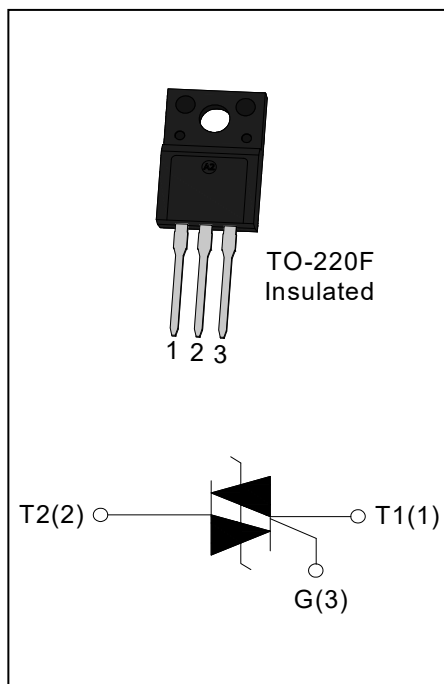




DESCRIPTION:

JST12 series provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on home appliances such as motor control of washing machine. JST12X provides insulation voltage rated at 2000V_{RMS}, from all three terminals to external heatsink, complying with UL standards (File ref: E252906).



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DSM} / V_{RSM}	1200	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
Non repetitive surge peak off-state voltage	V_{DSM}	1200	V
Non repetitive peak reverse voltage	V_{RSM}	1200	V
RMS on-state current	$I_{T(RMS)}$	12	A
TO-220F (Ins) ($T_C=65^\circ\text{C}$)			
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	120	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	72	A^2s
Rate of rise of on-state current ($I_G=2 \times I_{GT}$)	dI/dt	100	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	5	W

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	1.3	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/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=18\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220F(Ins)	3.4	$^{\circ}\text{C/W}$

ORDERING INFORMATION

<p>J ST 12 X -1200 CW -/</p> <p>JieJie Microelectronics Co.,Ltd</p> <p>Triacs</p> <p>$I_{T(RMS)}:12\text{A}$</p> <p>X:TO-220F (Ins)</p> <p>Blank: Tube</p> <p>CW:$I_{GT1-3}\leq 35\text{mA}$</p> <p>1200:$V_{DSM} / V_{RSM}\geq 1200\text{V}$</p>

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

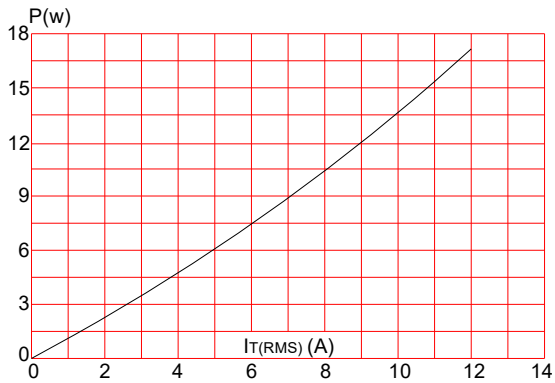


FIG.3: Surge peak on-state current versus number of cycles

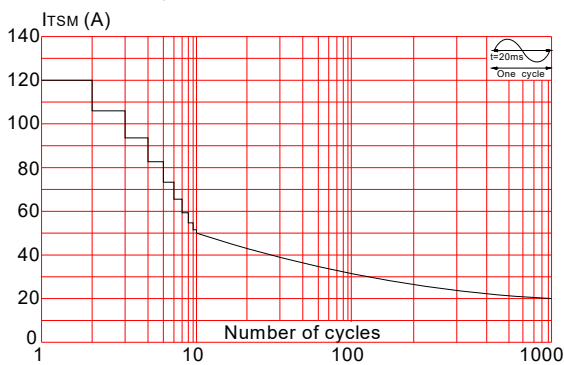


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($di/dt < 100\text{A}/\mu\text{s}$)

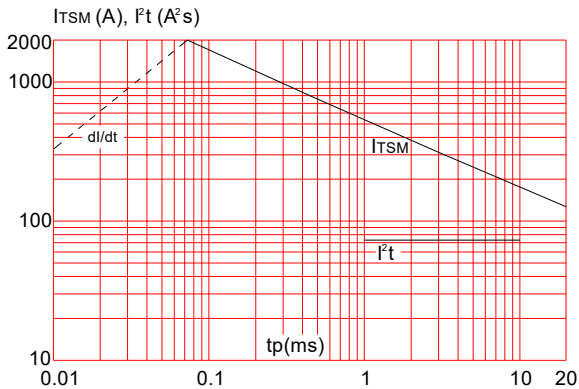


FIG.2: RMS on-state current versus case temperature

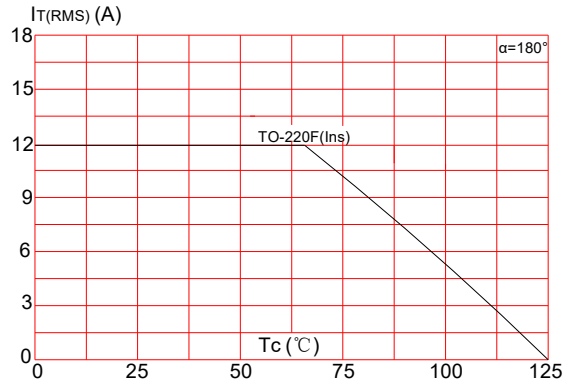


FIG.4: On-state characteristics (maximum values)

