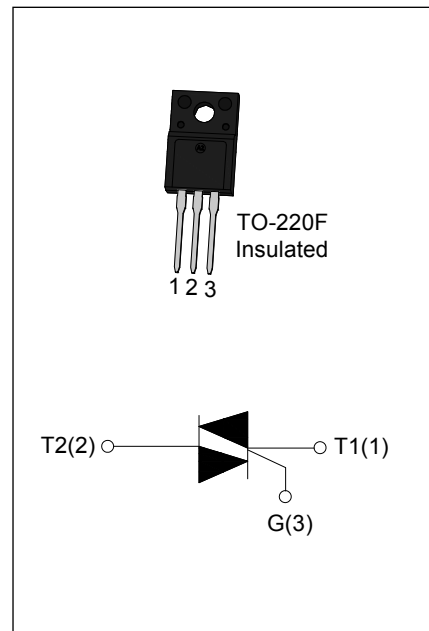




### DESCRIPTION:

JST08X provides high dv/dt rate with strong resistance to electromagnetic interface. They are especially recommended for use on home appliances such as motor control of washing machine. From all three terminals to external heatsink, JST08X provides a rated insulation voltage of 2000 V<sub>RMS</sub>. (File ref: E252906). Package TO-220F is RoHS compliant. (2011/65/EU)



### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
$V_{DRM} / V_{RRM}$	800	V

### 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( $T_j=25^{\circ}C$ )	$V_{DRM}$	800	V
Repetitive peak reverse voltage( $T_j=25^{\circ}C$ )	$V_{RRM}$	800	V
Non repetitive surge peak Off-state voltage	$V_{DSM}$	1000	V
Non repetitive peak reverse voltage	$V_{RSM}$	1000	V
RMS on-state current	TO-220F(Ins) ( $T_C=85^{\circ}C$ )	$I_{T(RMS)}$	8 A
Non repetitive surge peak on-state current ( full cycle, F=50Hz)	$I_{TSM}$	80	A
$I^2t$ value for fusing ( $t_p=10ms$ )	$I^2t$	32	A <sup>2</sup> s
Rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di/dt$	100	A/ $\mu$ s
Peak gate current	$I_{GM}$	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W

Peak gate power	$P_{GM}$	5	W
Peak pulse voltage ( $T_j=25^{\circ}\text{C}$ ; non-repetitive, off-state; FIG.7)	$V_{PP}$	3	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	35	mA
$V_{GT}$		I - II -III	MAX	1.5	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	50	mA
		II		60	
$I_H$	$I_T=100\text{mA}$		MAX	40	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	1000	V/ $\mu\text{s}$
(dI/dt) <sub>c</sub>	Without snubber $T_j=125^{\circ}\text{C}$		MIN	4.5	A/ms

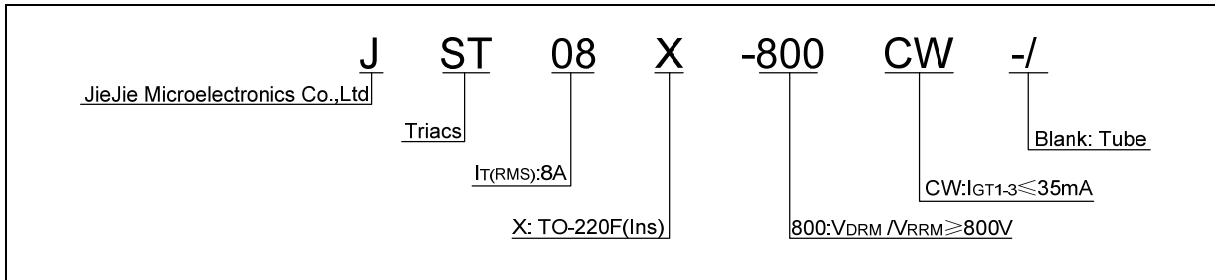
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=12\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.6	V
$V_{TO}$	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.93	V
$R_d$	Dynamic resistance	$T_j=125^{\circ}\text{C}$	37	m $\Omega$
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	1	mA

