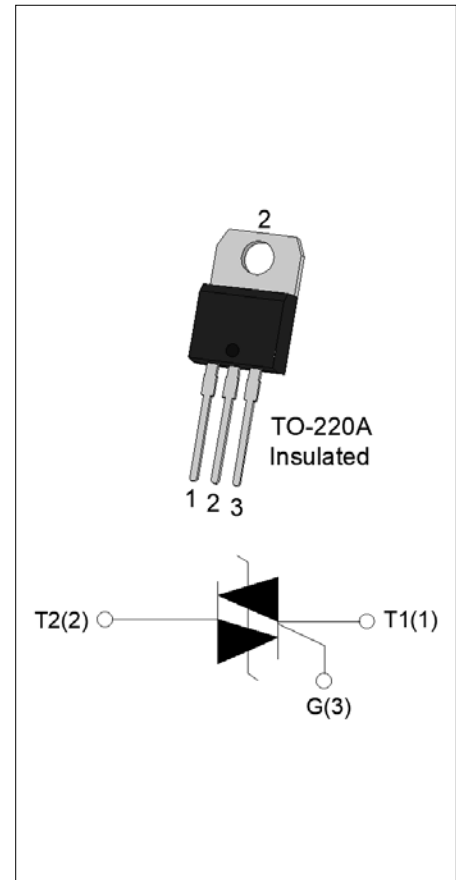


ACJT425-8A 4A TRIAC

Rev.A.1.1

DESCRIPTION:

The ACJT425-8A 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 ACJT425-8A embeds a TVS structure to absorb the inductive turn-off energy such as those described in the IEC 61000-4-5 standards. By using an internal ceramic pad, ACJT425-8A provides a rated insulation voltage of 2500 VRMS, complying with UL standards (File ref: E252906). Package TO-220A is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	800	V
$I_{GT\ I/II/III}$	25/25/25	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 ($T_j=25^\circ\text{C}$)	V_{DRM}	800	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{RRM}	800	V
RMS on-state current ($T_c \leq 106^\circ\text{C}$)	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle , $t_p=20\text{ms}$, $T_j=25^\circ\text{C}$)	I_{TSM}	40	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6\text{ms}$, $T_j=25^\circ\text{C}$)		44	
I^2t value for fusing ($t_p=10\text{ms}$, $T_j=25^\circ\text{C}$)	I^2t	8	A^2s
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 ($T_j=125^{\circ}\text{C}$)	$P_{G(AV)}$	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}	3.5	kV

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.	25	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.	40	mA
		II		60	
I_H	$I_T=100\text{mA}$		MAX.	35	mA
dV/dt	$V_D=540\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	2500	$\text{V}/\mu\text{s}$
$(dI/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}$, $T_j=125^{\circ}\text{C}$		MIN.	8	A/ms
t_{on}	$I_G=40\text{mA}$ $I_A=200\text{mA}$ $I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	3	μs
t_{off}				30	
V_{CL}	$I_{CL}=0.1\text{mA}$ $t_p=1\text{ms}$		MIN.	850	V

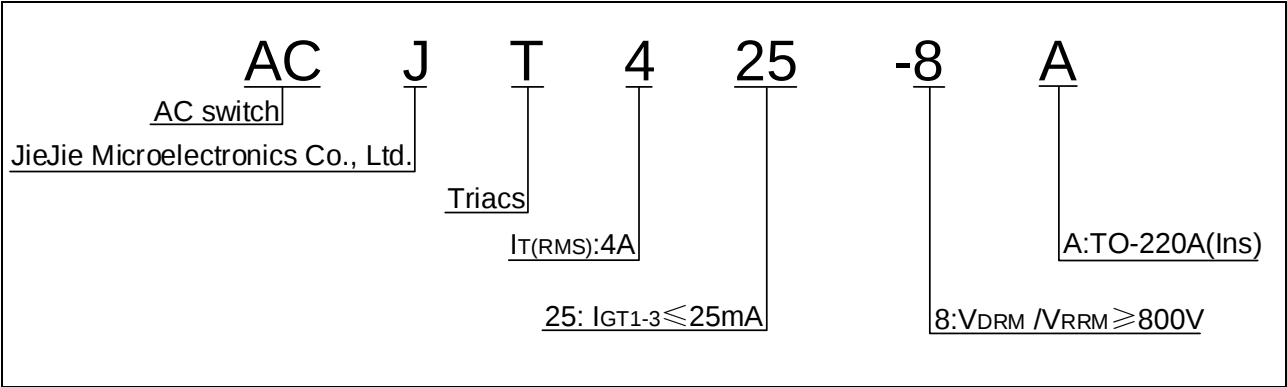
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=5.6\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.55	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.73	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	171	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.25	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	3.3	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

