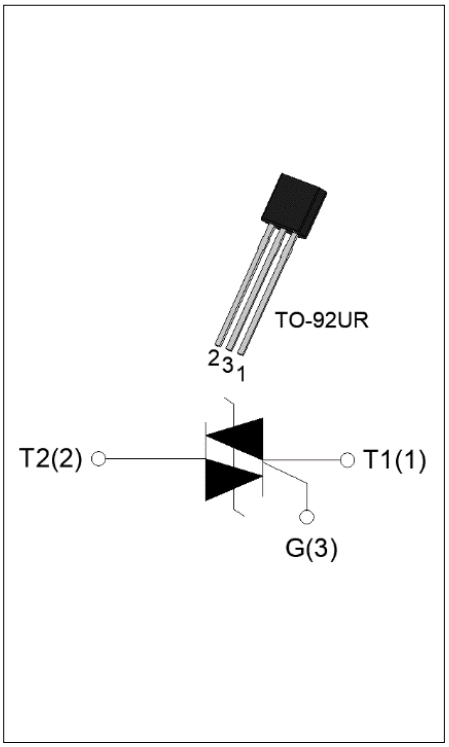
ACJT210-6UR 2A TRIAC

Rev.A.1.0

DESCRIPTION:

The ACJT210-6UR 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 ACJT210-6UR embeds a TVS structure to absorb the inductive turn-off energy such as those described in the IEC 61000-4-5 standards. Package TO-92UR is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	2	A
V_{DRM} /V_{RRM}	600	V
$I_{GT\ I\ /\ II/III}$	10/10/10	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℃)	V_{DRM}	600	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	600	V
RMS on-state current	$I_{T(RMS)}$	2	A
Non repetitive surge peak on-state current (full cycle , t_p=20ms , T_j=25℃)	I_{TSM}	25	A
Non repetitive surge peak on-state current (full cycle , t_p=16.6ms , T_j=25℃)		27.5	
I^2t value for fusing (t_p=10ms , T_j=25℃)	I^2t	3.125	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT} , f=100Hz , T_j=125℃)	dI/dt	100	A/μs
Peak gate current (t_p=20μs , T_j=125℃)	I_{GM}	2	A
Average gate power dissipation (T_j=125℃)	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	10	W

Peak pulse voltage (T_j=25℃; non-repetitive,off-state;FIG.7)	V_{pp}	4.5	kV

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	V_D =12V R_L =33Ω	Ⅰ-Ⅱ-Ⅲ	MAX.	10	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX.	1	V
V_{GD}	V_D =V_{DRM} T_j =125℃ R_L =3.3KΩ	Ⅰ-Ⅱ-Ⅲ	MIN.	0.2	V
I_L	I_G =1.2I_{GT}	Ⅰ-Ⅲ	MAX.	25	mA
		Ⅱ		35	
I_H	I_T =100mA		MAX.	15	mA
dV/dt	V_D=400V Gate Open T_j =125℃		MIN.	1000	V/μs
(dI/dt)c	(dV/dt)c=10V/μs, T_j=125℃		MIN.	3	A/ms
t_{on}	I_G=20mA I_A=200mA I_R=20mA T_j=25℃		TYP.	2.5	μs
t_{off}				25	
V_{CL}	I_{CL}=0.1mA t_p=1ms		MIN.	700	V

