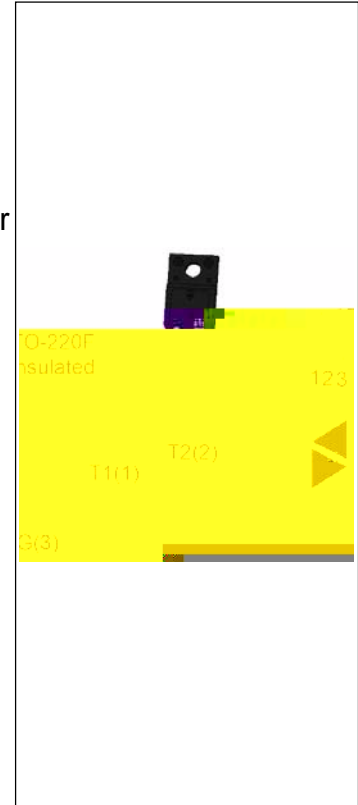




JST20F-1200BW 20A TRIAC

Rev.A.1.1

The JST20F-1200BW 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. JST20F-1200BW snubberless triac is especially recommended for use on inductive loads. By using an external plastic package, JST20F-1200BW provides a rated insulation voltage of 2000 VRMS, complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	20	A
V_{DRM}/V_{RRM}	1200	V
$I_{GT} / /$	50/50/50	mA

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}	1200	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	1200	V
RMS on-state current ($T_c 067^\circ\text{C}$)	$I_{T(RMS)}$	20	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	200	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		220	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	200	A^2s
Critical rate of rise of on-state current ($I_G=2\text{hI}_{GT}$, $f=100\text{Hz}$, $T_j=125^\circ\text{C}$)	di/dt	100	$\text{A}/\mu\text{s}$
Peak gate current ($t_p=20\mu\text{s}$, $T_j=125^\circ\text{C}$)	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 ($T_j=25$; non-repetitive, off-state; FIG.7)	V_{pp}	3.8	kV

($T_j=25$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12V R_L=33$	- -	MAX.	50	mA
V_{GT}		- -	MAX.	1	V
V_{GD}	$V_D=V_{DRM} T_j=125$ $R_L=3.3k$	- -	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	-	MAX.	60	mA
				80	
I_H	$I_T=500mA$		MAX.	60	mA
dV/dt	$V_D=800V$ Gate Open $T_j=125$		MIN.	1000	V/ μs
(dI/dt)c	(dV/dt)c=20V/ μs $T_j=125$		MIN.	25	A/ms
t_{on}	$I_G=80mA I_A=400mA I_R=40mA$ $T_j=25$		TYP.	10	μs
t_{off}				70	

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=28A t_p=380\mu s$	$T_j=25$	1.4	V
V_{TO}	Threshold voltage	$T_j=125$	0.76	V
R_D	Dynamic resistance	$T_j=125$	27	m
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25$	10	μA
I_{RRM}		$T_j=125$	3	mA

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	2.2	/W
$R_{th(j-a)}$	junction to ambient (AC)	60	/W