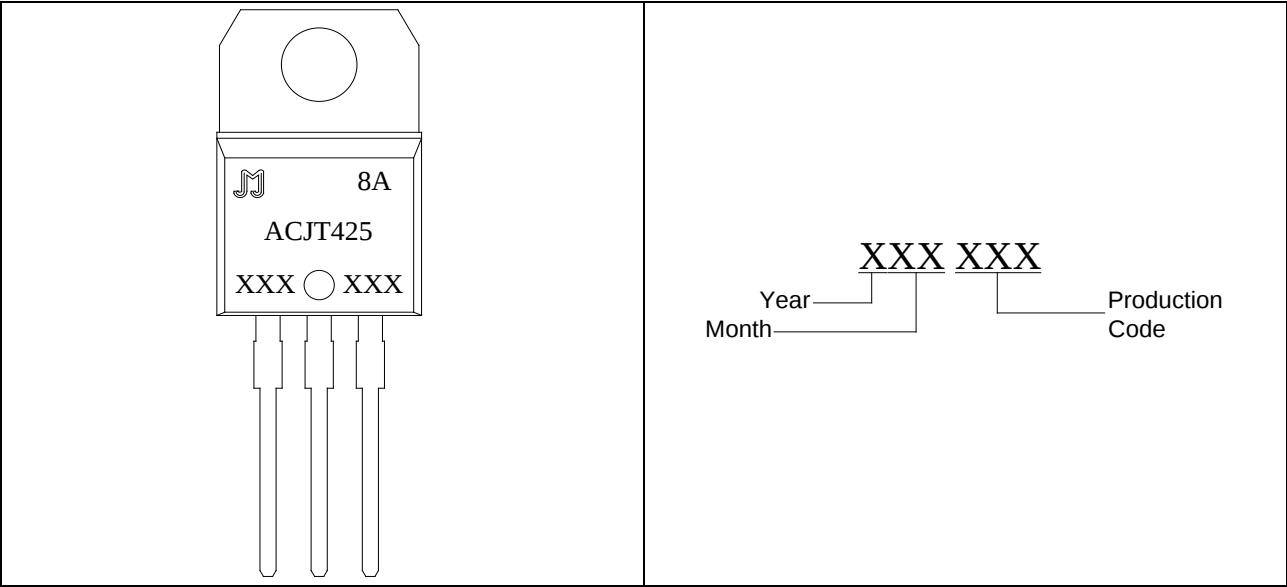


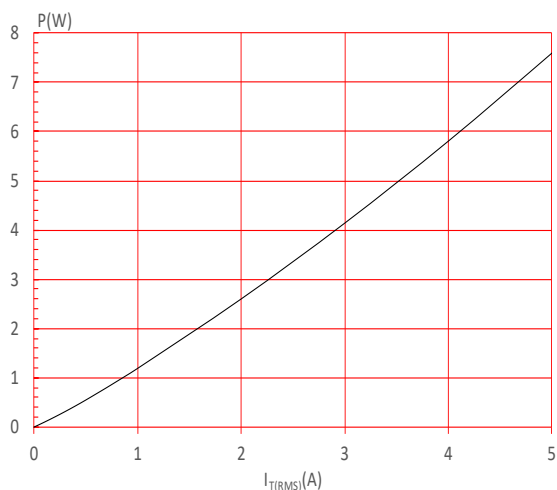
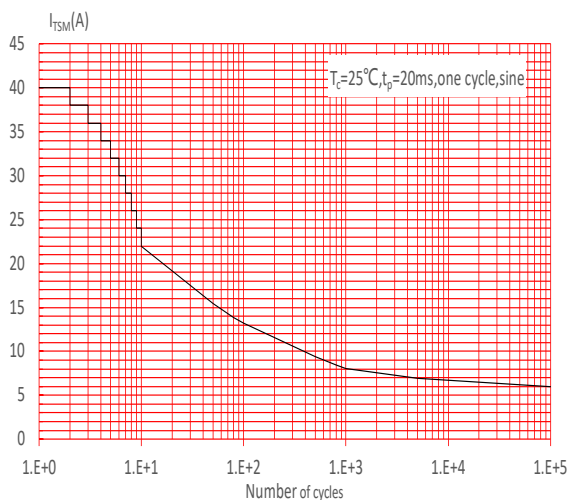
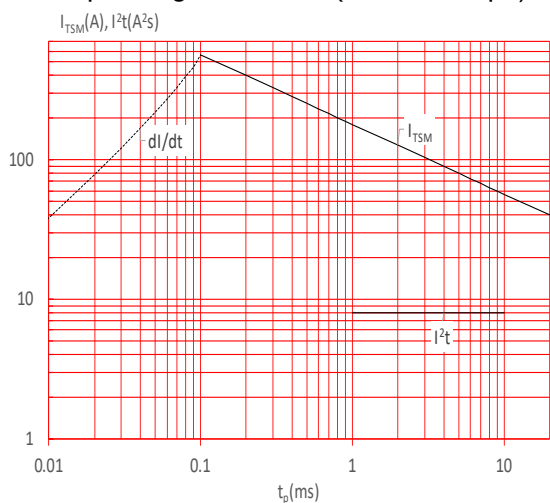
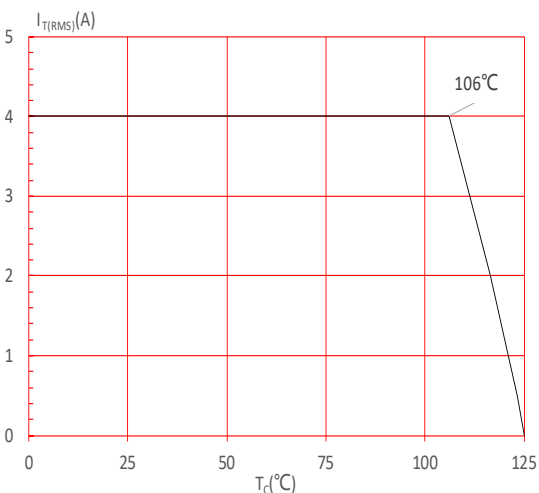
