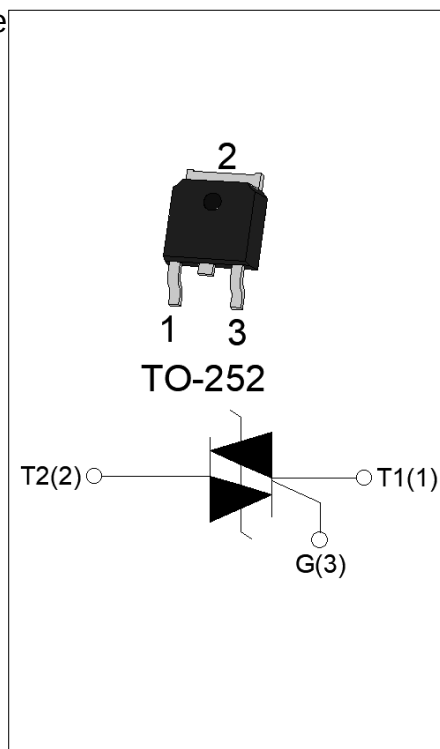


ACJT04K-1000CW 4A TRIAC

Rev.A.1.1

DESCRIPTION:

The ACJT04K-1000CW 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 ACJT04K-1000CW embeds a TVS structure to absorb the inductive turn-off energy such as those described in the IEC 61000-4-5 standards. Package TO-252 is RoHS compliant.


MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	1000	V
$I_{GT\ I/II/III}$	35/35/35	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 ($T_c \leq 100^{\circ}C$)	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle , $t_p=20ms$, $T_j=25^{\circ}C$)	I_{TSM}	40	A
Non repetitive surge peak on-state current (full cycle , $t_p=16.6ms$, $T_j=25^{\circ}C$)		44	
I^2t value for fusing ($t_p=10ms$, $T_j=25^{\circ}C$)	I^2t	8	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.8)	V_{pp}	3.75	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.	35	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	$V_D=670\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	1600	V/ μs
$(dI/dt)_c$	$(dV/dt)_c=20\text{V}/\mu\text{s}$, $T_j=125^{\circ}\text{C}$		MIN.	10	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.	5	μs
t_{off}				70	
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}	$I_{TM}=6\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.88	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	82	$\text{m}\Omega$
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	8	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.7	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	4.5	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (AC)	120	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

AC	J	T	04	K	-1000	CW	-/
AC switch	JieJie Microelectronics Co., Ltd.	Triacs	$I_T(RMS):4A$	K:TO-252	$1000:V_{DRM}/V_{RRM} \geq 1000V$	CW: $I_{GT1-3} \leq 35mA$	Blank:Tube -TR:Tape & Reel

MARKING

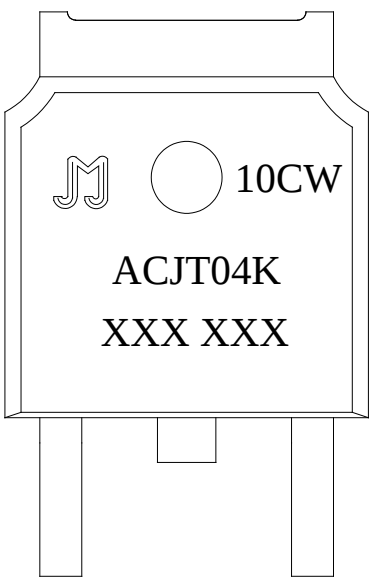
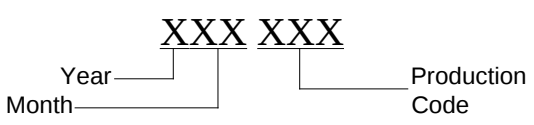
	
