

ACJT810-10C 8A TRIAC

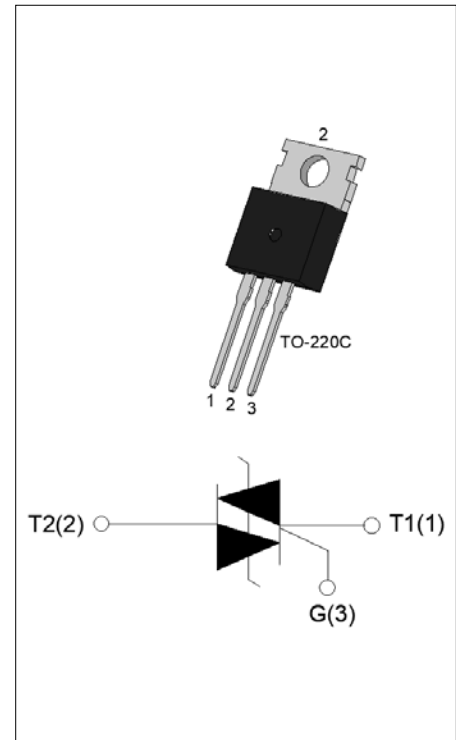
Rev.A.1.1

DESCRIPTION:

The ACJT810-10C 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 ACJT810-10C embeds a TVS structure to absorb the inductive turn-off energy such as those described in the IEC 61000-4-5 standards. Package TO-220C is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	8	A
V_{DRM}/V_{RRM}	1000	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	°C
Operating junction temperature range	T_j	-40-125	°C
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)	V_{DRM}	1000	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	1000	V
RMS on-state current ($T_c \leq 109^{\circ}C$)	$I_{T(RMS)}$	8	A
Non repetitive surge peak on-state current (full cycle , $t_p=20ms$, $T_j=25^{\circ}C$)	I_{TSM}	80	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$, $T_j=25^{\circ}C$)		88	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	32	A ² s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}$, $f=100Hz$, $T_j=125^{\circ}C$)	di/dt	100	A/ μs
Peak gate current ($t_p=20\mu s$, $T_j=125^{\circ}C$)	I_{GM}	4	A
Average gate power dissipation ($T_j=125^{\circ}C$)	$P_{G(AV)}$	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}	2	kV
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ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	I - II -III	MAX.	10	mA
V_{GT}		I - II -III	MAX.	1	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_L=3.3\text{k}\Omega$	I - II -III	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I -III	MAX.	25	mA
		II		30	
I_H	$I_T=100\text{mA}$		MAX.	15	mA
dV/dt	$V_D=670\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	300	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=10\text{V}/\mu\text{s}$, $T_j=125^{\circ}\text{C}$		MIN.	3	A/ms
t_{on}	$I_G=20\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	4	μs
t_{off}				50	
V_{CL}	$I_{CL}=0.1\text{mA}$ $t_p=1\text{ms}$		MIN.	1050	V

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=10\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.4	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.78	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	38	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	8	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.8	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	1.5	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

AC	J	T	8	10	-10	C
AC switch		Triacs				C:TO-220C
JieJie Microelectronics Co., Ltd.		$I_{T(RMS)}:8A$				
		$10: I_{GT1-3} \leq 10mA$				$10: V_{DRM} / V_{RRM} \geq 1000V$