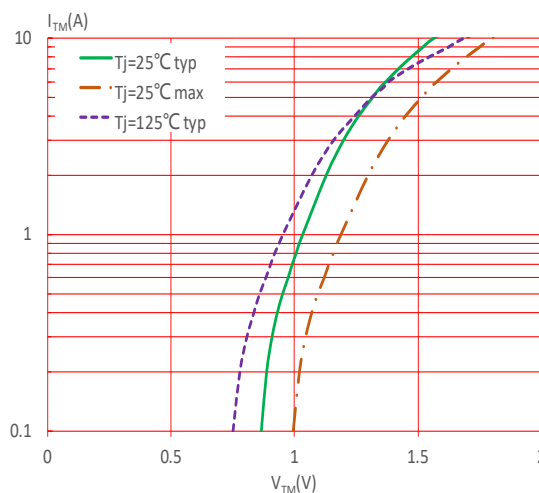
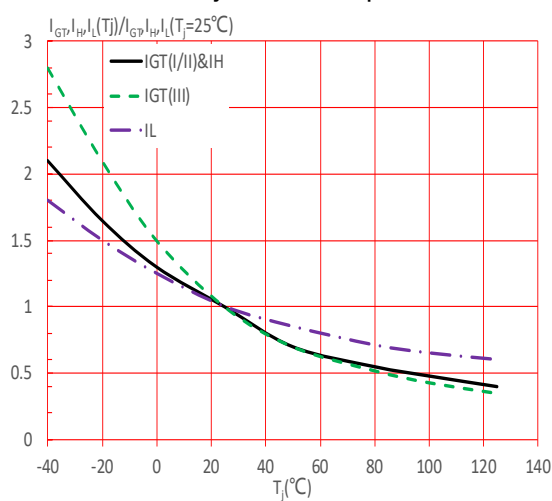
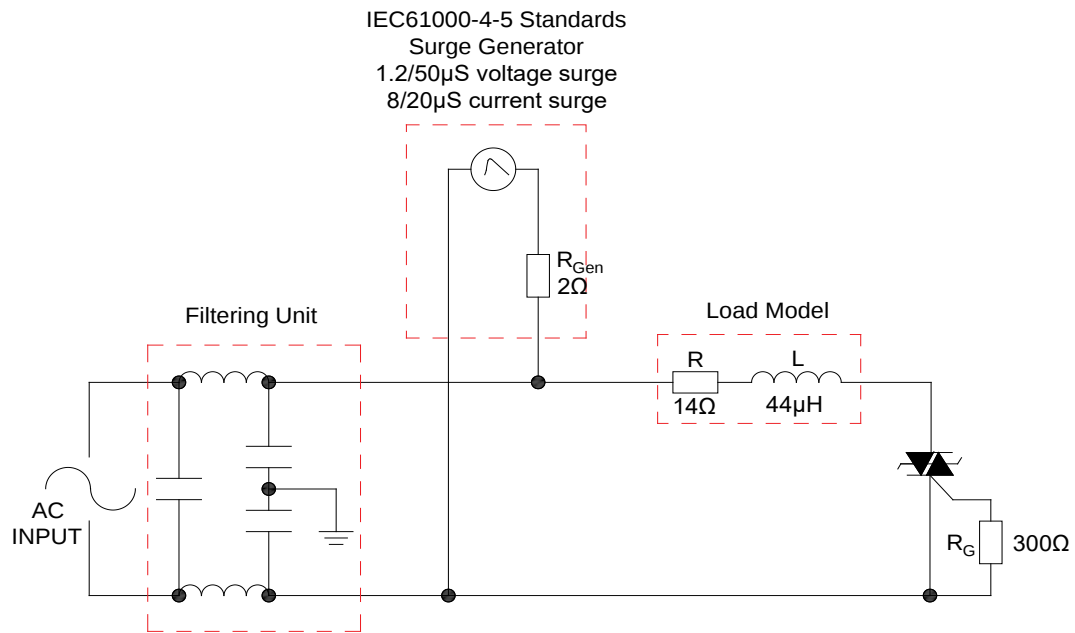
FIG.1: Maximum power dissipation versus RMS on-state current