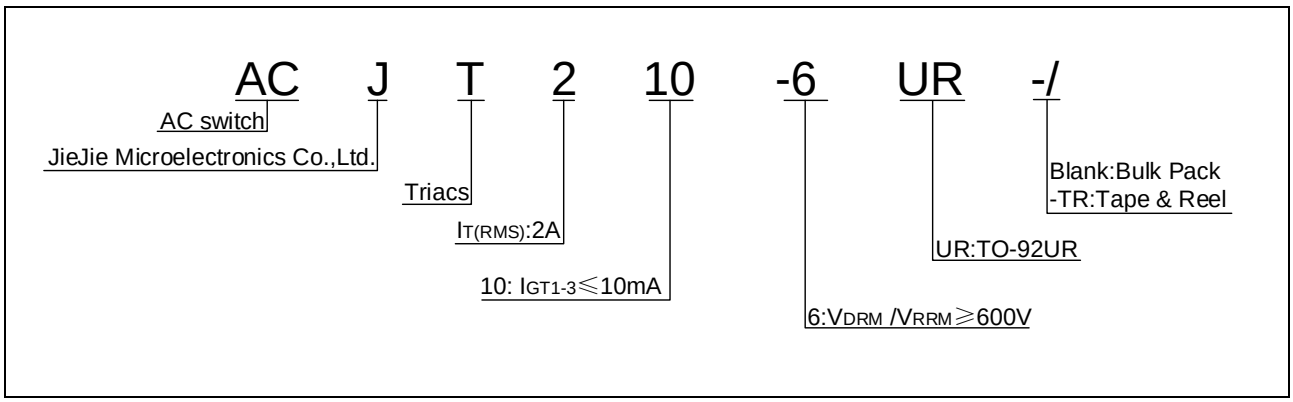
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_{TM} =3A t_p=380μs	T_j=25℃	1.5	V
V_{TO}	Threshold voltage	T_j=125℃	0.79	V
R_D	Dynamic resistance	T_j=125℃	242	mΩ
I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=125℃	0.15	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	60	℃/W
$R_{th(j-a)}$	junction to ambient (AC)	150	℃/W