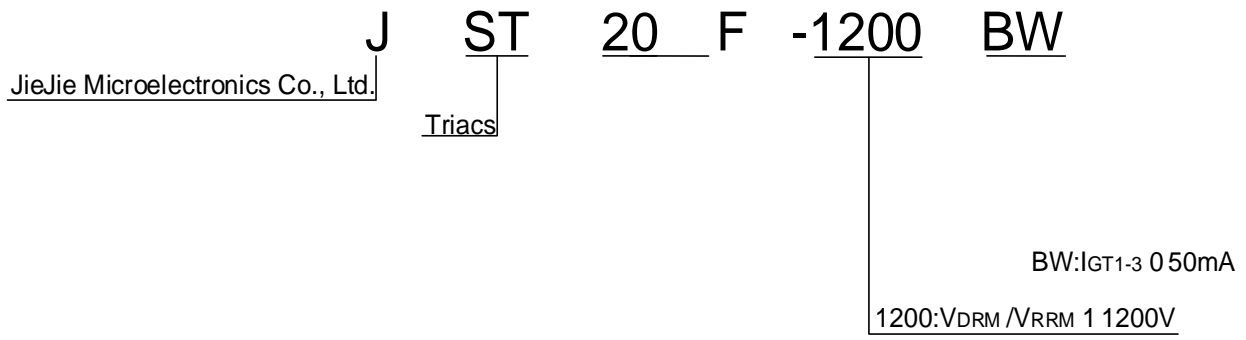


FIG.1: Maximum power dissipation versus RMS on-state current

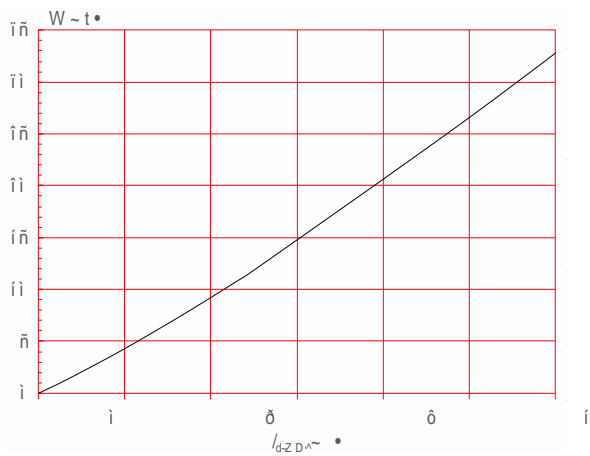


FIG.3: Surge peak on-state current versus number of cycles



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

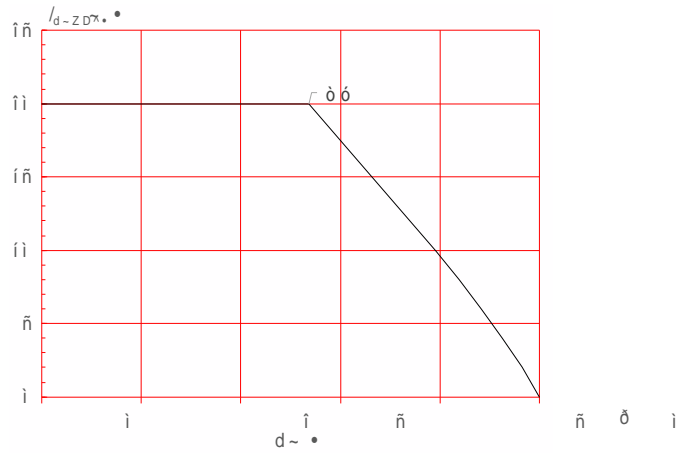


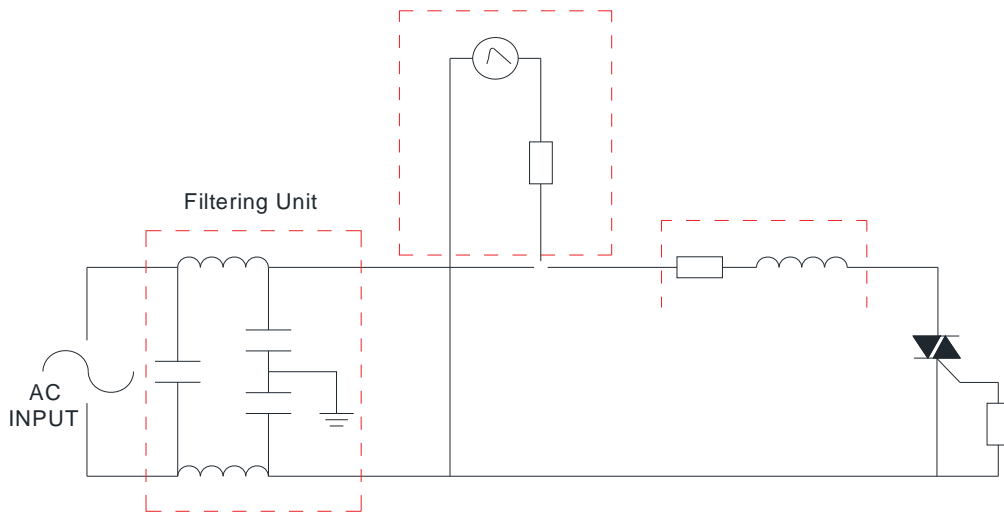
FIG.4: On-state characteristics

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

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