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
ACJT425-8A	800	25	TO-220A(Ins)	50	Tube

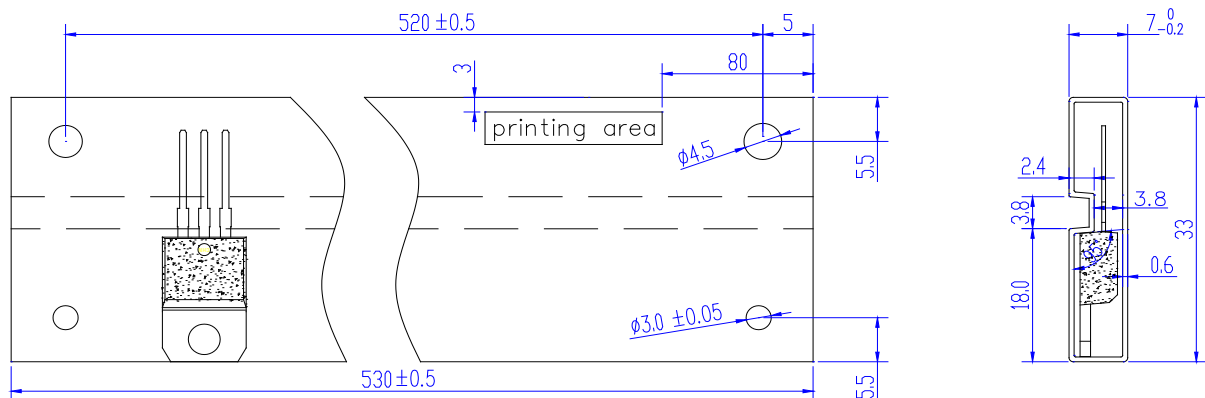
Document Revision History

Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Oct.13, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

Technical drawing of a 3-pin connector. The drawing includes a top view, a front view, and a side view. Dimensions are labeled as follows:

- Top View:** Shows the overall width E , the distance between pins I , and the pin diameter $\phi 3.7-3.9\text{mm}$.
- Front View:** Shows the total height H , the distance from the top of the housing to the top of the pins $L1$, the distance from the top of the pins to the bottom of the housing J , the distance from the top of the pins to the bottom of the pins $L2$, the distance from the bottom of the pins to the bottom of the housing B , the distance from the bottom of the pins to the bottom of the housing G , and the distance from the bottom of the pins to the bottom of the housing K .
- Side View:** Shows the distance from the top of the housing to the top of the pins A , the distance from the top of the pins to the bottom of the housing $C2$, the distance from the top of the pins to the bottom of the pins F , the distance from the top of the pins to the bottom of the pins D , the distance from the top of the pins to the bottom of the pins $C3$, and the distance from the top of the pins to the bottom of the pins C .
- Bottom View:** Shows the distance from the bottom of the pins to the bottom of the housing $E1$ and the distance from the bottom of the pins to the bottom of the housing $H1$.

DELIVERY MODE



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