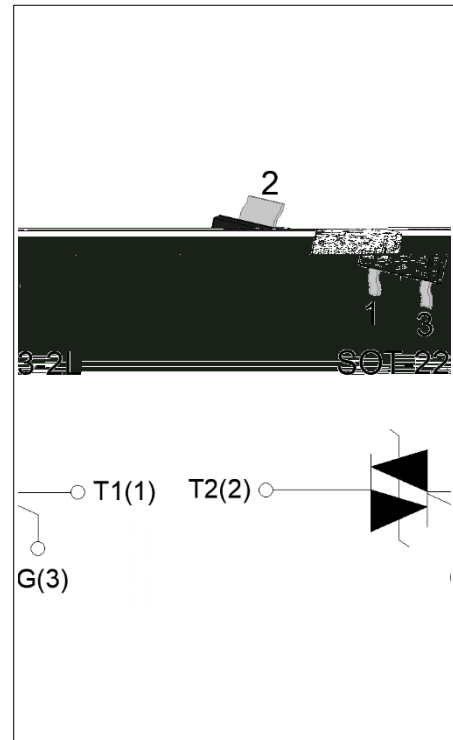




## ACJT210-8W 2A TRIAC

Rev.A.1.0

The ACJT210-8W 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. The ACJT210-8W embeds a TVS structure to absorb the inductive turn-off energy such as those described in the IEC 61000-4-5 standards. Package SOT-223-2L is RoHS compliant.



Symbol	Value	Unit
$I_{T(RMS)}$	2	A
$V_{DRM}/V_{RRM}$	800	V
$I_{GT} / /$	10/10/10	mA

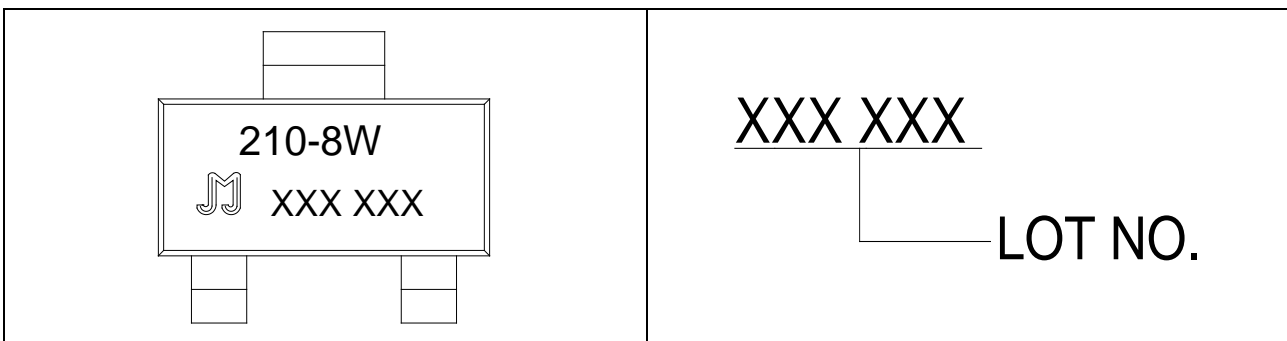
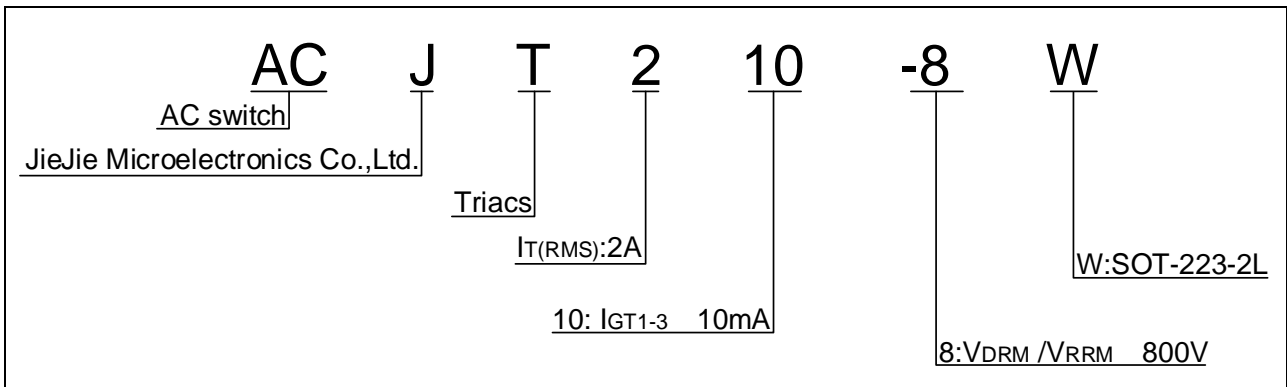
Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	
Operating junction temperature range	$T_j$	-40-125	
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{DRM}$	800	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{RRM}$	800	V
RMS on-state current ( $T_c = 76^\circ\text{C}$ )	$I_{T(RMS)}$	2	A
Non repetitive surge peak on-state current (full cycle, $t_p=20\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I_{TSM}$	25	A
Non repetitive surge peak on-state current (full cycle, $t_p=16.6\text{ms}$ , $T_j=25^\circ\text{C}$ )		27.5	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ , $T_j=25^\circ\text{C}$ )	$I^2t$	3.125	$\text{A}^2\text{s}$
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 ( $t_p=20\mu\text{s}$ , $T_j=125^\circ\text{C}$ )	$I_{GM}$	2	A
Average gate power dissipation ( $T_j=125^\circ\text{C}$ )	$P_{G(AV)}$	0.1	W
Peak gate power	$P_{GM}$	10	W

