



## JST12C-600CW 12A TRIACs

Rev.1

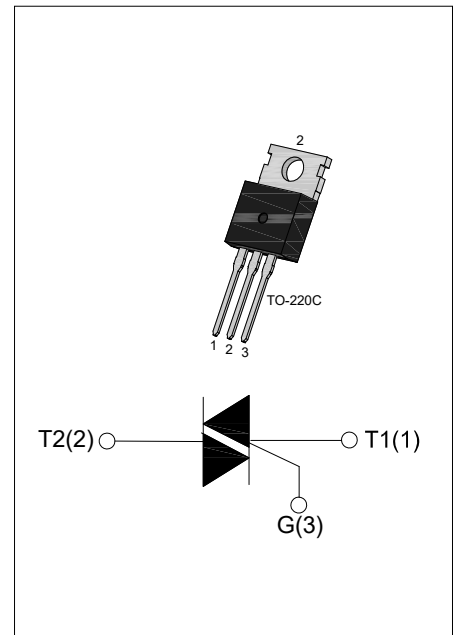
### DESCRIPTION:

With high ability to withstand the shock loading of large current, JST12C-600CW triacs provide high dv/dt rate with strong resistance to electromagnetic interface. With high commutation performances, especially recommended for use on inductive load.complying with UL standards.

(File ref: E252906) Package TO-220C is RoHS compliant. (2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
$V_{DRM}/V_{RRM}$	600	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 ( $T_j=25^{\circ}C$ )		$V_{DRM}$	600	V
Repetitive peak reverse voltage ( $T_j=25^{\circ}C$ )		$V_{RRM}$	600	V
RMS on-state current	TO-220C(Ins) ( $T_c=100^{\circ}C$ )	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)		$I_{TSM}$	120	A
$I^2t$ value for fusing ( $t_p=10ms$ )		$I^2t$	78	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	I - II - III	di/dt	50	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

**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/ $\mu\text{s}$
(dv/dt) <sub>c</sub>	Without snubber $T_j=125^{\circ}\text{C}$		MIN	6.5	A/ms

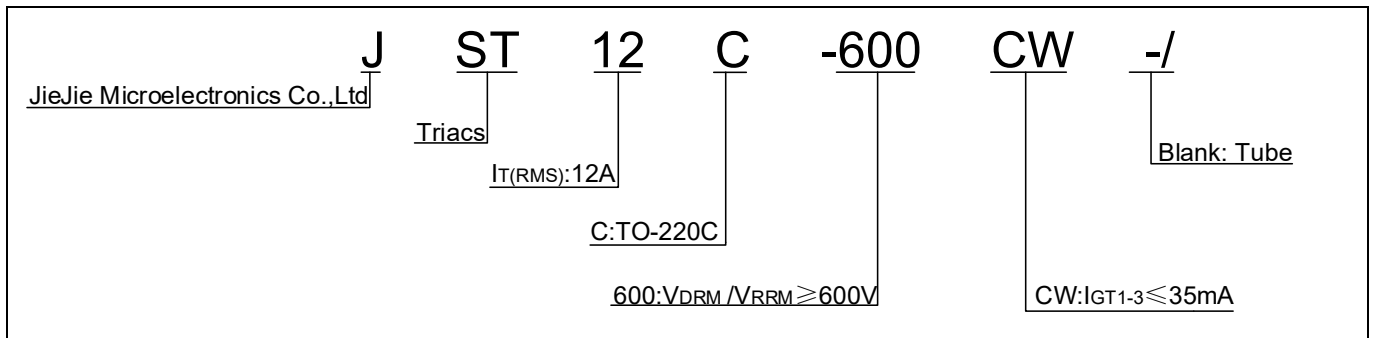
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit	
$V_{TM}$	$I_{TM}=17\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V	
$V_{TO}$	Threshold voltage		$T_j=125^{\circ}\text{C}$	0.9	V
$R_d$	Dynamic resistance		$T_j=125^{\circ}\text{C}$	32	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	

