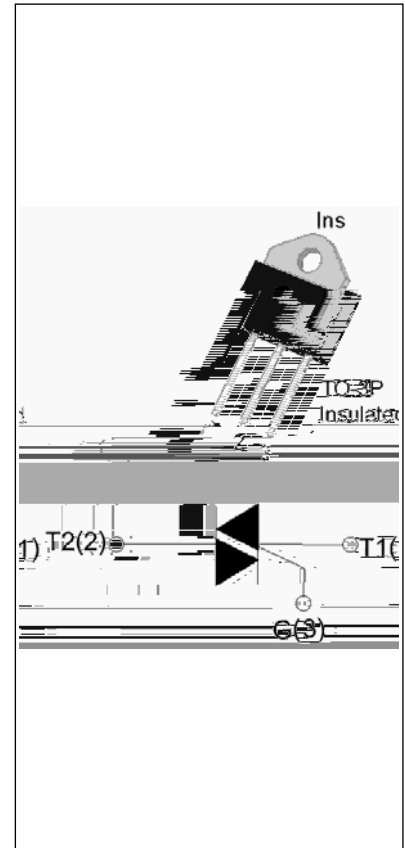




## JST30Z-1200BW 30A TRIAC

Rev.A.1.1

The JST30Z-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. JST30Z-1200BW snubberless triac is especially recommended for use on inductive loads. By using an internal ceramic pad, JST30Z-1200BW provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-3P is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	30	A
$V_{DRM}/V_{RRM}$	1200	V
$I_{GT} / /$	50/50/50	mA

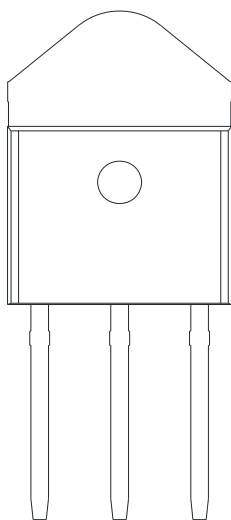
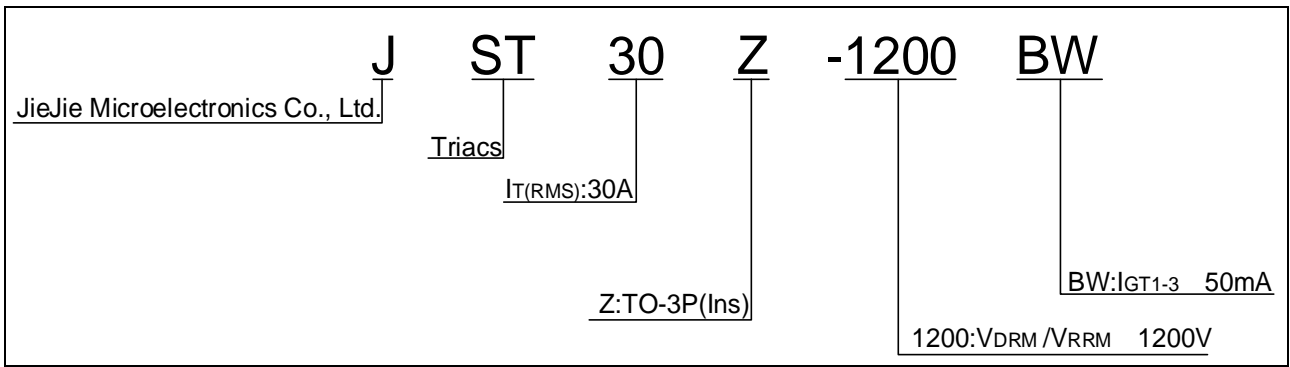
Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-125	
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	1200	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	1200	V
RMS on-state current ( $T_c = 79^\circ\text{C}$ )	$I_{T(RMS)}$	30	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	300	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		330	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	450	$\text{A}^2\text{s}$
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	$\text{A}/\mu\text{s}$
Peak gate current ( $t_p=20\mu\text{s}$ , $T_j=125^\circ\text{C}$ )	$I_{GM}$	4	A

Average gate power dissipation ( $T_j=125$ )	$P_{G(AV)}$	0.5	W
Peak gate power	$P_{GM}$	10	W
Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIG.7)	$V_{pp}$	2.5	kV

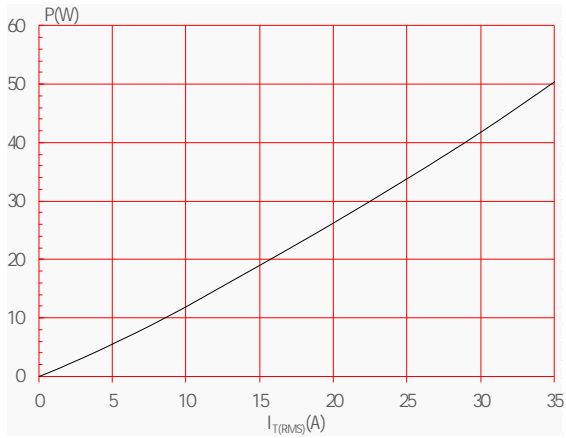
( $T_j=25$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value	Unit	
$I_{GT}$	$V_D=12V R_L=33$	- -	MAX.	50	mA
$V_{GT}$		- -	MAX.	1.3	V
$V_{GD}$	$V_D=V_{DRM} T_j=125$ $R_L=3.3k$	- -	MIN.	0.15	V
$I_L$	$I_G=1.2I_{GT}$	-	MAX.	90	mA
				100	
$I_H$	$I_T=500mA$		MAX.	80	mA
dV/dt	$V_D=800V$ Gate Open $T_j=125$		MIN.	1200	V/ $\mu s$
(dI/dt) <sub>c</sub>	(dV/dt) <sub>c</sub> =20V/ $\mu s$ $T_j=125$		MIN.	25	A/ms
$t_{on}$	$I_G=80mA I_A=400mA I_R=40mA$ $T_j=25$		TYP.	10	$\mu s$
$t_{off}$				70	

