



ACJT4 Series 4A TRIACs

Rev.11.0

DESCRIPTION:

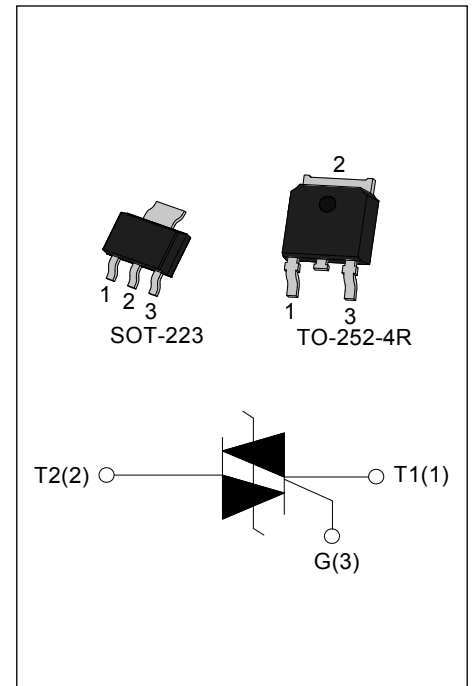
The ACJT4 series of double mesa technology provide high interference immunity, They can be used as an static ON/OFF function in electrical control system, and used as a driver of low power and high inductance or resistive loads, such as jet pumps of dishwashers, fans of air-conditioner ...

Package SOT-223 & TO-252-4R are RoHS compliant.

(2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	800/1000	V
I_{GT}	≤ 5 or ≤ 10 or ≤ 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}	800/1000	V
Repetitive peak reverse voltage($T_j=25^\circ\text{C}$)	V_{RRM}	800/1000	V
RMS on-state current	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	30	A
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	4.5	A^2s
Rate of rise of on-state current ($I_G=2 \times I_{GT}$)	di_T/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	1	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Peak gate power	P_{GM}	1	W

ELECTRICAL CHARACTERISTICS ($T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Quadrant		Value			Unit
				ACJT405	ACJT410	ACJT425	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II - III	MAX	5	10	25	mA
V_{GT}		I - II - III	MAX	1.3	1.4	1.5	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	15	30	40	mA
		II		20	45	60	
I_H	$I_T=100\text{mA}$		MAX	10	25	35	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	300	600	1000	V/ μs

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
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	10	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	1	mA

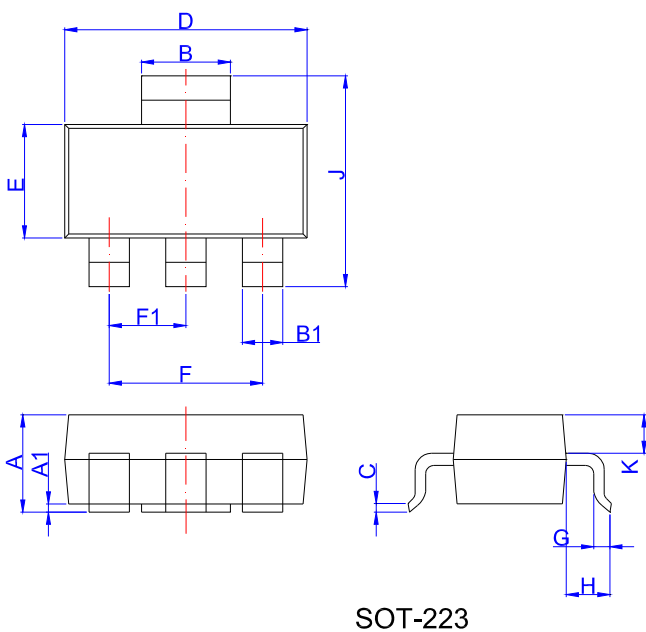
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	TO-252-4R	2.9	$^{\circ}\text{C}/\text{W}$
		SOT-223	5.6	
$R_{th(j-a)}$	junction to ambient	TO-252-4R	70	$^{\circ}\text{C}/\text{W}$
		SOT-223	60	

