



## JST06F-1600SW 6A TRIAC

Rev.A.1.1

### DESCRIPTION:

The JST06F-1600SW 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. JST06F-1600SW snubberless triac is especially recommended for use on inductive loads. It can be driven directly through the MCU I/O port. By using an external plastic package, JST06F-1600SW provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.

### MAIN FEATURES

### ABSOLUTE MAXIMUM RATINGS

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 ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	1600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	1600	V

Peak gate current ( $t_p=20\mu s$ , $T_j=125$ )	$I_{GM}$	4	A
Average gate power dissipation ( $T_j=125$ )	$P_{G(AV)}$	0.5	W
Peak gate power	$P_{GM}$	10	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	2	kV

**ELECTRICAL CHARACTERISTICS** ( $T_j=25$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V$ $R_L=33$	- -	MAX.	10	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.	25	mA
				30	
$I_H$	$I_T=100mA$		MAX.	15	mA
$dV/dt$	$V_D=1070V$ Gate Open $T_j=125$		MIN.	1000	V/ $\mu s$
$(dI/dt)_c$	$(dV/dt)_c=10V/\mu s$ , $T_j=125$		MIN.	15	A/ms
$t_{on}$	$I_G=20mA$ $I_A=200mA$ $I_R=20mA$ $T_j=25$		TYP.	2.5	$\mu s$
$t_{off}$				25	

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=8.5A$ $t_p=380\mu s$	$T_j=25$	1.75	V
$V_{TO}$	Threshold voltage	$T_j=125$	0.86	V
$R_D$	Dynamic resistance	$T_j=125$	82	m
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25$	10	$\mu A$
$I_{RRM}$		$T_j=125$	1	mA

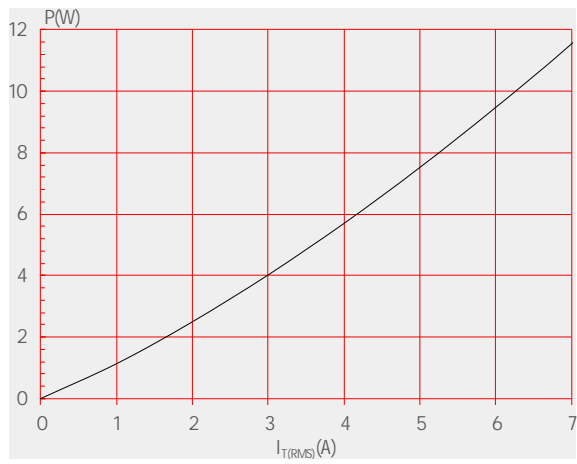
**THERMAL RESISTANCES**

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	2.8	/W
$R_{th(j-a)}$	junction to ambient (AC)	60	/W

ORDERING INFORMATION

\_\_\_\_\_ J    ST    06    F    -1600    SW

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



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

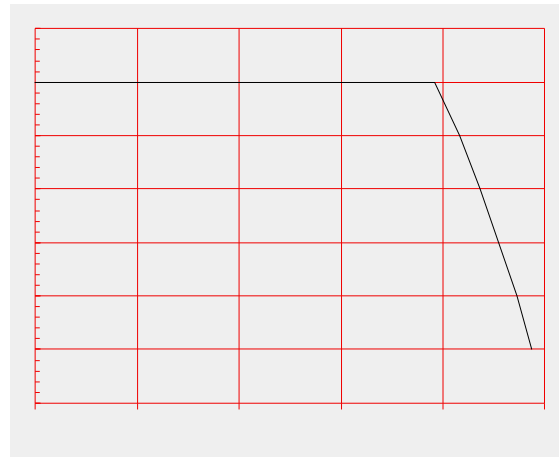
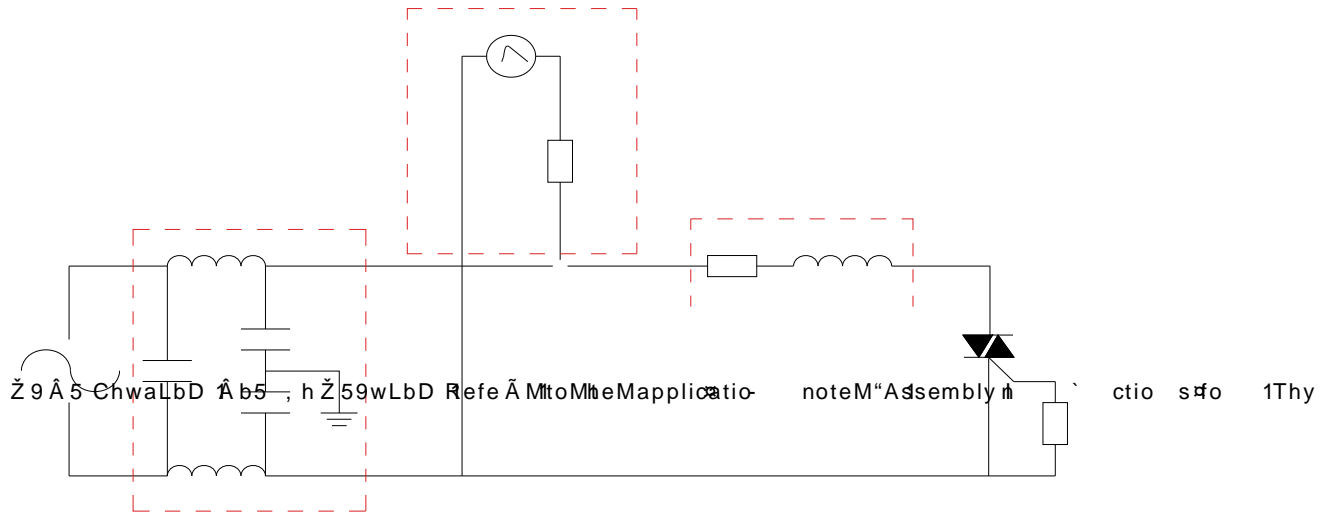




FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



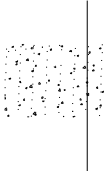
**ORDERING INFORMATION**

Order code	Voltage V <sub>DRM</sub> /V <sub>R<sub>RRM</sub></sub> (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		- -			
<b>JST06F-1600SW</b>	<b>1600</b>	<b>10</b>	<b>TO-220F(Ins)</b>	<b>50</b>	<b>Tube</b>

**Document Revision History**

Date	Revision	Changes
Feb.13, 2025	A.1.0	Last updated
Sept.28, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



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