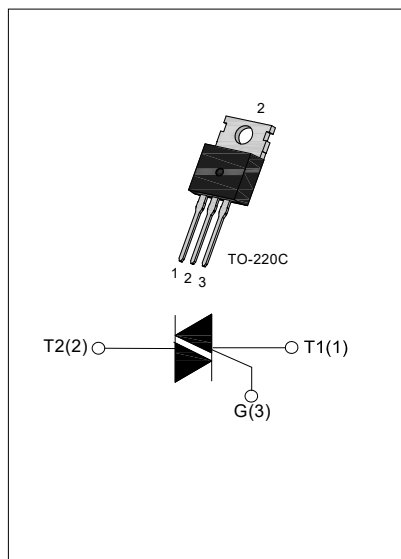




DESCRIPTION:

JST138C-600D triacs with low holding and latching current are especially recommended for use on middle and small resistance type power 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($T_j=25^\circ\text{C}$)		V_{DRM}	600	V
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)		V_{RRM}	600	V
Non repetitive surge peak Off-state voltage		V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage		V_{RSM}	$V_{RRM} + 100$	V
RMS on-state current	TO-220C ($T_C=95^\circ\text{C}$)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	95	A
I^2t value for fusing ($t_p=10\text{ms}$)		I^2t	45	A^2s
Critical rate of rise of on-state current($I_G=2 \times I_{GT}$)	I - II - III	di/dt	50	A/ μs
	IV		10	
Peak gate current		I_{GM}	2	A
Average gate power dissipation		$P_{G(AV)}$	0.5	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	5	mA
		IV		10	
V_{GT}		ALL	MAX	1.5	V
V_{GD}	$V_D=V_{DRM} T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2	V
I_L	$I_G=1.2I_{GT}$	I - III	MAX	15	mA
		II - IV		20	
I_H	$I_T=100\text{mA}$		MAX	10	mA
dv/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	20	V/ μs

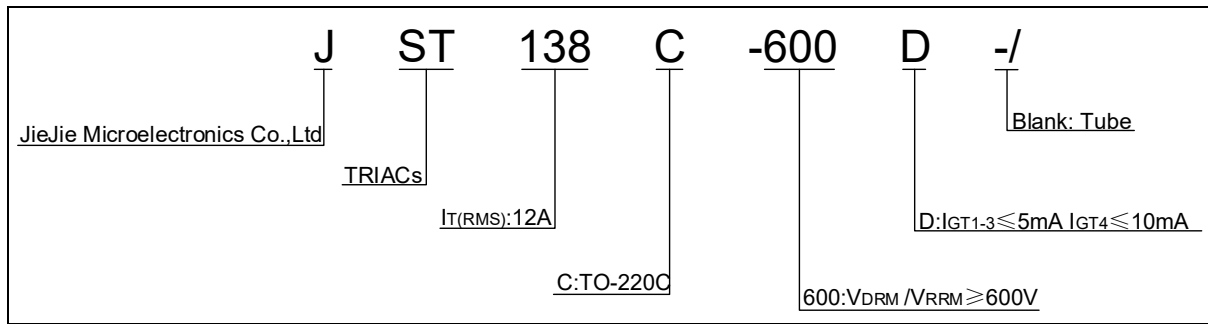
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=15\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	1	mA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-220C	1.4	$^\circ\text{C/W}$