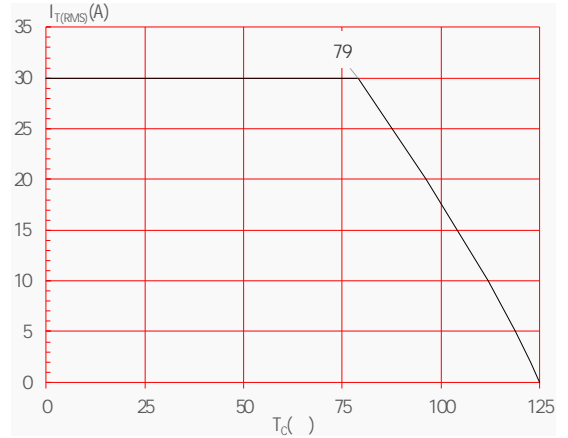
Symbol	Parameter	Value(MAX.)	Unit
$V_{TM}$	$I_{TM}=42A t_p=380\mu s$ $T_j=25$	1.5	V
$V_{TO}$	Threshold voltage $T_j=125$	0.73	V
$R_D$	Dynamic resistance $T_j=125$	25	m
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$ $T_j=25$	10	$\mu A$
$I_{RRM}$	$j=125$	4	mA



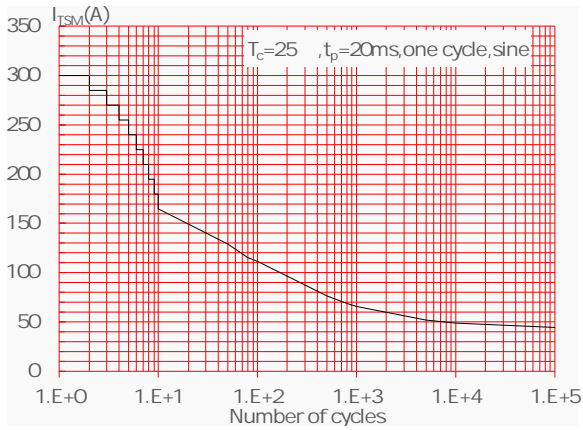
**FIG.1:** Maximum power dissipation versus RMS on-state current



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



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



**FIG.4:** On-state characteristics

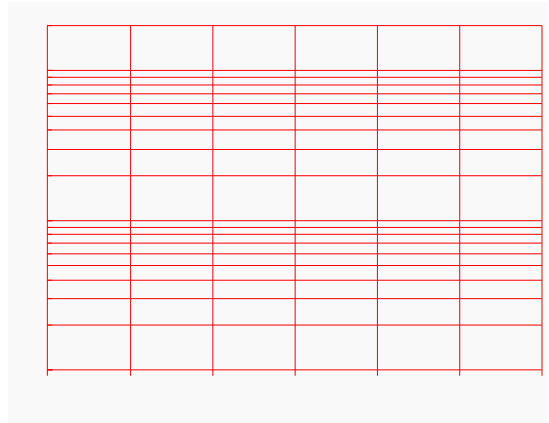
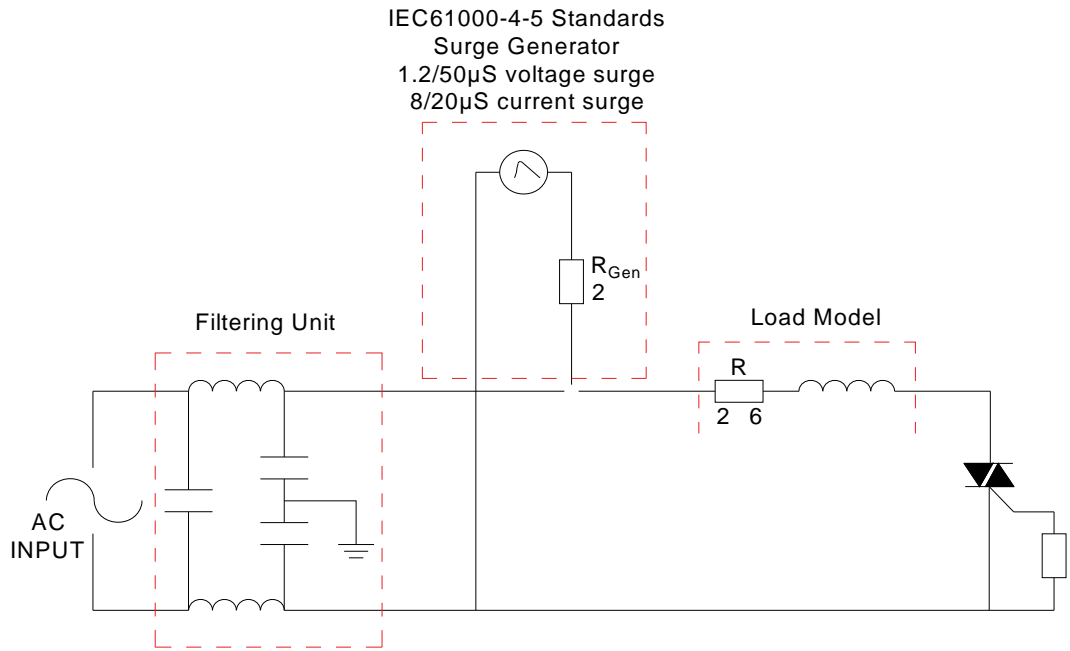


FIG.7 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards







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