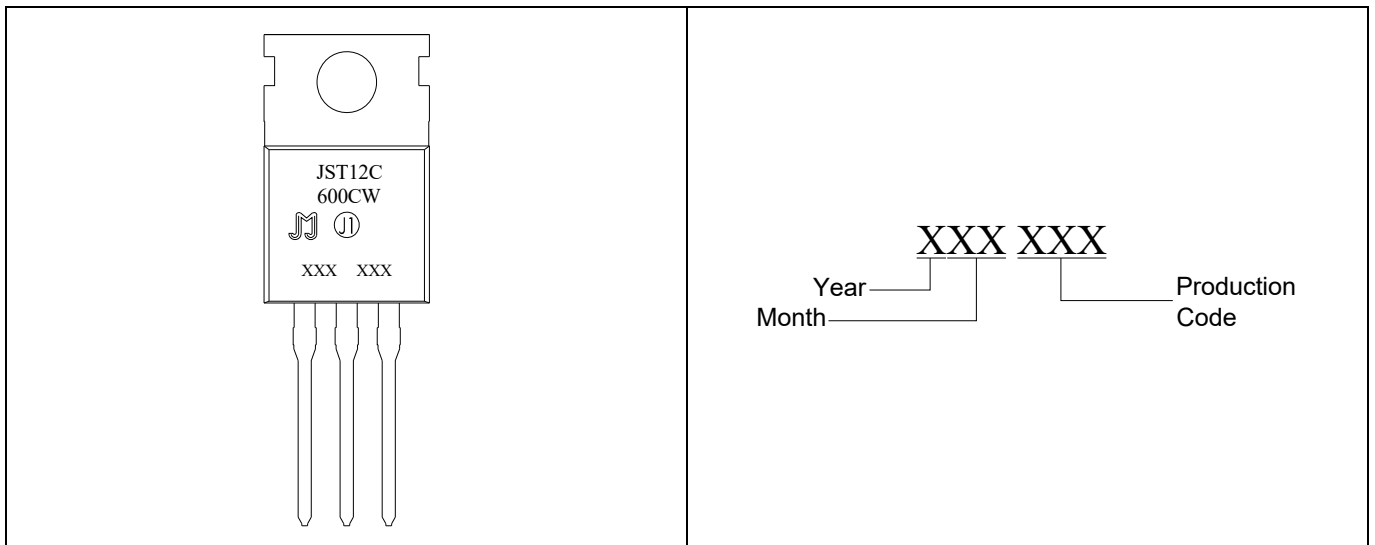
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220C	1.7	$^{\circ}\text{C}/\text{W}$

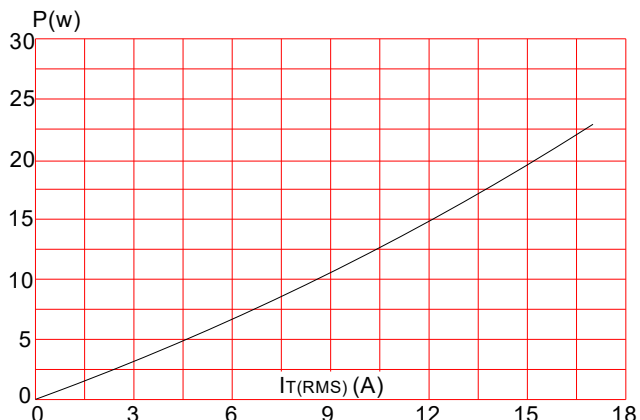
**ORDERING INFORMATION**



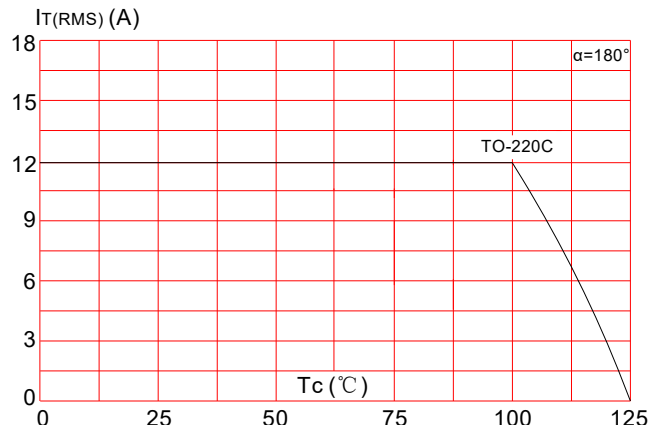
**MARKING**



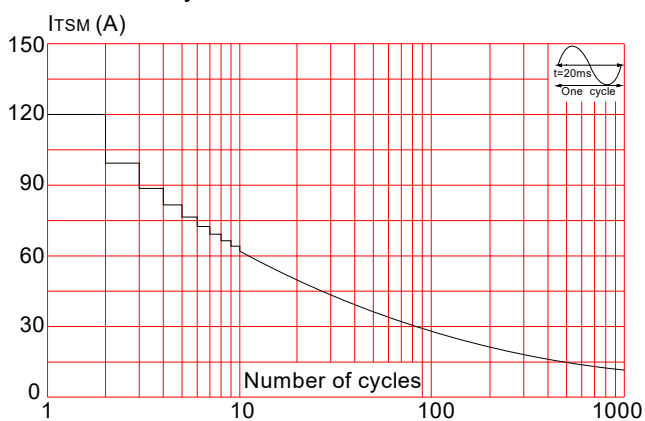
**FIG.1** Maximum power dissipation versus RMS on-state current



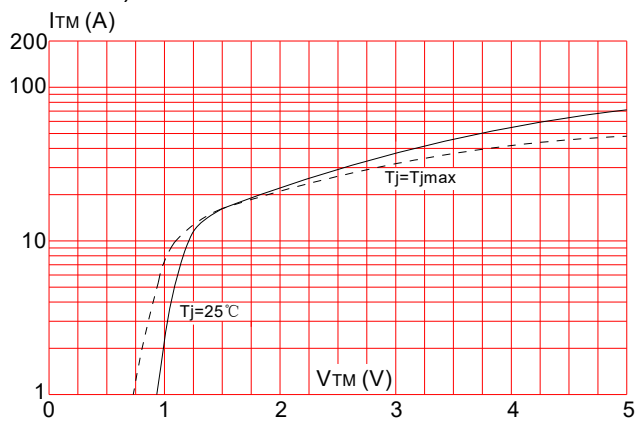
**FIG.2:** RMS on-state current versus case temperature