ORDERING INFORMATION



MARKING

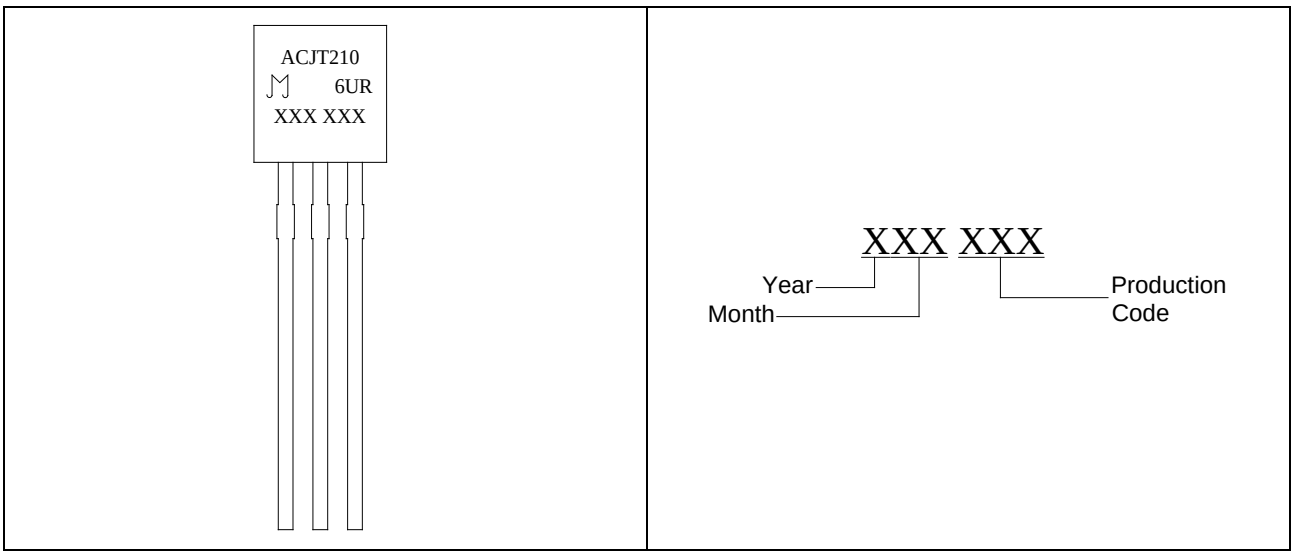


FIG.1 Maximum power dissipation versus RMS on-state current

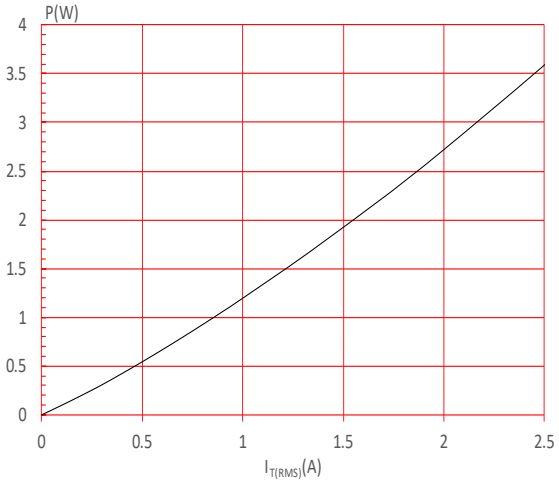


FIG.2: RMS on-state current versus case temperature

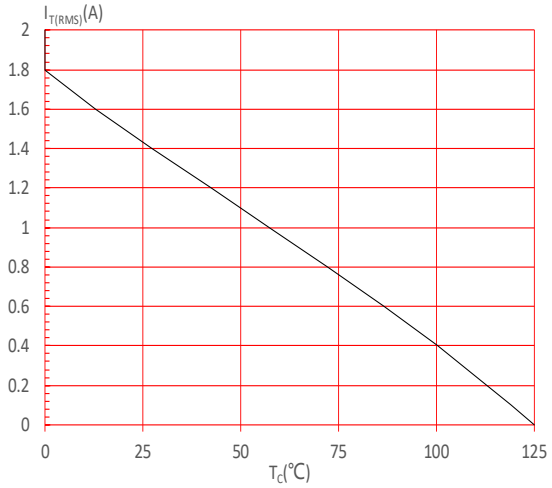


FIG.3: Surge peak on-state current versus number of cycles

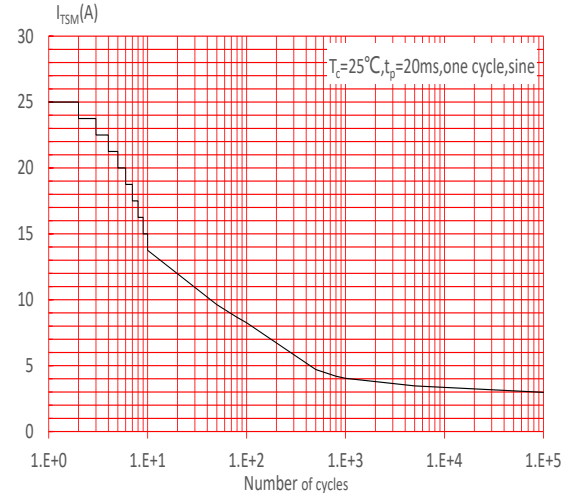


FIG.4: On-state characteristics

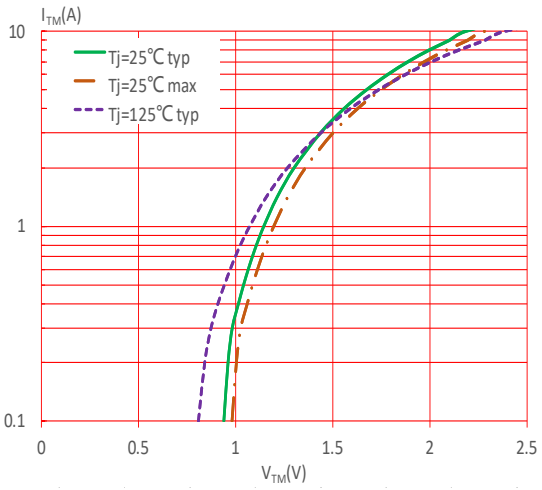


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p<20ms, and corresponding value of I^2t (dI/dt<100A/μs)