ORDERING INFORMATION

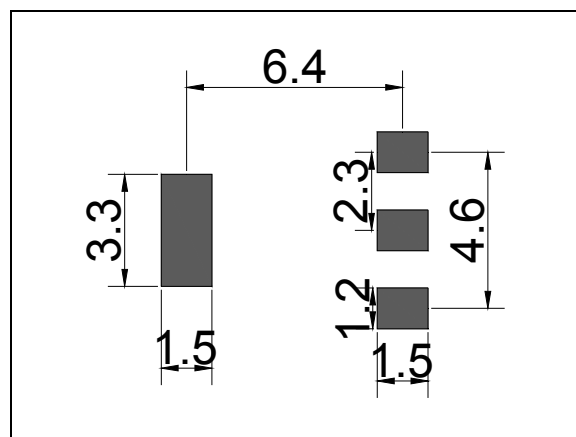
<p>AC AC switch JieJie Microelectronics Co.,Ltd</p>	<p>J</p>	<p>T Triacs IT(RMS):4A</p>	<p>4</p>	<p>05 05: $I_{GT1-3} \leq 5mA$ 10: $I_{GT1-3} \leq 10mA$ 25: $I_{GT1-3} \leq 25mA$</p>	<p>-8</p>	<p>K V:SOT-223 K:TO-252-4R KTR:TO-252-4R(Tape&Reel)</p>
					<p>8: $V_{DRM} / V_{RRM} \geq 800V$ 10: $V_{DRM} / V_{RRM} \geq 1000V$</p>	

PACKAGE MECHANICAL DATA

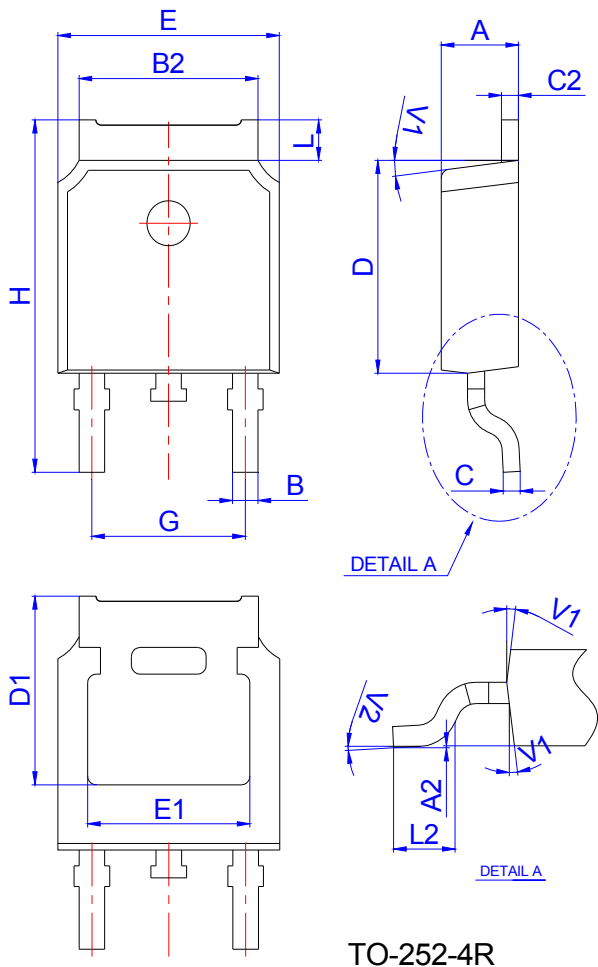


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039

FOOTPRINT-SOT-223 (dimensions in mm)