Peak pulse voltage ( $T_j=25$ ; non-repetitive, off-state; FIG.8)	$V_{pp}$	4.5	kV
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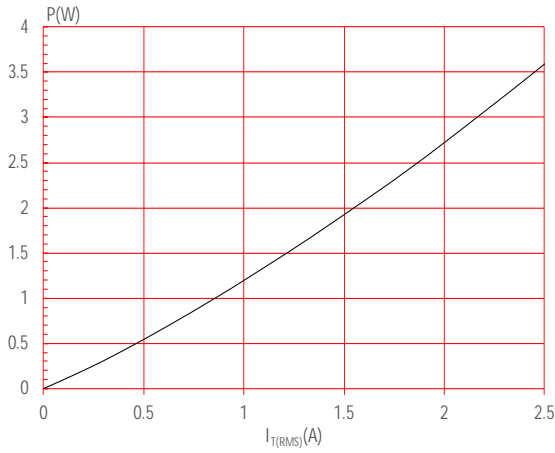
( $T_j=25$  unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12V R_L=33$	- -	MAX.	10	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.	25	mA
				35	
$I_H$	$I_T=100mA$		MAX.	15	mA
$dV/dt$	$V_D=540V$ Gate Open $T_j=125$		MIN.	900	V/ $\mu s$

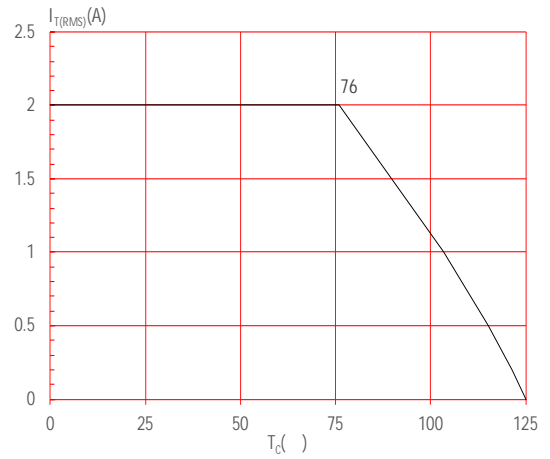
( $dI/dt$ )<sub>c</sub> ( $dV/dt$ )<sub>c</sub>=



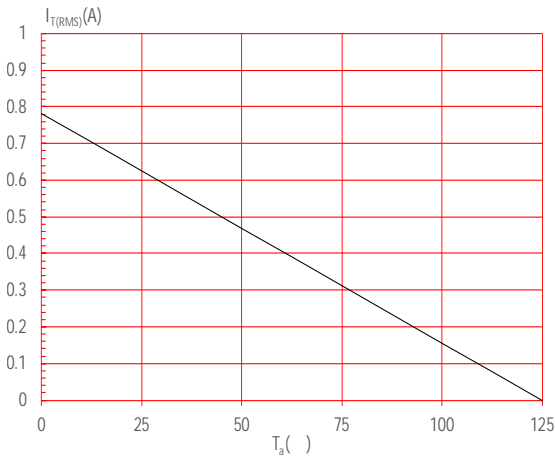
**FIG.1** Maximum power dissipation versus RMS on-state current



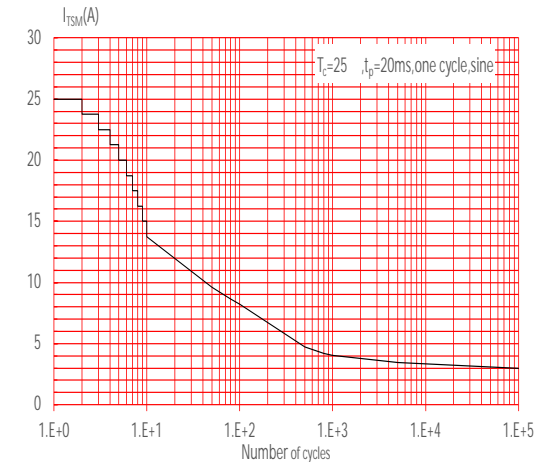
**FIG.2:** RMS on-state current versus case temperature