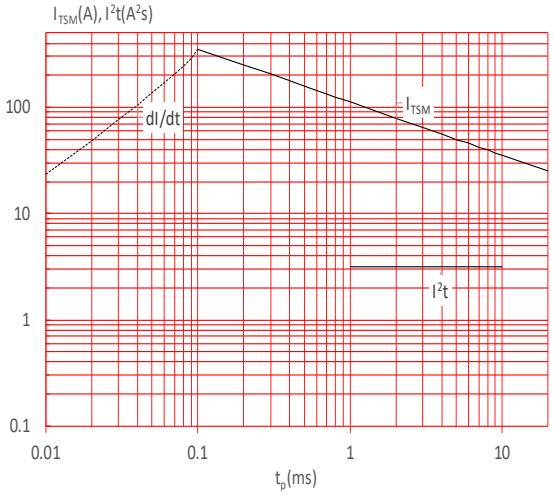


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

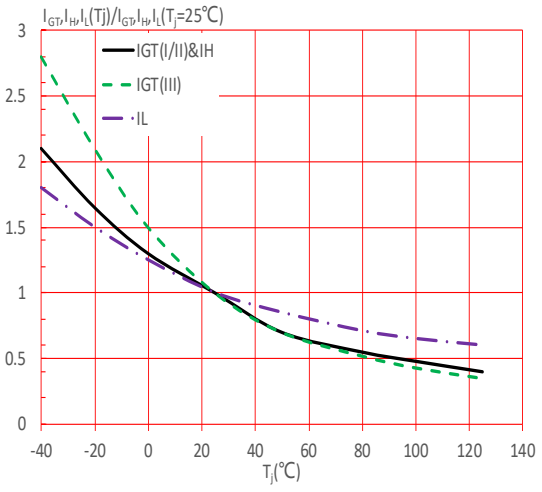
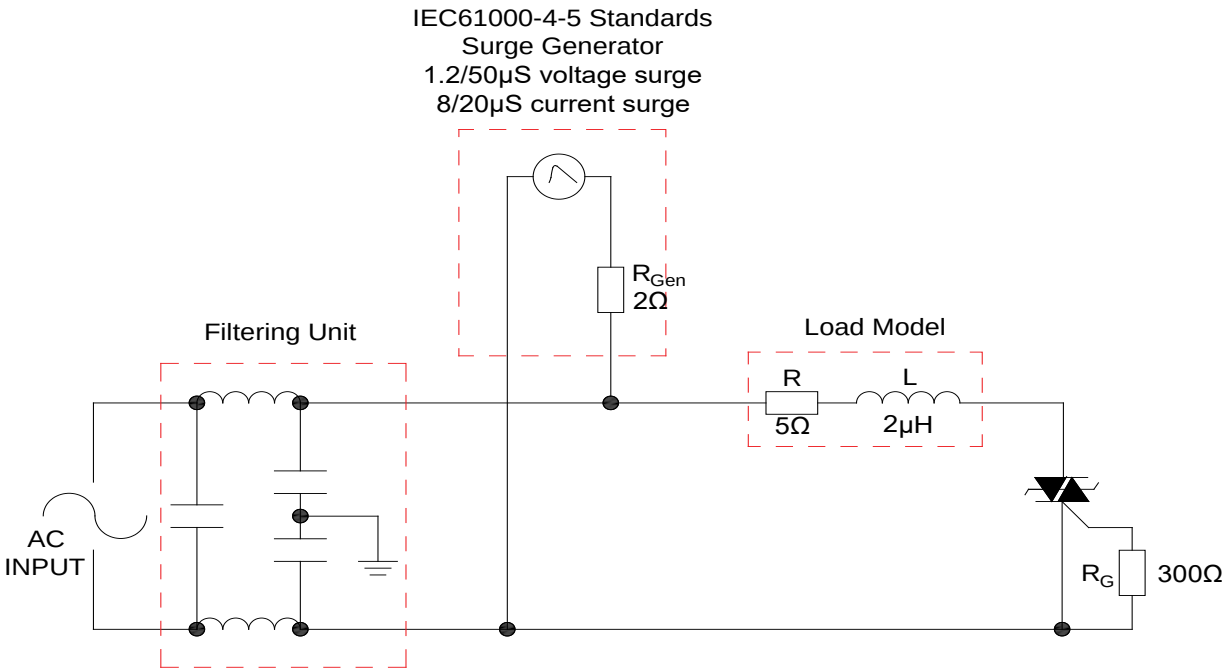


