JST138C-1600D 12A TRIAC

Rev.A.1.1

The JST138C-1600D 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. From T2 terminals to external heatsink. Package TO-220C is RoHS compliant.

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)		V_{DRM}	1600	V
Repetitive peak reverse voltage (T_j=25)		V_{RRM}	1600	V
RMS on-state current (T_C 90)		$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25)		I_{TSM}	70	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25)			77	
I^2t value for fusing (t_p=10ms , T_j=25)		I^2t	24.5	A^2s
Critical rate of rise of on-state current (I_G=2 I_{GT} , f=100Hz , T_j=125)	-	dI/dt	30	A/μs
	-		20	
Peak gate current (t_p=20μs , 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

(T_j=25 unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	V_D=12V R_L=33Ω	- -	MAX.	5	mA
				10	
V_{GT}		ALL	MAX.	1	V
V_{GD}	V_D=V_{DRM} T_j=125 R_L=3.3kΩ	ALL	MIN.	0.2	V
I_L	I_G=1.2I_{GT}	- -	MAX.	15	mA
				20	
I_H	I_T=500mA		MAX.	10	mA
dV/dt	V_D=1070V Gate Open T_j=125		MIN.	50	V/μs
(dV/dt)c	(dI/dt)c=5A/ms, T_j=110		MIN.	5	V/μs
t_{on}	I_G=40mA I_A=200mA I_R=20mA T_j=25		TYP.	3	μs
t_{off}				30	

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM}=15A t_p=380μs	T_j=25	1.8	V
V_{TO}	Threshold voltage	T_j=125	0.84	V
R_D	Dynamic resistance	T_j=125	59	mΩ
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25	10	μA
I_{RRM}		T_j=125	5	mA

Symbol **Parameter**

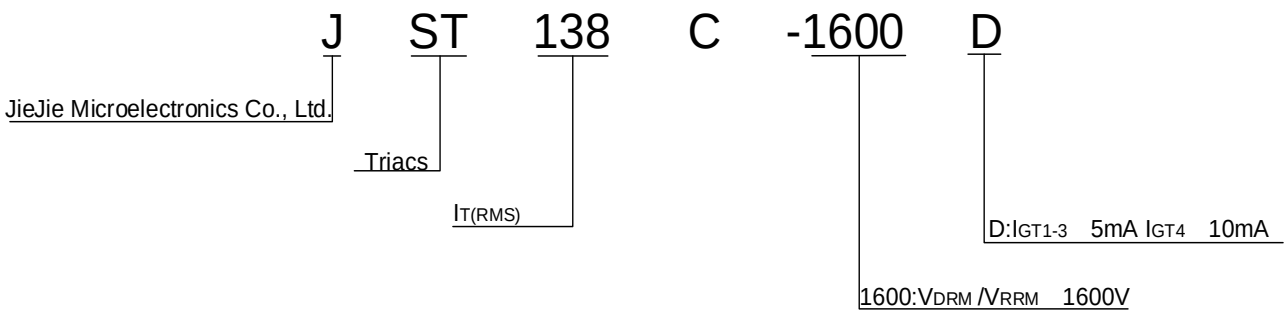

J ST 138 C -1600 D
JieJie Microelectronics Co., Ltd.
Triacs
IT(RMS)
D:IGT1-3 5mA IGT4 10mA
1600:VDRM /VRRM 1600V

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

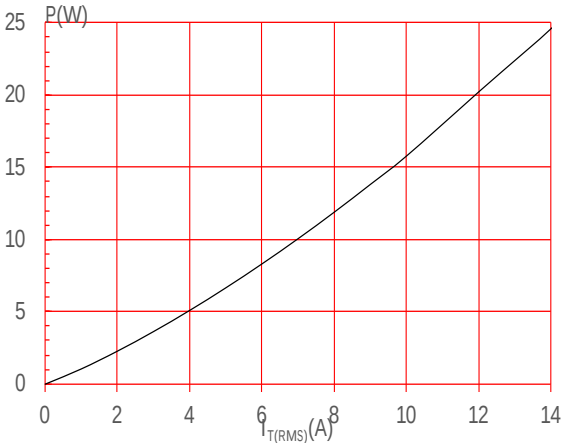


FIG.2: RMS on-state current versus case temperature

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



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