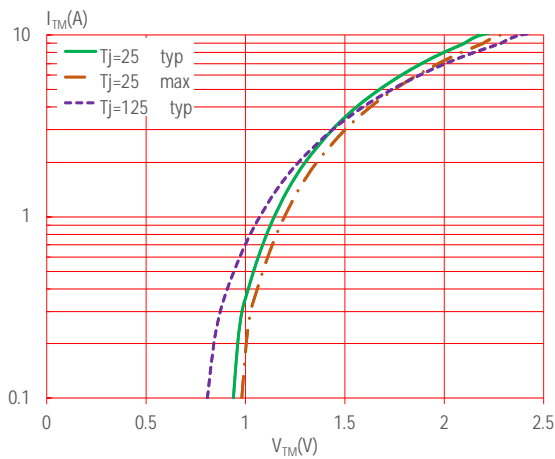
**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4,copper thickness:35μm)(full cycle)



**FIG.4:** Surge peak on-state current versus number of cycles



**FIG.5:** On-state characteristics



**FIG.6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 100\text{A}/\mu\text{s}$ )

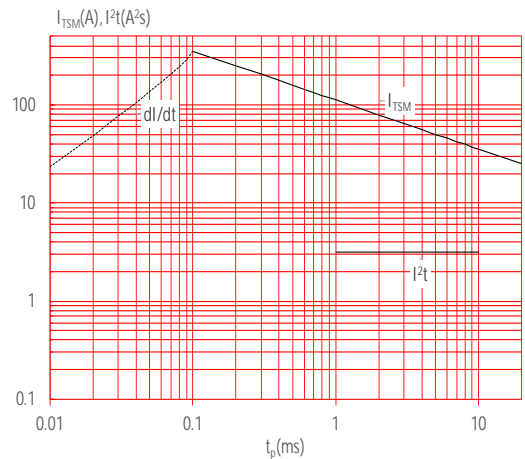


FIG.7: Relative variations of gate trigger current, holding current and latching current versus junction temperature

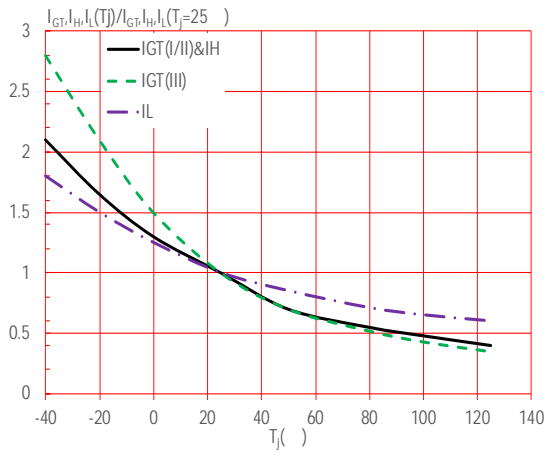
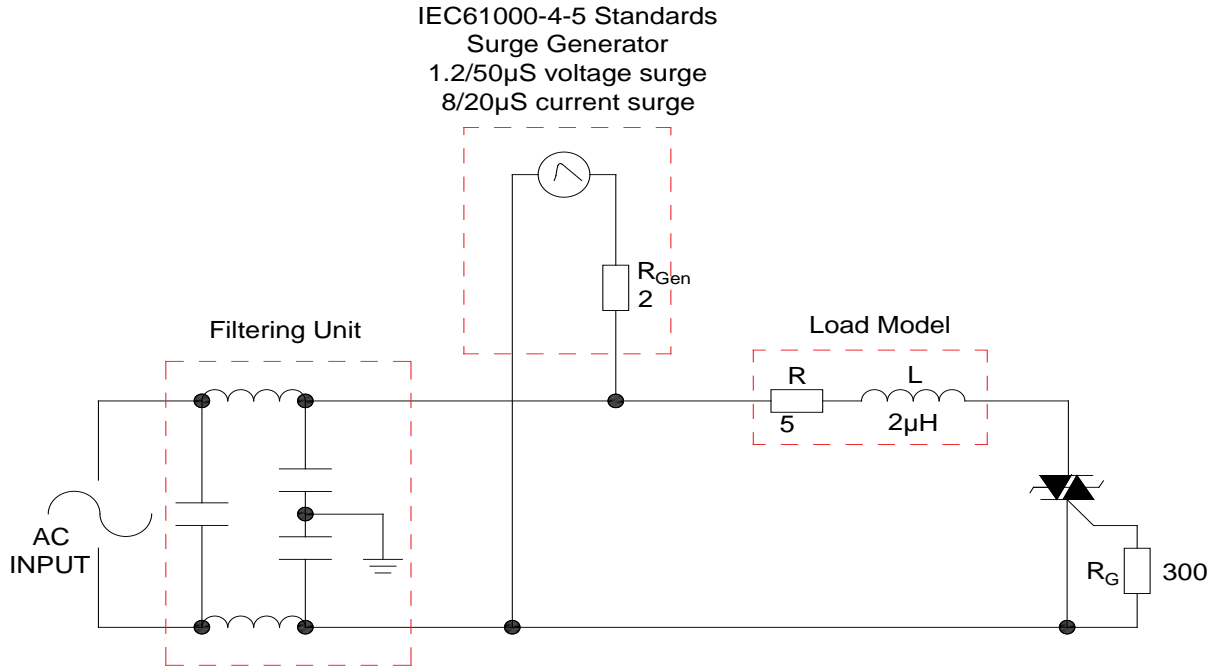
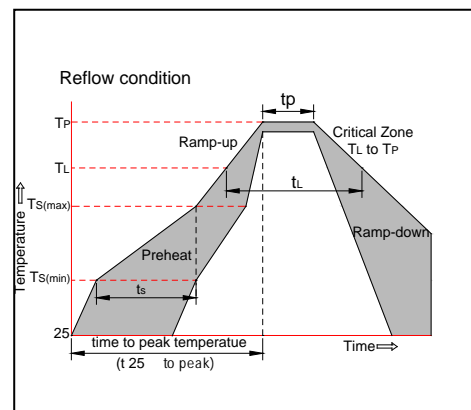