MARKING

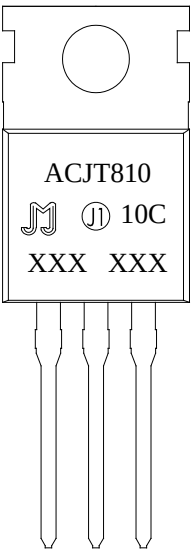
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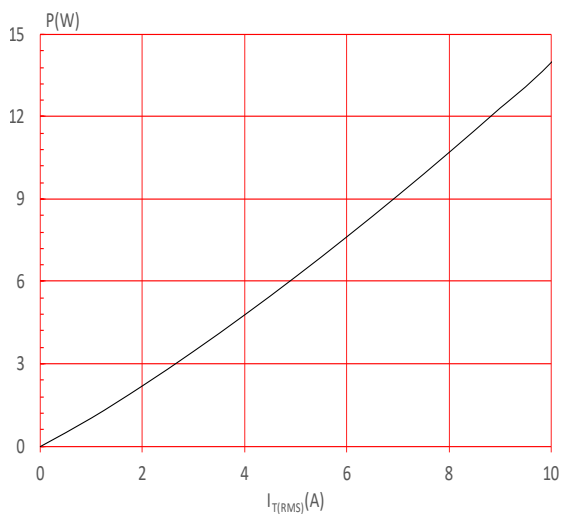
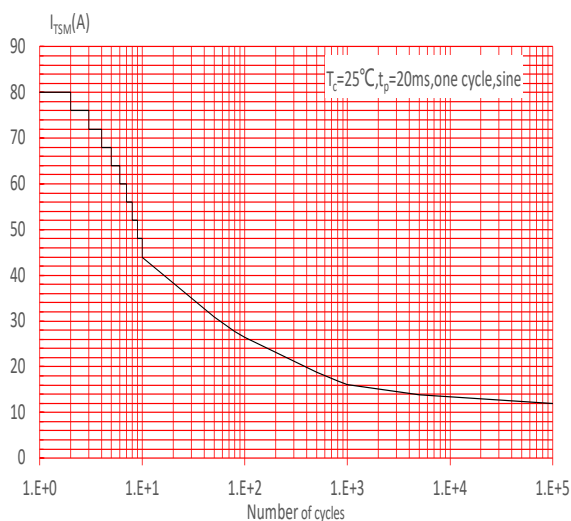
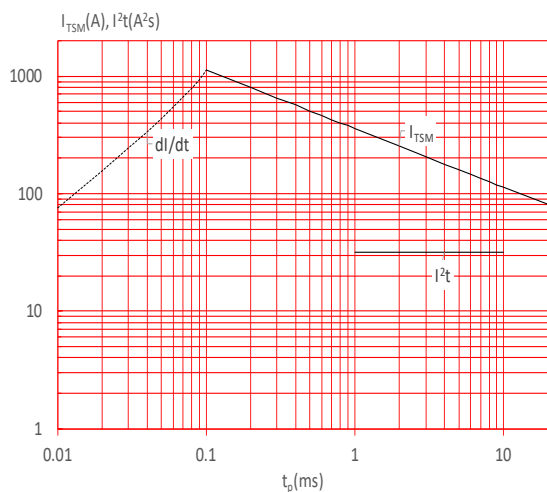