ORDERING INFORMATION



MARKING

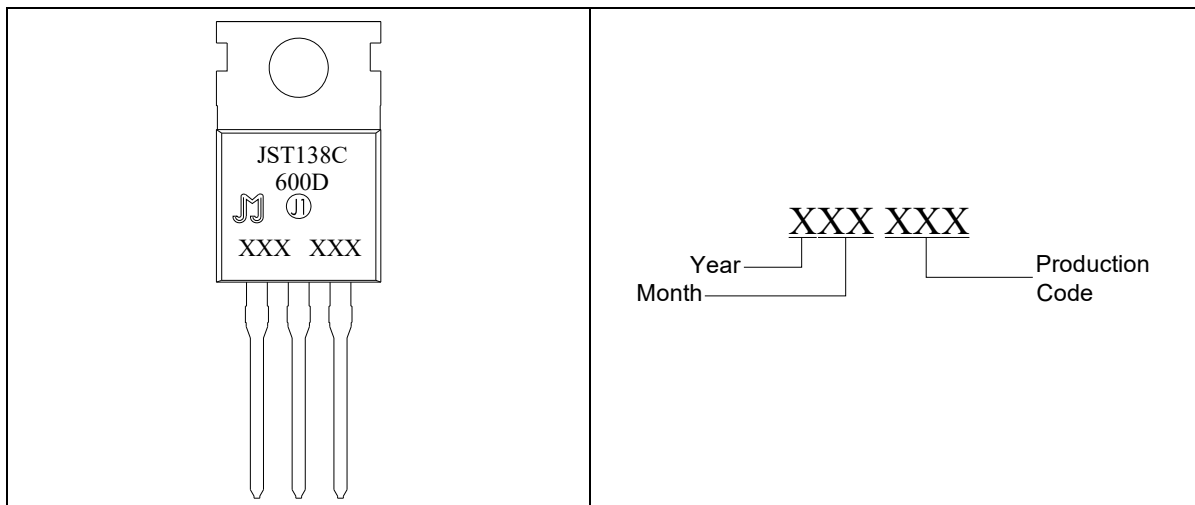


FIG.1: Maximum power dissipation versus RMS on-state current

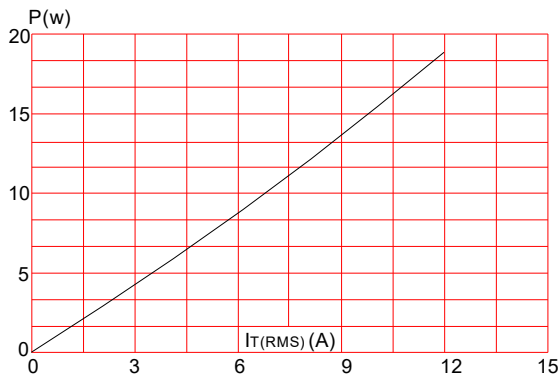


FIG.2: RMS on-state current versus case temperature

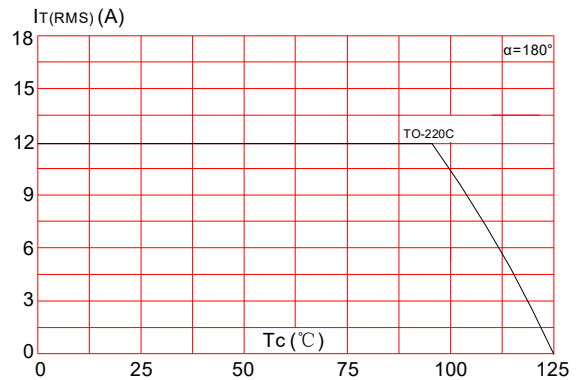


FIG.3: Surge peak on-state current versus number of cycles

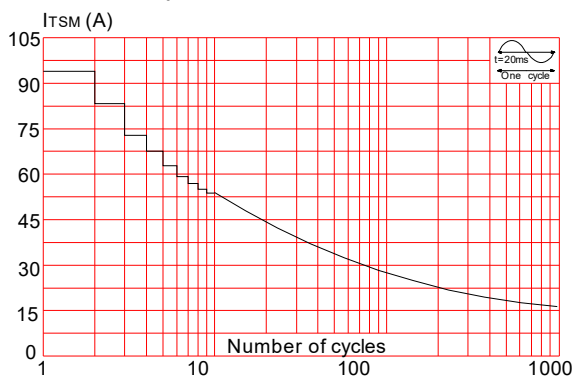


FIG.4: On-state characteristics (maximum values)

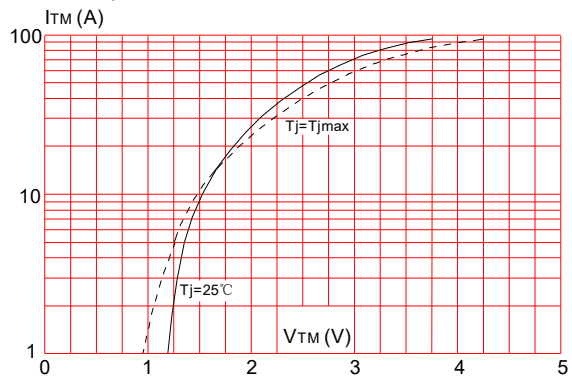


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$, and corresponding value of $I^2 t$ (I - II -III: $dI/dt < 50\text{A}/\mu\text{s}$; IV: $dI/dt < 10\text{A}/\mu\text{s}$)