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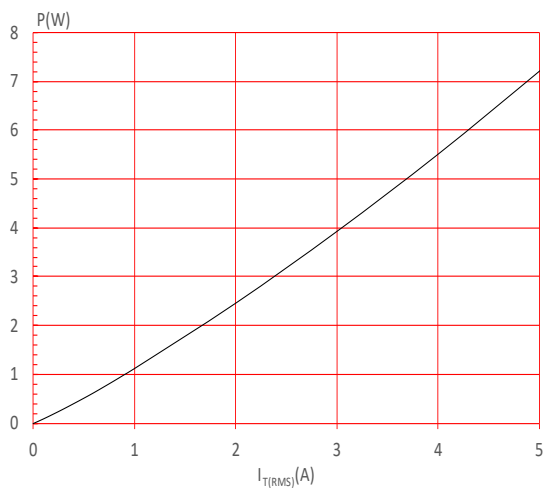
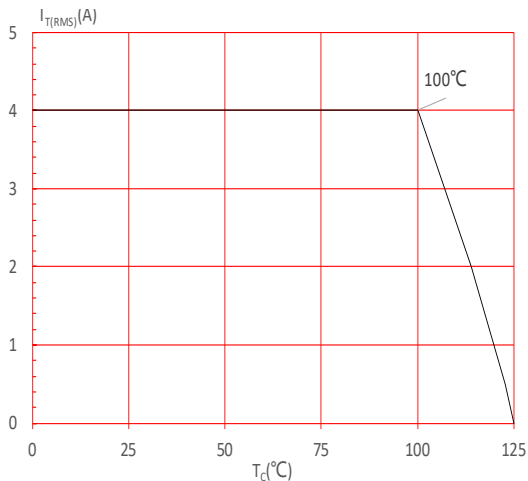
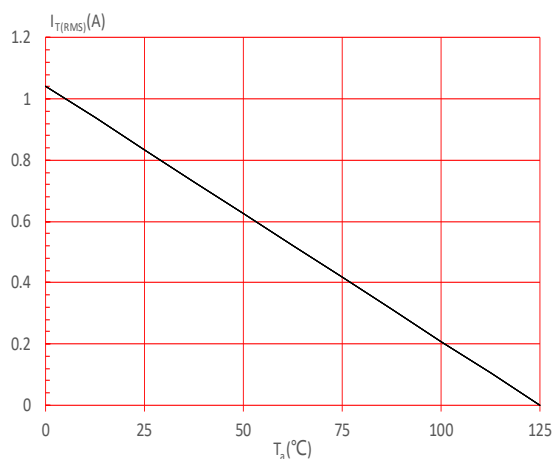
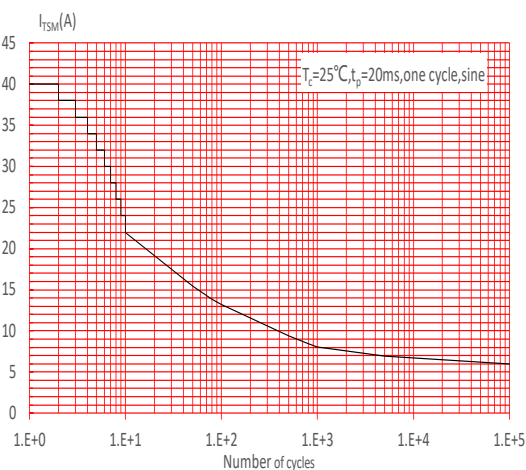
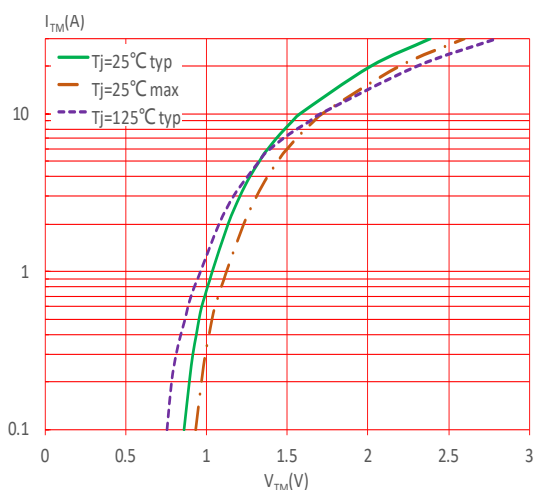
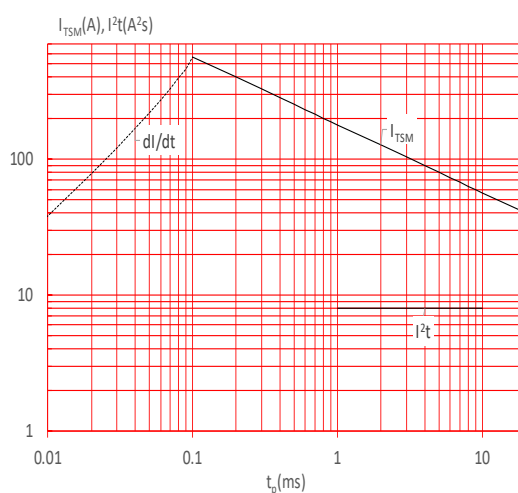
FIG.1: Maximum power dissipation versus RMS on-state current**FIG.2:** RMS on-state current versus case temperature**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35μm) (full cycle)**FIG.4:** Surge peak on-state current versus number of cycles**FIG.5:** On-state characteristics**FIG.6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t ($di/dt < 100A/\mu s$)