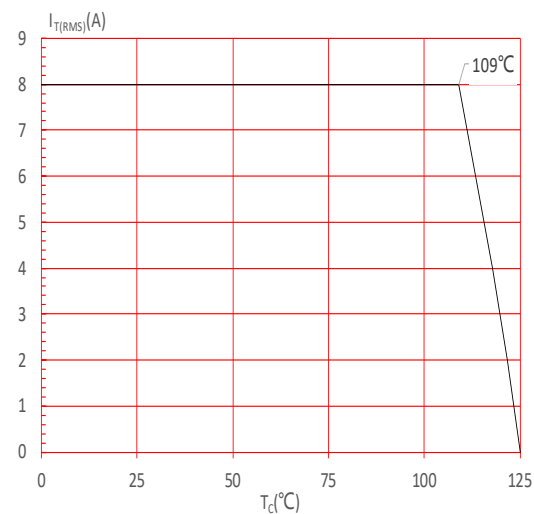
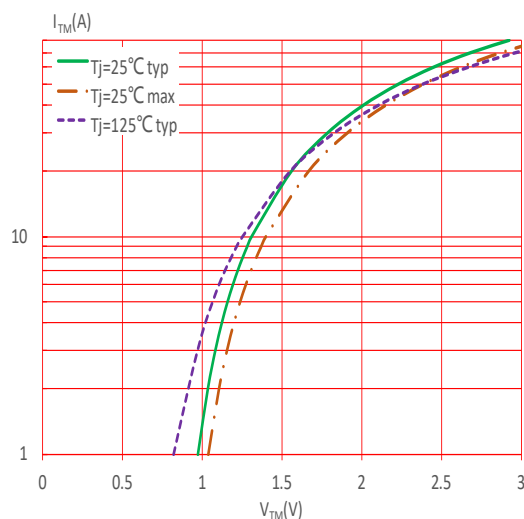
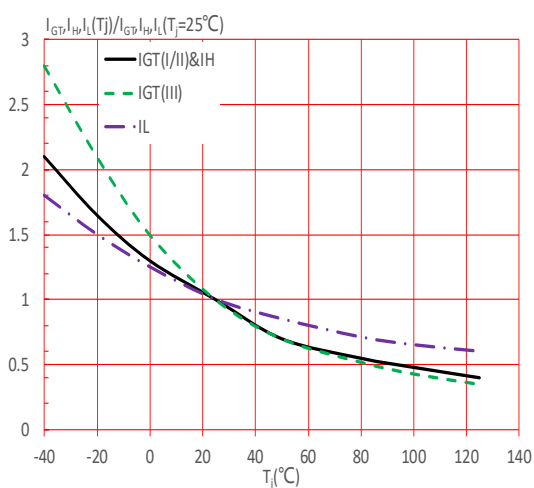
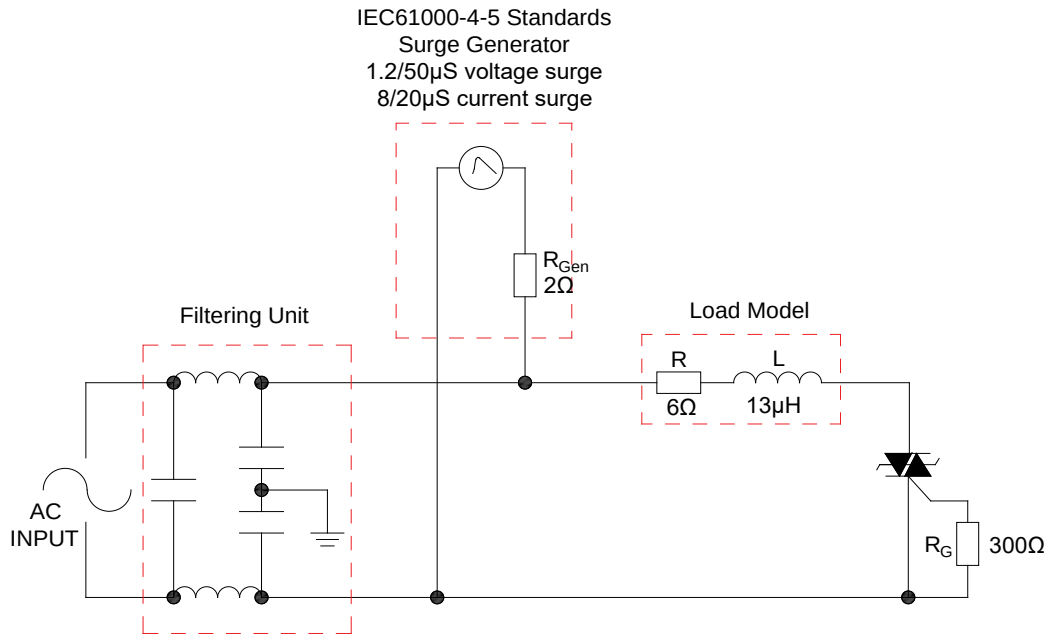
FIG.1: Maximum power dissipation versus RMS on-state current