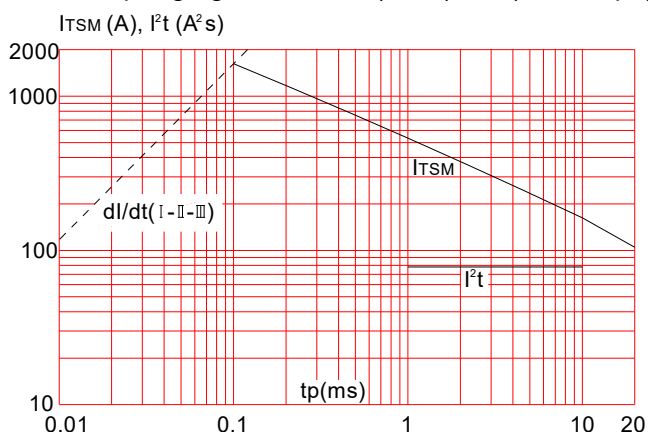
**FIG.3:** Surge peak on-state current versus number of cycles



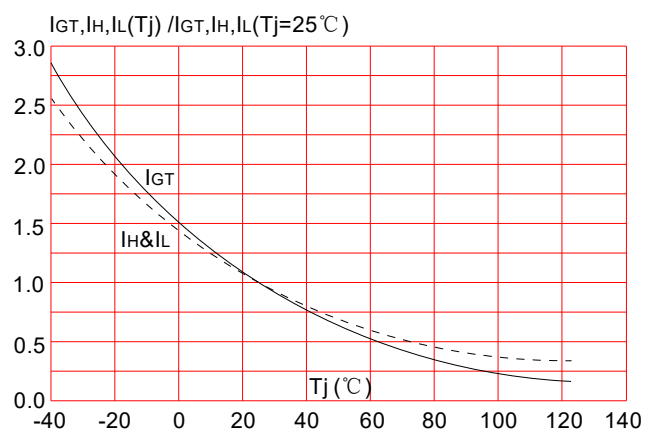
**FIG.4:** On-state characteristics (maximum values)



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



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



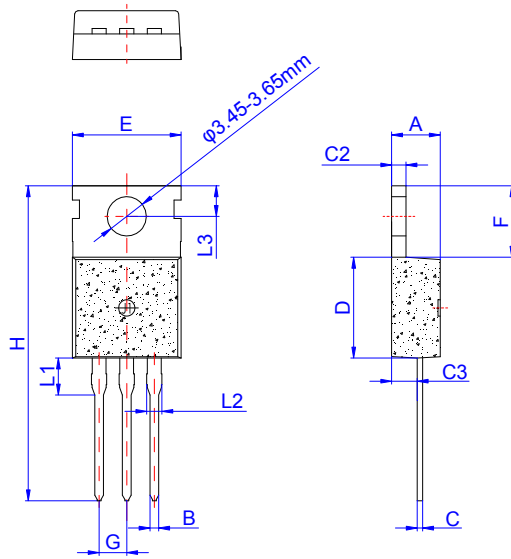
**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
JST12C-600CW	600	35	TO-220C	50	Tube

**Document Revision History**

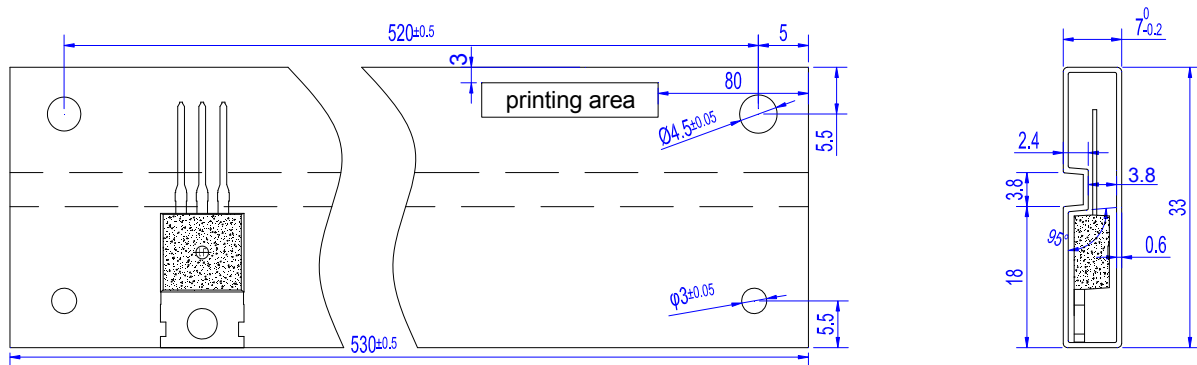
Date	Revision	Changes
Mar 21, 2022	1	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.23		1.32	0.048		0.052
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.3	0.390		0.406
F	6.30		6.90	0.248		0.272
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.39			0.133	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116

DELIVERY MODE



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



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