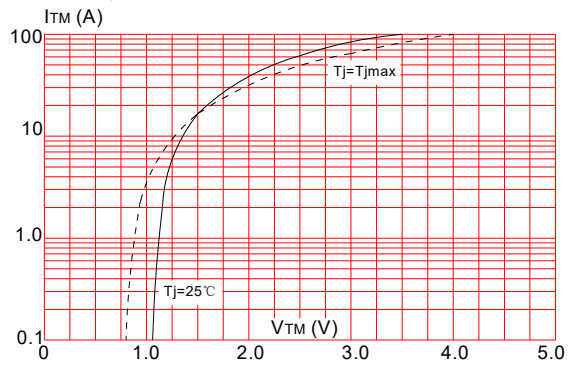
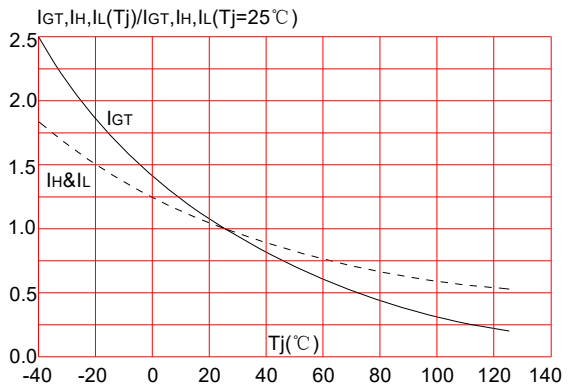


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



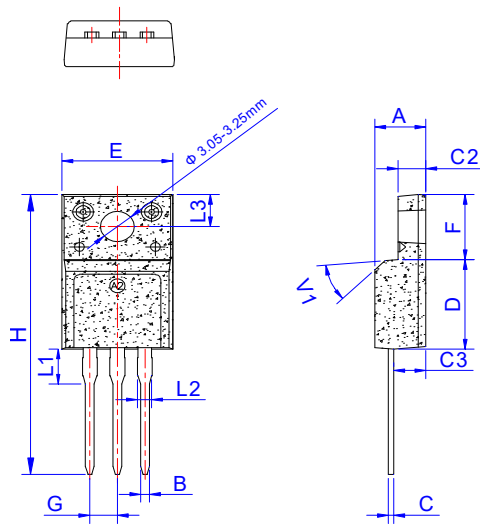
ORDERING INFORMATION

Order code	Voltage V_{DSM}/V_{RSM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JST12X-1200CW	1200	35	TO-220F	5,000	Tube

Document Revision History

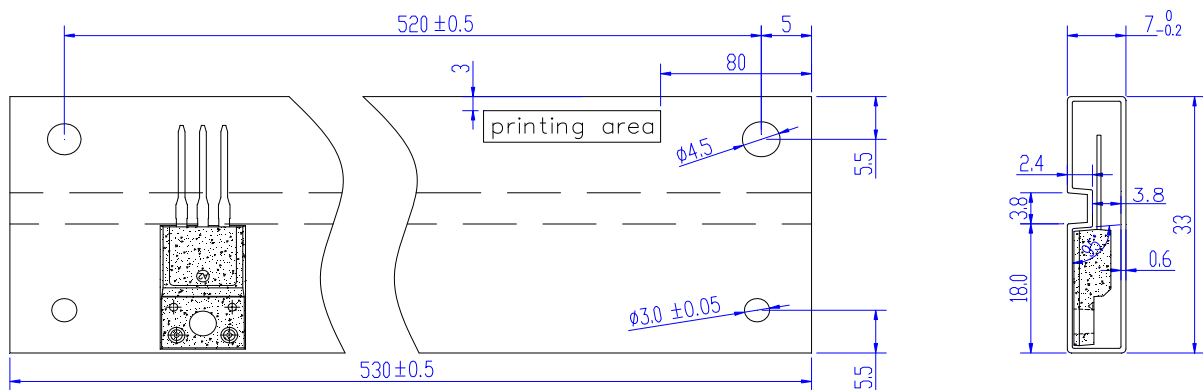
Date	Revision	Changes
March 13, 2021	4	Last update
Jul 12, 2022	5	Renew VDRM/VRRM=1200V

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	3.20		3.80	0.126		0.150
L2	1.14		1.70	0.045		0.067
L3	3.20		3.60	0.126		0.142
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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