**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220F(Ins)	3.2	$^{\circ}\text{C/W}$

ORDERING INFORMATION



MARKING

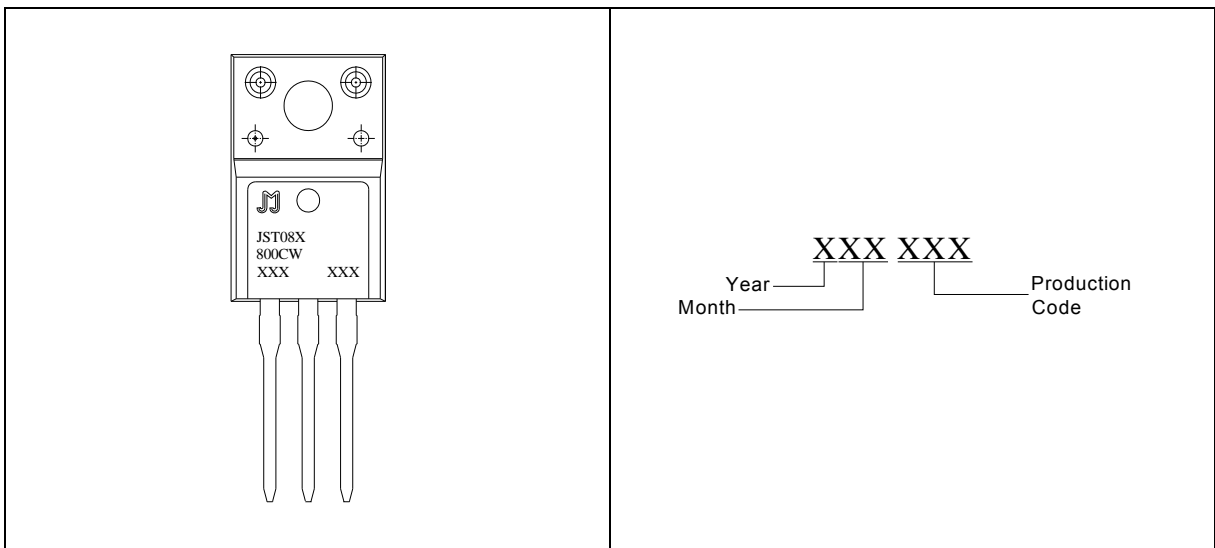


FIG.1: Maximum power dissipation versus RMS on-state current

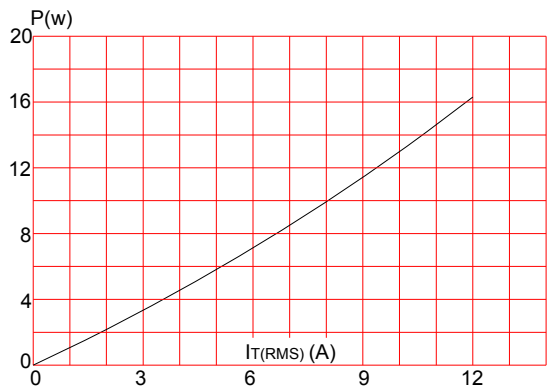


FIG.2: RMS on-state current versus case temperature

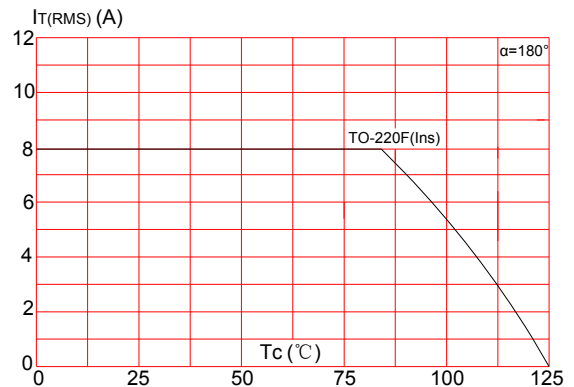


FIG.3: Surge peak on-state current versus number of cycles

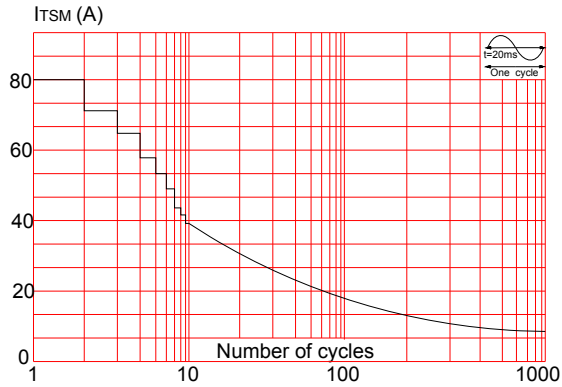


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$  and corresponding value of  $I^2t$  ( $dI/dt < 100\text{A}/\mu\text{s}$ )