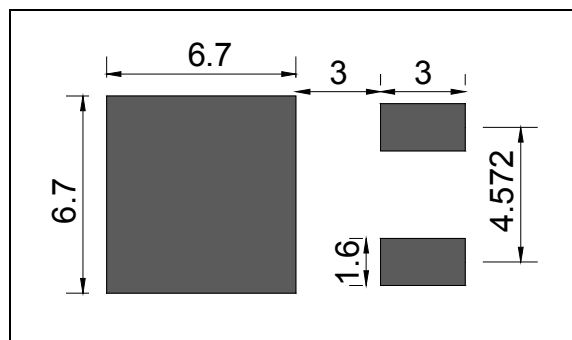


PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
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
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
V1		7°			7°	
V2		0°	6°	0°		6°

FOOTPRINT-TO-252-4R (dimensions in mm)



PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-252-4R	TUBE	80	4,000	32,000
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
SOT-223	TAPING	4,000	40,000	13 inch
TO-252-4R	TAPING	2,500	25,000	13 inch

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

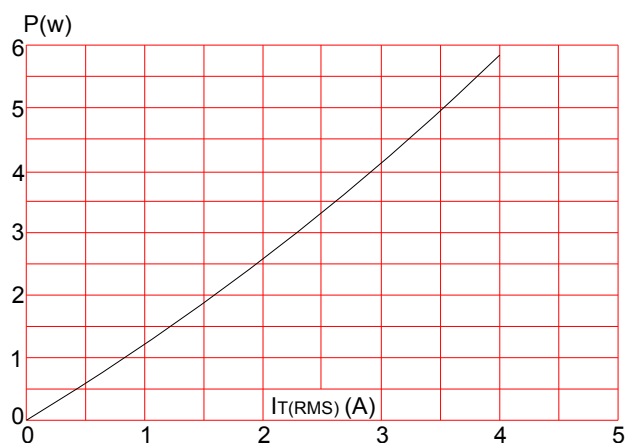


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness: 35 μ m)(full cycle)