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SHAPING AND SOLDERING PARAMETERS

Refer to《Instructions for installation of plastic-sealed in-line power devices》released by JieJie

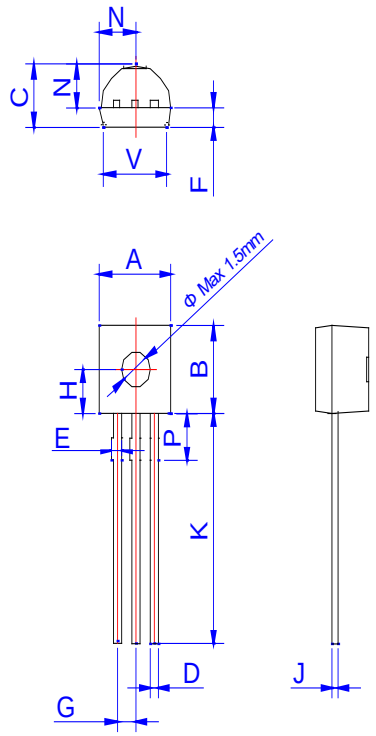
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
ACJT210-6UR	600	10	TO-92UR	1,000	Bulk Pack
ACJT210-6UR-TR				2,000	Tape & Reel

Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated

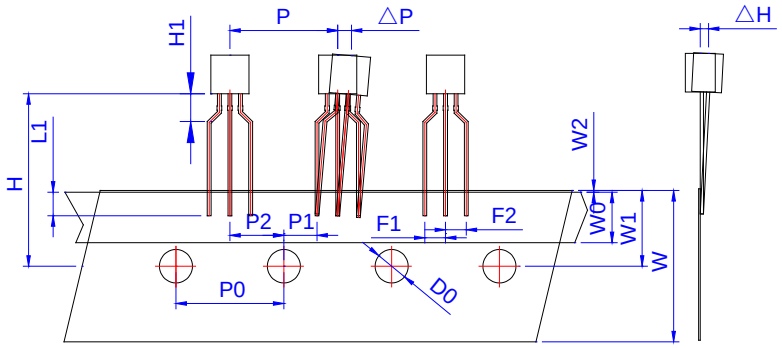
PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.50		0.70	0.020		0.028
F	1.10		1.30	0.043		0.051
G	1.10		1.40	0.043		0.055
H	2.20		2.40	0.087		0.094
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	4.10		4.50	0.161		0.177

DELIVERY MODE

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92UR	Bulk Pack	1,000	10,000	50,000



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
P	12.40	12.70	13.00	0.488	0.500	0.512
P0	12.40	12.70	13.00	0.488	0.500	0.512
P1	3.55	3.85	4.15	0.140	0.152	0.163
P2	5.95	6.35	6.75	0.233	0.250	0.265
△P	-1.0	0	1.0	-0.039	0	0.039
F1、F2	2.30	2.50	2.70	0.090	0.098	0.106
F1-F2	-0.1	0	0.1	-0.004	0	0.004
W	17.50	18.00	19.00	0.689	0.709	0.748
W0	5.50	6.00	6.50	0.217	0.236	0.256
W1	8.50	9.00	9.50	0.335	0.354	0.374
W2			1.0			0.039
D0	3.80	4.0	4.20	0.150	0.157	0.165
△H	-1.0	0	1.0	-0.039	0	0.039
L1	2.5			0.098		
H	18.0	19.0	20.0	0.709	0.748	0.787
H1			2.70			0.106

PACKAGE	OUTLINE	REEL (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92UR	Tape & Reel	/	2,000	20,000

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