{DRM} T_j=125$ $R_L=3.3K$	- -	MIN.	0.2	V
$I_L$	$I_G=1.2I_{GT}$	-	MAX.	70	mA
				80	
$I_H$	$I_T=100mA$		MAX.	60	mA
dV/dt	$V_D=400V$ Gate Open $T_j=125$		MIN.	2000	V s
(dI/dt) <sub>c</sub>	(dV/dt) <sub>c</sub> =20V s, $T_j=125$		MIN.	10	A/ms
$t_{on}$	$I_G=80mA I_A=400mA I_R=40mA$ $T_j=25$		TYP.	5	s
$t_{off}$				50	

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=5A t_p=380$ s	$T_j=25$	1.65	V
$V_{TO}$	Threshold voltage	$T_j=125$	0.799	V
$R_D$	Dynamic resistance	$T_j=125$	151	m
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	5	A
$I_{RRM}$		$T_j=125$	0.2	mA

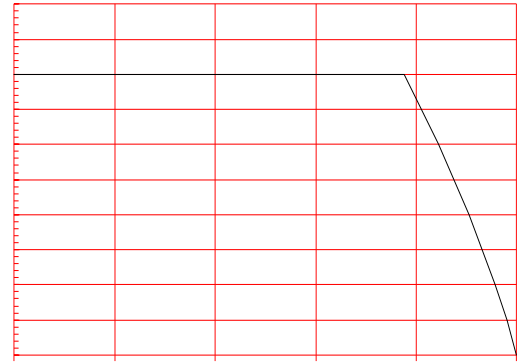
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	4.5	/W
$R_{th(j-a)}$	junction to ambient (AC)	60	/W



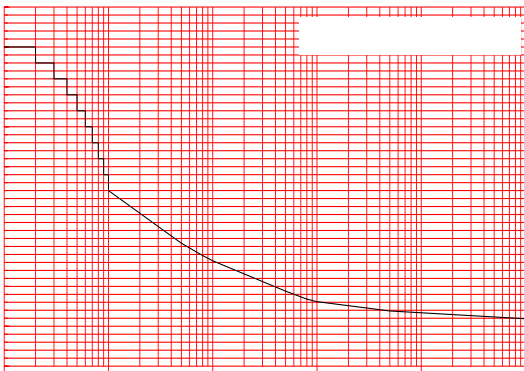
**FIG.1** Maximum power dissipation versus RMS on-state current



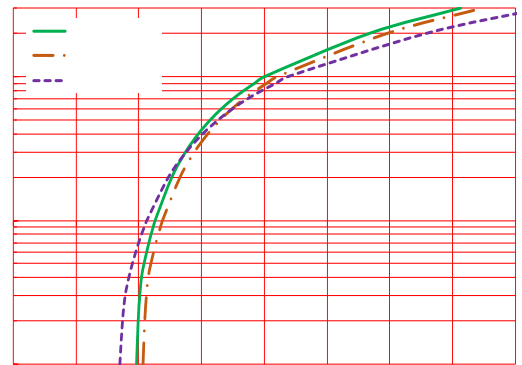
**FIG.2:** RMS on-state current versus case temperature



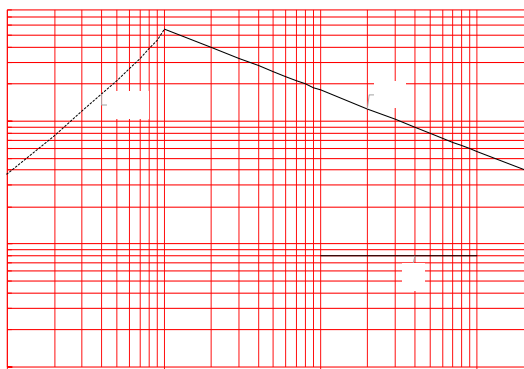
**FIG.3:** Surge peak on-state current versus number of cycles



**FIG.4:** On-state characteristics



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



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

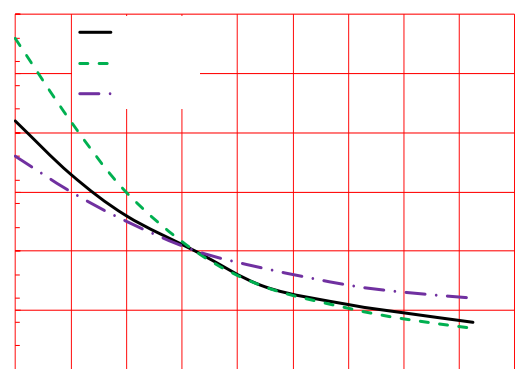


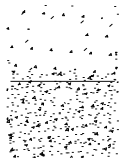
FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		H I- J			
JST04F-600BW	600	50	TO-220F(Ins)	50	Tube

### Document Revision History

Date	Revision	Changes
Apr.11, 2023	A.1.0	Last updated



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