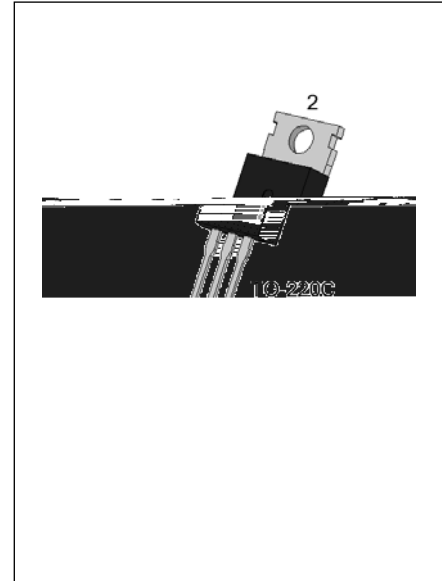


DESCRIPTION:

The JST138C-800F 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.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	800	V
$I_{GT} / / /$	25/25/25/70	mA

ABSOLUTE MAXIMUM RATINGS

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 ($T_j=25^\circ\text{C}$)		V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)		V_{RRM}	800	V
RMS on-state current ($T_c 098^\circ\text{C}$)		$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)		I_{TSM}	95	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)			105	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)		I^2t	45	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	-	di/dt	100	A/s
	-		70	
Peak gate current ($t_p=20^\circ\text{s}$, $T_j=125^\circ\text{C}$)		I_{GM}	4	A
Average gate power dissipation ($T_j=125^\circ\text{C}$)		$P_{G(AV)}$	0.5	W
Peak gate power		P_{GM}	10	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.7)		V_{pp}	1	kV

ELECTRICAL CHARACTERISTICS (unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V$ $R_L=33$	- -	MAX.	25	mA
				70	
V_{GT}		ALL	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125$ $R_L=3.3k$	ALL	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	- -	MAX.	40	mA
				90	
I_H	$I_T=500mA$		MAX.	40	mA
dV/dt	$V_D=540V$ Gate Open $T_j=125$		MIN.	200	V s
$(dV/dt)_c$	$(dI/dt)_c=5A/ms$, $T_j=110$		MIN.	8	9 V
t_{on}	$I_G=80mA$ $I_A=400mA$ $I_R=40mA$ $T_j=25$		TYP.	5	s
t_{off}				30	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=15A$ $t_p=380$ s	$T_j=25$	1.6	V
V_{TO}	Threshold voltage	$T_j=125$	0.8	V
R_D	Dynamic resistance	$T_j=125$	41	P

JST138C-800F

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

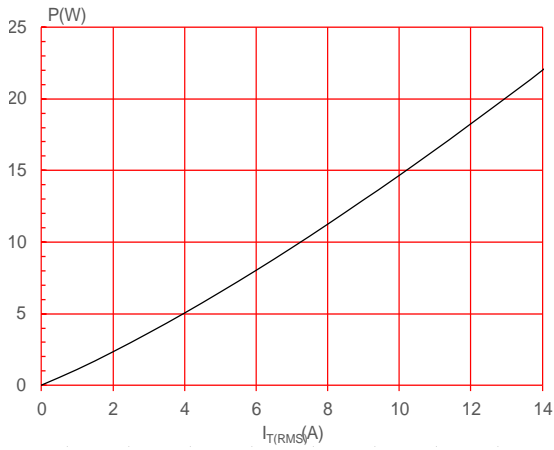


FIG.2: RMS on-state current versus case temperature

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

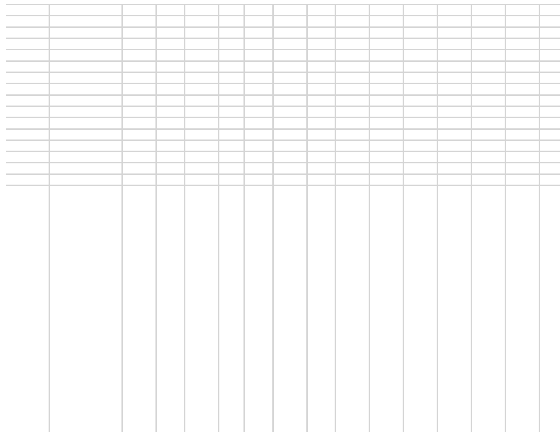
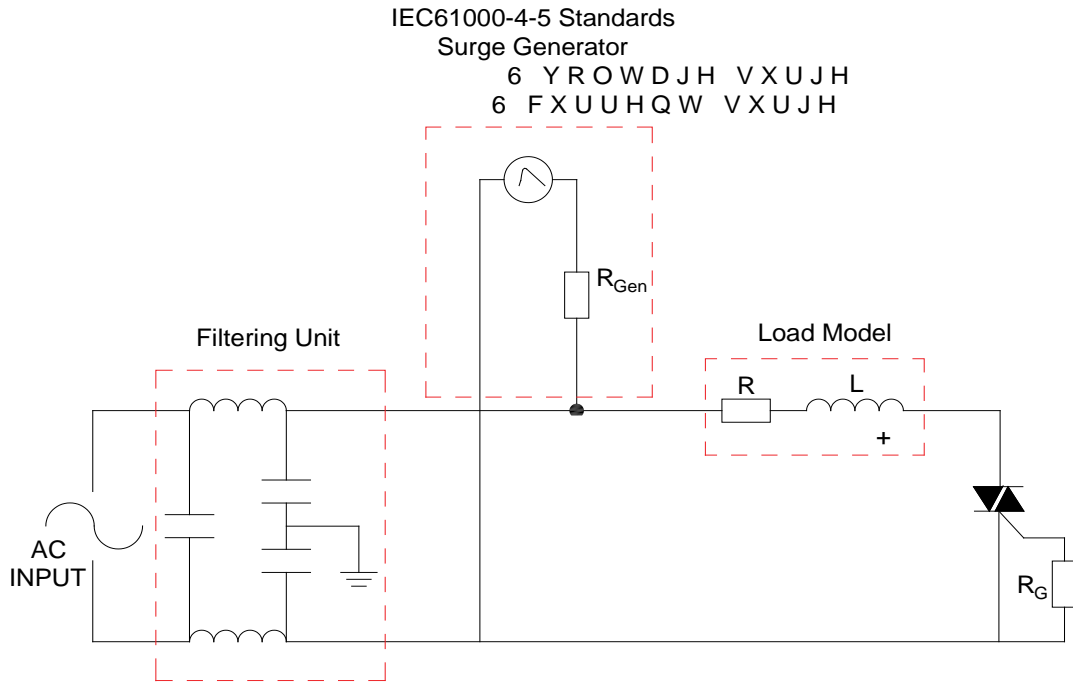


FIG.7 ÖTest circuit for inductive and resistive loads to IEC-61000-4-5 standards



ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)		Package	Base qty. (pcs)	Delivery mode
		H- I- J	K			
JST138C-800F	800	25	70	TO-220C	50	Tube

Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Oct.16, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



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