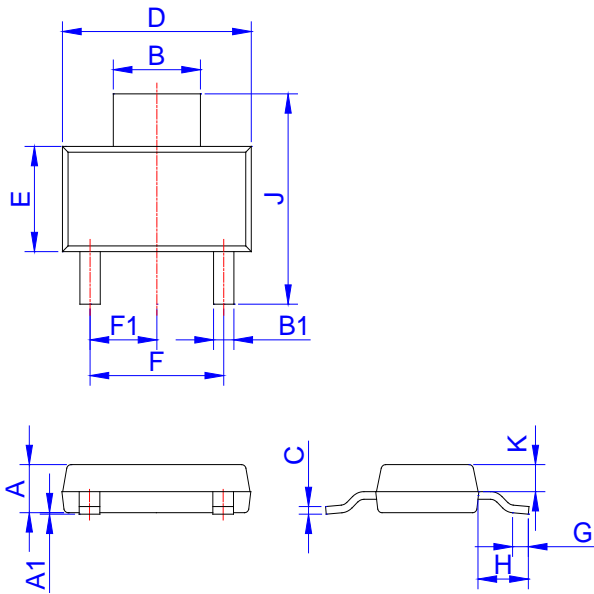
FIG.8 Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



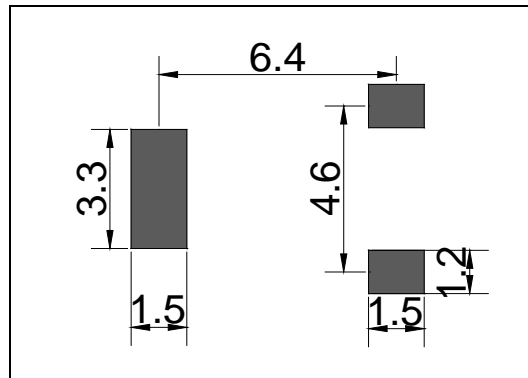
Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150
	-Temperature Max( $T_{s(max)}$ )	+200
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3 /sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3 /sec. Max
Reflow	-Temperature( $T_L$ )(Liquidus)	+217
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)
Time within 5 of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6 /sec. Max
Time 25 to Peak Temp ( $T_p$ )		8 min. Max
Do not exceed		+260



**ACJT210-8W**



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50	1.60	1.80	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.90	3.00	3.10	0.114	0.118	0.122
B1	0.60	0.70	0.80	0.024	0.028	0.031
C	0.22	0.254	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
E	3.30	3.50	3.70	0.130	0.138	0.146
F	4.40		4.80	0.173		0.189
F1	2.20		2.40	0.087		0.094
G	0.50		1.00	0.020		0.039
H	1.50	1.75	2.00	0.059	0.069	0.079
J	6.70	7.00	7.30	0.264	0.276	0.287
K	0.80		1.00	0.031		0.039








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