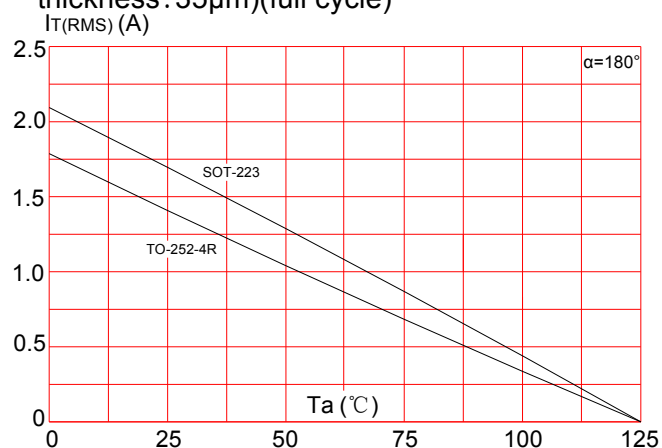


FIG.3: Surge peak on-state current versus number of cycles

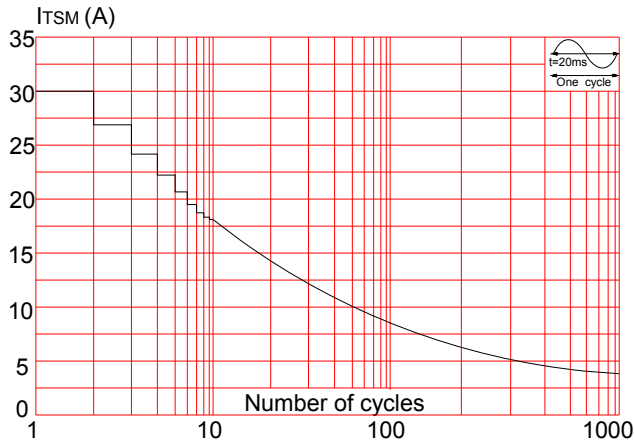


FIG.5: Relative variations of gate trigger current versus junction temperature

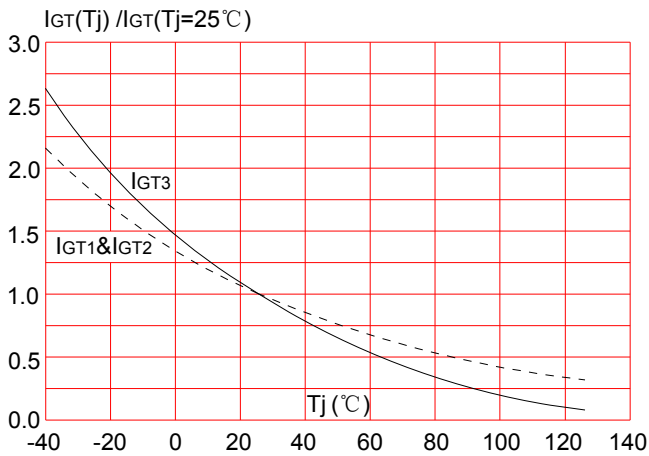


FIG.4: On-state characteristics (maximum values)

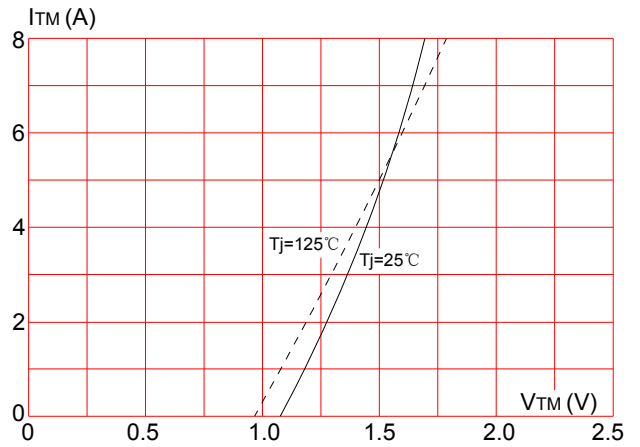
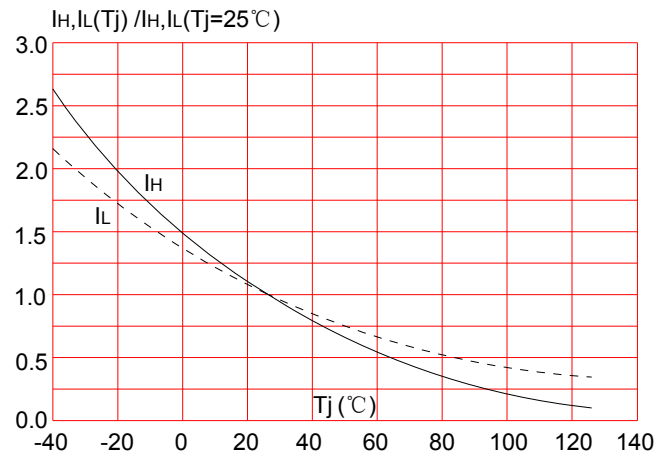
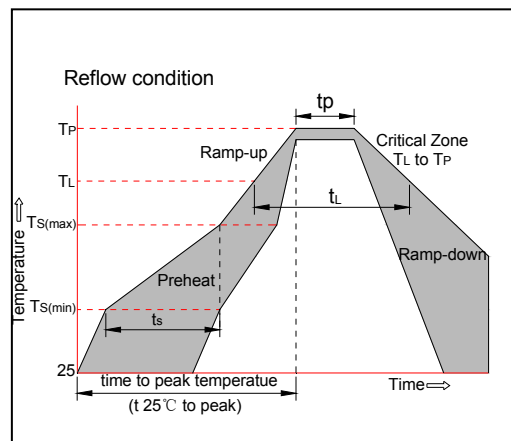


FIG.6: Relative variations of holding current, latching current versus junction temperature



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




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