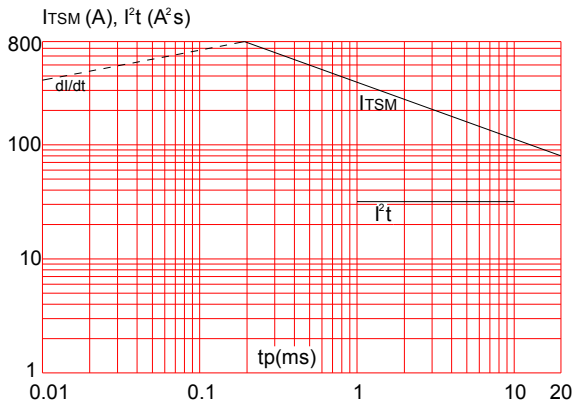


FIG.4: On-state characteristics (maximum values)

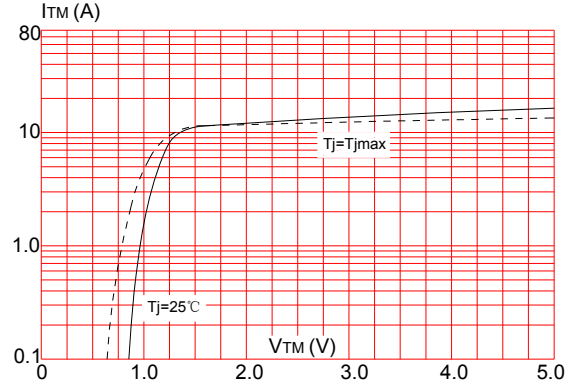


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

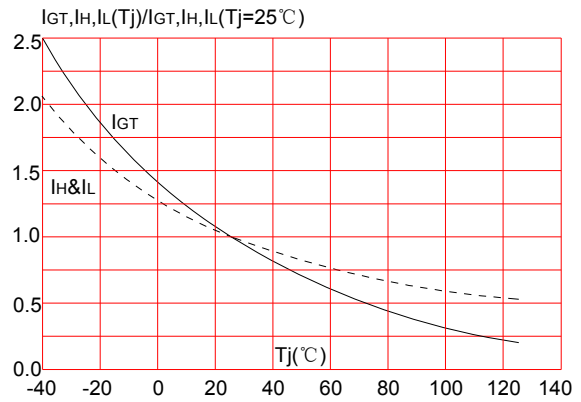
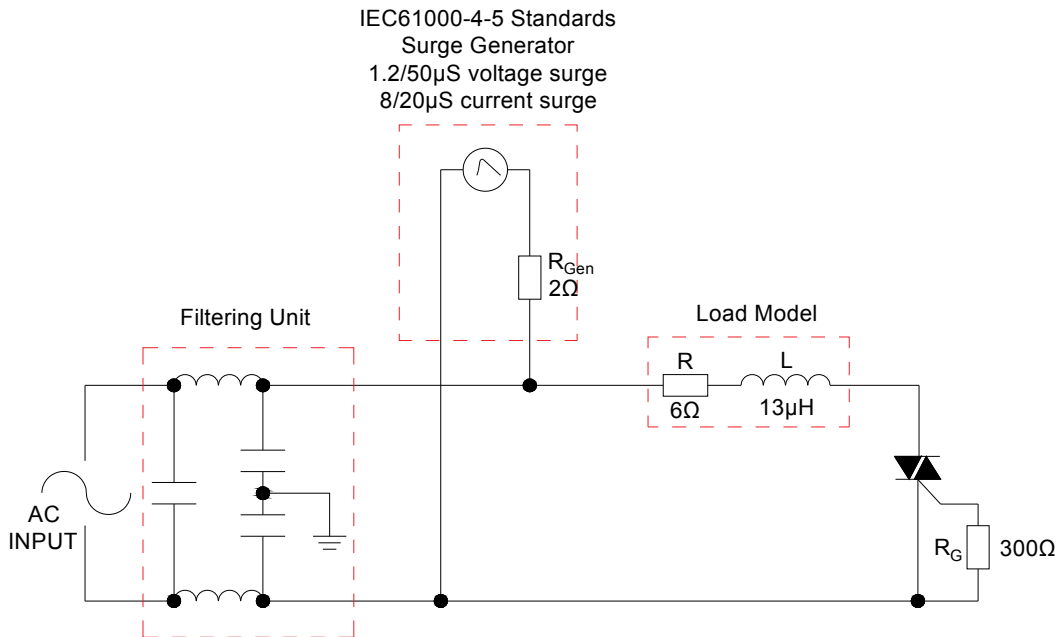