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

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

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

FIG.4: On-state characteristics

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



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics

ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
ACJT810-10C	1000	10	TO-220C	50	Tube

Document Revision History

Date	Revision	Changes
Apr.13, 2023	A.1.0	Last updated
Oct.15, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin plug, showing three views: a top view, a front view, and a side view. The top view shows a rectangular plug with a central circular hole and a smaller circular hole below it. The front view shows the plug with three pins and dimensions: E (total width), L (width of the top section), I (width of the top section), H (total height), L1 (height of the top section), K (height of the middle section), L2 (width of the middle section), B (width of the bottom section), G (width of the bottom section), M (width of the bottom section), and L3 (height of the bottom section). The side view shows the plug with dimensions: A (width of the top section), C2 (width of the top section), E (total width), D (height of the middle section), C3 (width of the bottom section), and C (width of the bottom section). A note indicates the hole diameter: $\varnothing 3.45-3.65\text{mm}$.

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.70		0.90	0.028		0.035
C	0.45		0.60	0.018		0.024
C2	1.25		1.35	0.049		0.053
C3	2.20		2.60	0.087		0.102
D	8.90		9.90	0.350		0.390
E	9.90		10.30	0.390		0.406
E1	0.80		1.20	0.031		0.047
F	6.30		6.90	0.248		0.272
G	2.40		2.70	0.094		0.106
H	28.00		29.80	1.102		1.173
H1	2.15		2.55	0.085		0.100
I	4.70		5.10	0.185		0.201
K	9.90		10.30	0.390		0.406
L1	2.70		3.30	0.106		0.130
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
M	4.80		5.20	0.189		0.205

Technical drawing of a 3D printed part, showing three views: top, front, and side views. The dimensions are as follows:

- Top View:**
 - Overall width: 520 ± 0.5
 - Overall height: 530 ± 0.5
 - Printing area dimensions: 80 (width) and 5.5 (height).
 - Distance from the left edge to the printing area: $520 \pm 0.5 - 80 = 440$.
 - Distance from the top edge to the printing area: $530 \pm 0.5 - 5.5 = 524.5$.
 - Distance from the right edge to the printing area: 5 .
 - Distance from the bottom edge to the printing area: 5.5 .
 - Distance from the left edge to the center of the printing area: 260 .
 - Distance from the top edge to the center of the printing area: 262.5 .
 - Distance from the right edge to the center of the printing area: 2.5 .
 - Distance from the bottom edge to the center of the printing area: 2.75 .
- Front View:**
 - Overall width: 520 ± 0.5
 - Overall height: 530 ± 0.5
 - Printing area dimensions: 80 (width) and 5.5 (height).
 - Distance from the left edge to the printing area: $520 \pm 0.5 - 80 = 440$.
 - Distance from the top edge to the printing area: $530 \pm 0.5 - 5.5 = 524.5$.
 - Distance from the right edge to the printing area: 5 .
 - Distance from the bottom edge to the printing area: 5.5 .
 - Distance from the left edge to the center of the printing area: 260 .
 - Distance from the top edge to the center of the printing area: 262.5 .
 - Distance from the right edge to the center of the printing area: 2.5 .
 - Distance from the bottom edge to the center of the printing area: 2.75 .
- Side View:**
 - Overall width: 7 ± 0.2
 - Overall height: 33
 - Printing area dimensions: 3.8 (width) and 0.6 (height).
 - Distance from the left edge to the printing area: 2.4 .
 - Distance from the top edge to the printing area: 3.8 .
 - Distance from the right edge to the printing area: 0.6 .
 - Distance from the bottom edge to the printing area: 18 .
 - Distance from the left edge to the center of the printing area: 1.9 .
 - Distance from the top edge to the center of the printing area: 1.9 .
 - Distance from the right edge to the center of the printing area: 0.3 .
 - Distance from the bottom edge to the center of the printing area: 9 .

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220C	TUBE	50	1,000	5,000

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