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

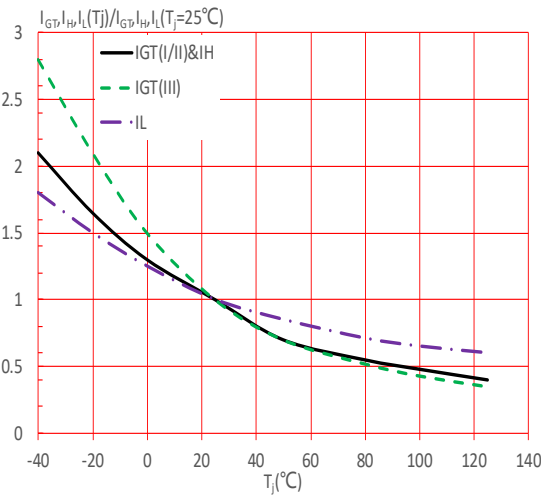
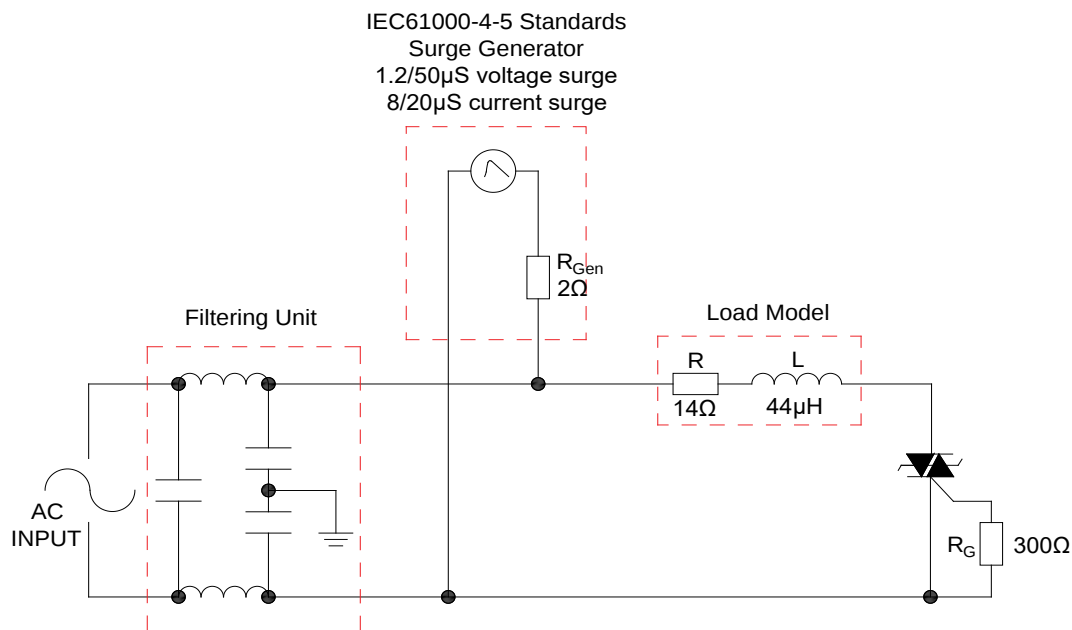
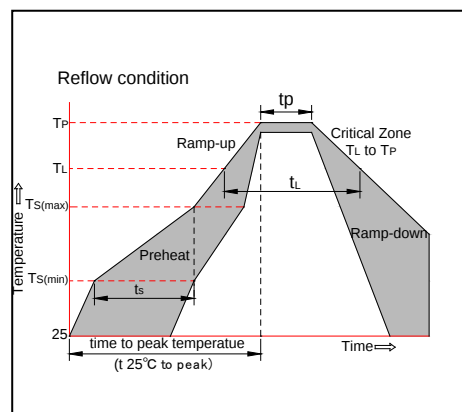