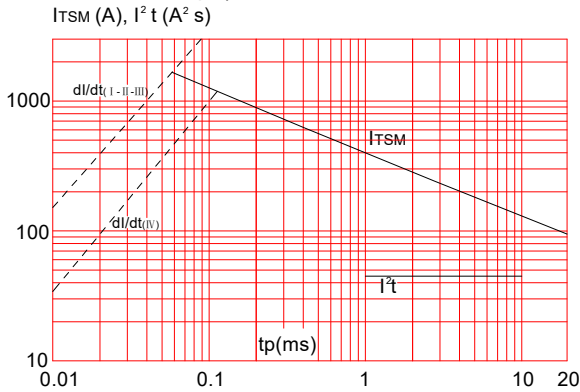


FIG.6: Relative variations of gate trigger current versus junction temperature

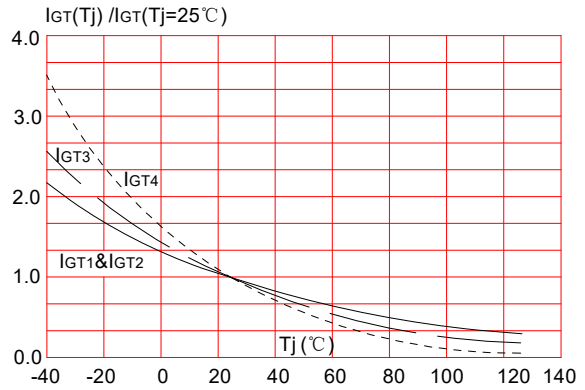


FIG.7: Relative variations of holding current versus junction temperature

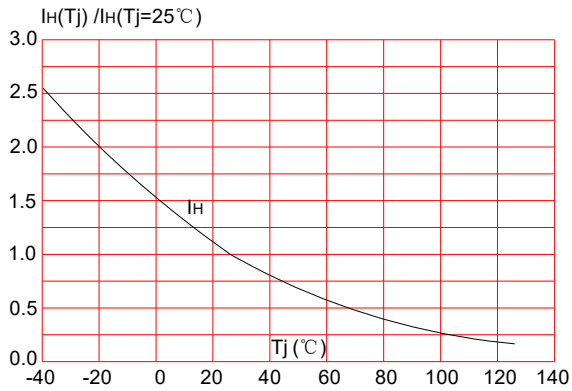
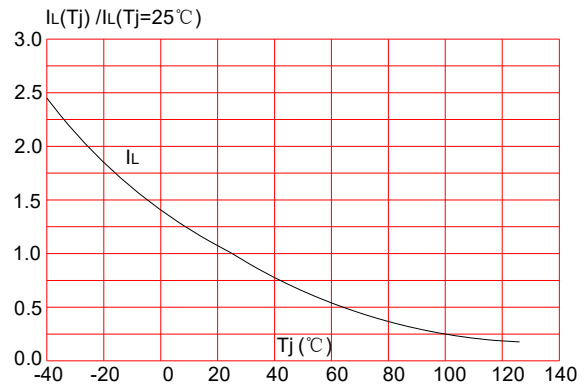


FIG.8: Relative variations of latching current versus junction temperature



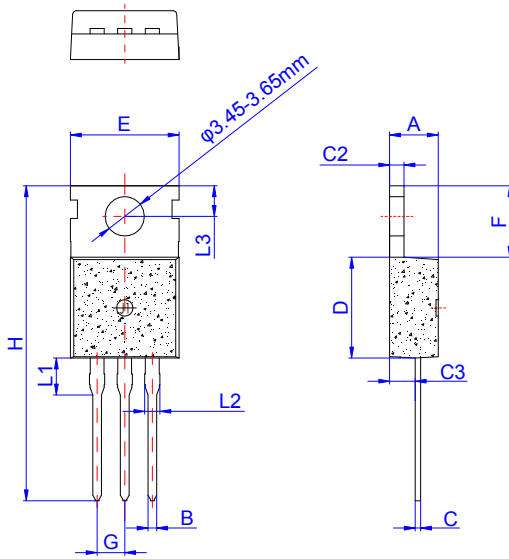
ORDERING INFORMATION

Order code	Voltage V _{DRM} /V _{R_{RM}} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		I - II -III	IV			
JST138C-600D	600	5	10	TO-220C	50	Tube

Document Revision History

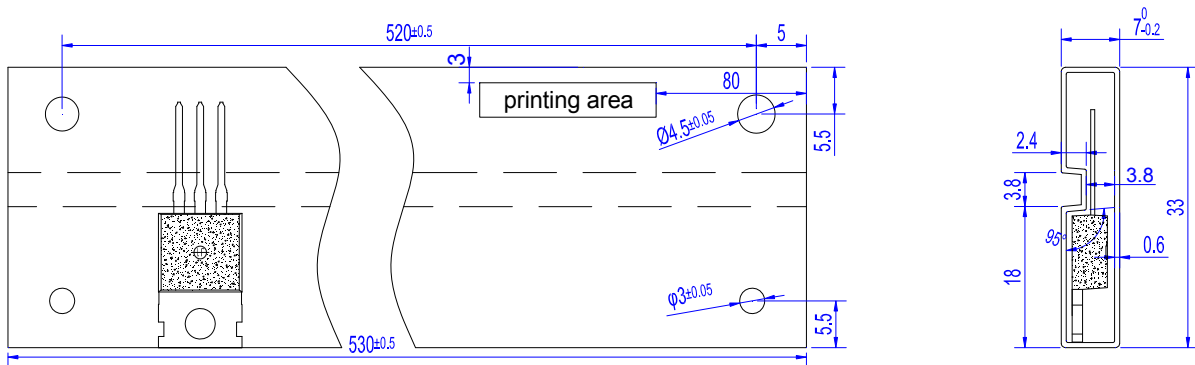
Date	Revision	Changes
Mar 18, 2022	1	Last update

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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