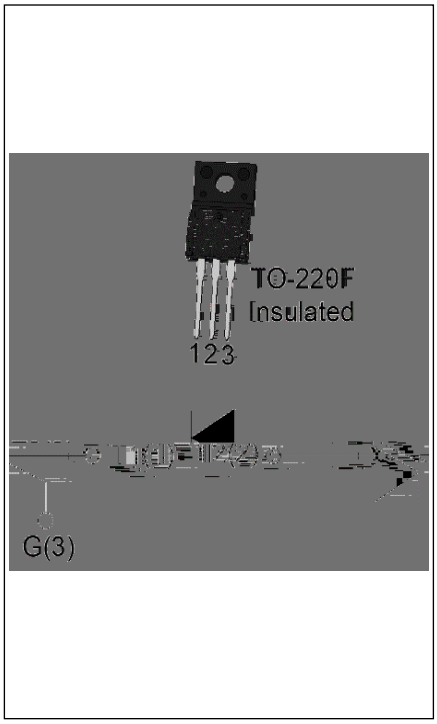
JST138F-600F 12A TRIAC

Rev.A.1.1

^ Z / W d / K E W

The JST138F-600F 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. By using an external plastic package, JST138F-600F provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



D / E & d h Z ^

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM} /V_{RRM}	600	V
I_{GT} / / /	25/25/25/70	mA

^ K > h d D y / D h D Z d / E ' ^

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}	600	V
Repetitive peak reverse voltage (T_j=25)		V_{RRM}	600	V
RMS on-state current (T_C 074)		$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25)		I_{TSM}	95	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25)			105	
I^2t value for fusing (t_p=10ms , T_j=25)		I^2t	45	A^2s
Critical rate of rise of on-state current (I_G=2 hI $_{GT}$, f=100Hz , T_j=125)	-	dI/dt	100	A/µs
	-		70	
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

Peak pulse voltage (T_j=25 ; non-repetitive,off-state;FIG.7)	V_{pp}	1	kV

> d Z / > , Z d Z(Tj=25 d /unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	V_D=12V R_L=33Ω	- -	MAX.	25	mA
				70	
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

K Z Z/E' /E&K Z D d/K E

J ST 138 F -600 F

JieJie Microelectronics Co., Ltd

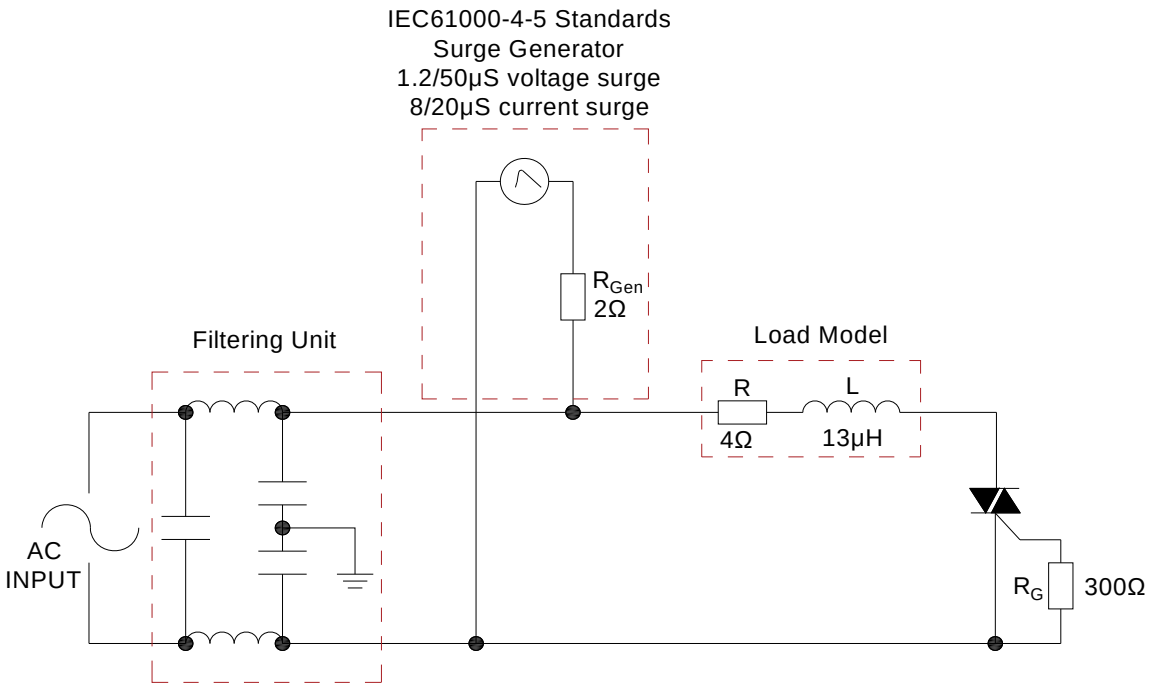
Triacs

600:V

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

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

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



> &KZD/E' E ^K> Z/E'

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics.

K Z Z / E ' / E & K Z D d / K E

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		- -				
JST138F-600F	600	25	70	TO-220F(Ins)	50	Tube

Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Oct.15, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

W < ' D , E / > d f\ ` A ` € Ìd0 ` a 6&32À @B B QdqŒ ` d