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



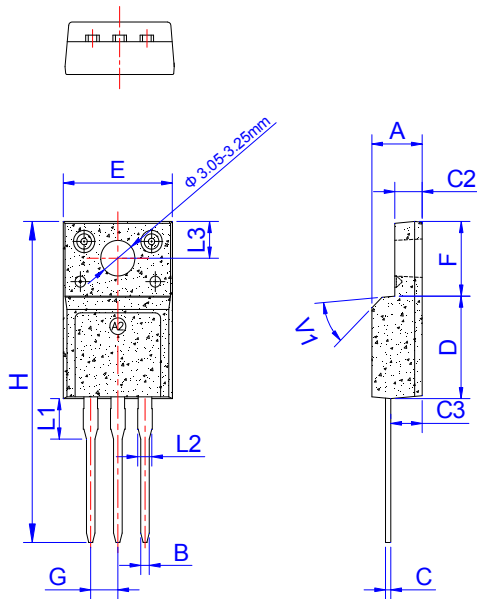
**ORDERING INFORMATION**

<b>Order code</b>	<b>Voltage <math>V_{DRM}/V_{RRM}</math> (V)</b>	<b>IGT(mA)</b>	<b>Package</b>	<b>Base qty. (pcs)</b>	<b>Delivery mode</b>
<b>JST08X-800CW</b>	<b>800</b>	<b>35</b>	<b>TO-220F(Ins)</b>	<b>50</b>	<b>Tube</b>

**Document Revision History**

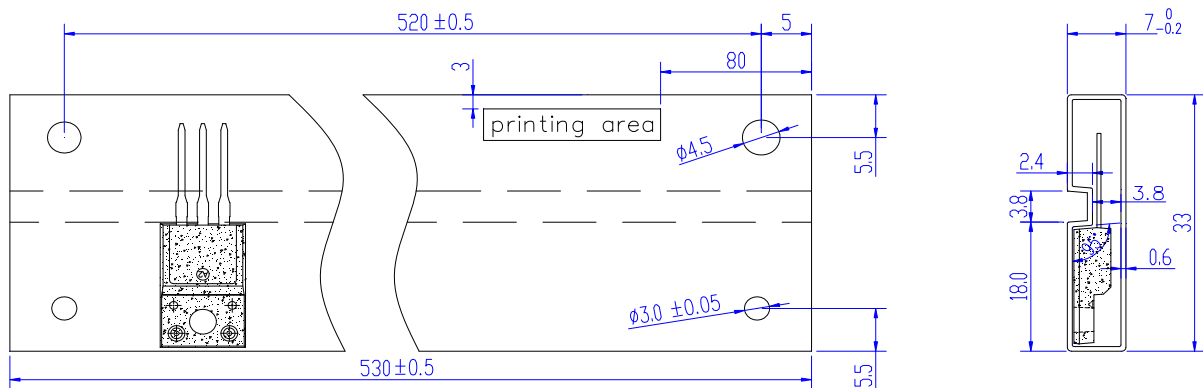
Date	Revision	Changes
Dec 6, 2019	3	Last update
Jan 5, 2022	4	Renew $I_{TSM} dl/dt$ & $V_{pp}$

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
L1		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
V1		45°			45°	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220F	TUBE	50	1,000	5,000



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