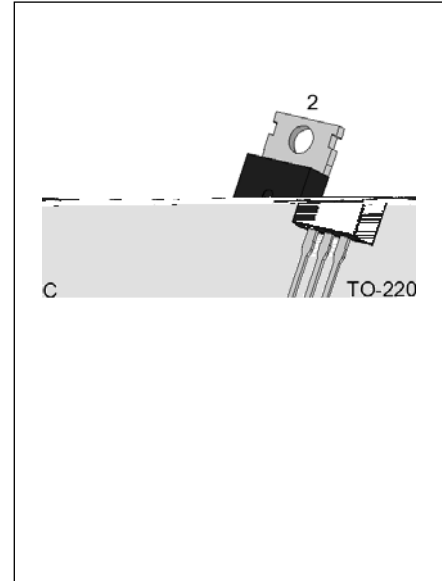


**DESCRIPTION:**

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	$\text{A}^2\text{s}$
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

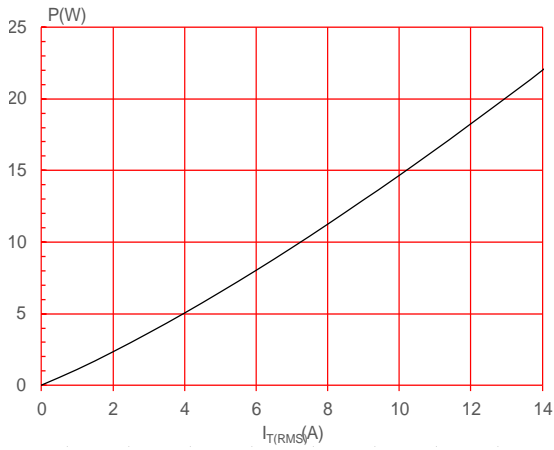
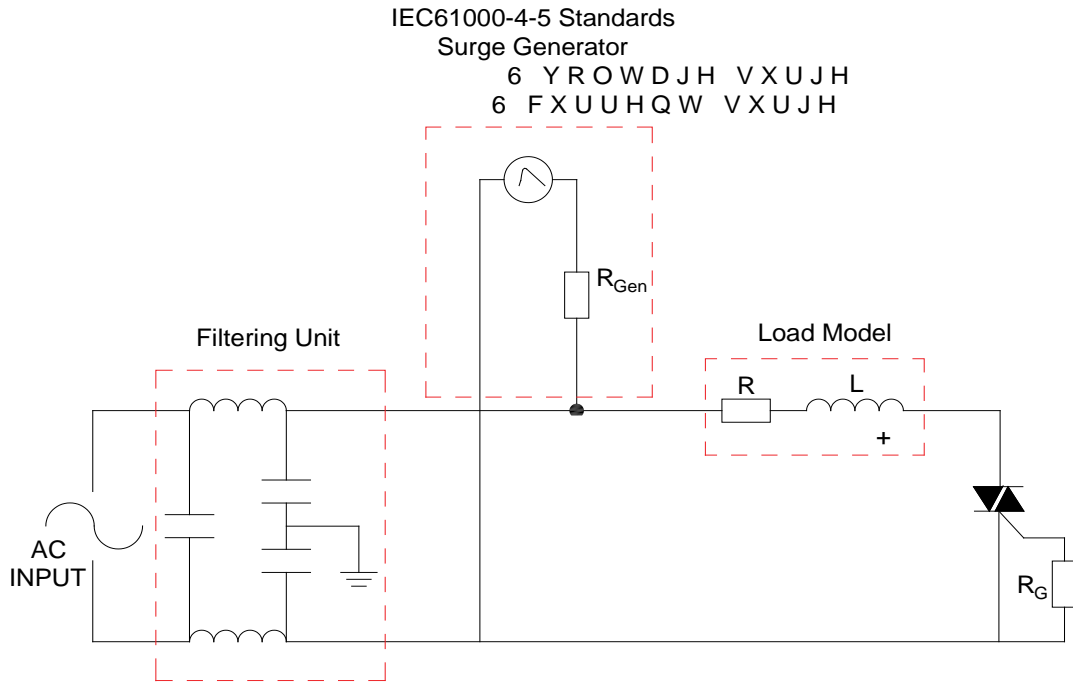


FIG.2: RMS on-state current versus case temperature

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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