FIG.8: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards



SOLDERING PARAMETERS

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



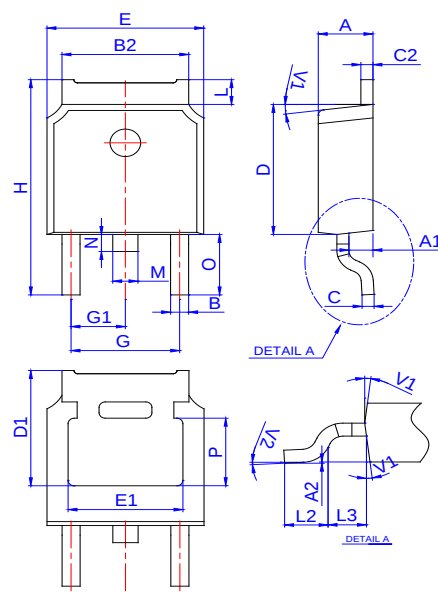
ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
ACJT04K-1000CW	1000	35	TO-252	80	Tube
ACJT04K-1000CW-TR				2,500	Tape & Reel

Document Revision History

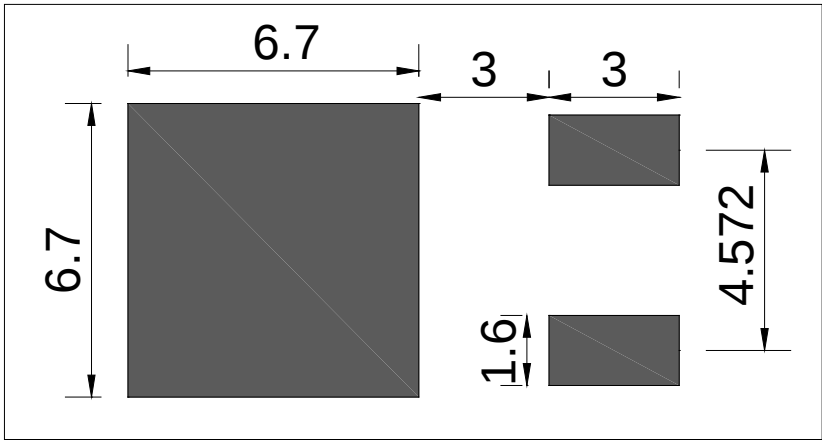
Date	Revision	Changes
Apr.14, 2023	A.1.0	Last updated
Oct.22, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A1	0.80		1.20	0.031		0.047
A2	0		0.15	0		0.006
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
G1	2.18		2.38	0.086		0.094
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
L3	1.10		1.50	0.043		0.059
M	0.65		0.95	0.026		0.037
N	0.65		0.95	0.026		0.037
O	2.80		3.20	0.110		0.126
P	3.10		3.30	0.122		0.130
V1		7°			7°	
V2	0°		6°	0°		6°

FOOTPRINT-TO-252 (dimensions in mm)



Technical drawing of a mechanical part, showing front and side views with dimensions.

Front View Dimensions:

- Overall length: 548 ± 1
- Top flange width: 4
- Top flange thickness: 6
- Top flange hole diameter: $\phi 3 \pm 0.05$

Side View Dimensions:

- Overall height: $19,75$
- Top flange thickness: $1,50 \pm 0.10$
- Top flange hole diameter: $1,90 \pm 0.10$
- Top flange hole offset: $1,40 \pm 0.10$
- Top flange hole diameter: $2,40$
- Top flange hole offset: ± 0.10
- Top flange hole diameter: $1,85 \pm 0.10$
- Top flange hole offset: $2,2 \pm 0.10$
- Top flange hole diameter: $5,25 \pm 0.10$
- Top flange hole offset: $7,25 \pm 0.10$
- Top flange hole diameter: $1,20$
- Top flange hole offset: $0,50$

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	15.90	16.00	16.10	0.626	0.630	0.634
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
D0	1.50	1.55	1.60	0.059	0.060	0.063
D1	1.50	—	—	0.059	—	—
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
10P0	39.80	40.00	40.20	1.567	1.575	1.583
A0	6.80	6.90	7.00	0.267	0.272	0.276
B0	10.40	10.50	10.60	0.408	0.413	0.417
K0	2.60	2.70	2.80	0.102	0.106	0.110
T	0.25	0.30	0.35	0.010	0.012	0.014
t1	0.10	—	—	0.004	—	—

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