



ACJT1 Series 1A TRIACs

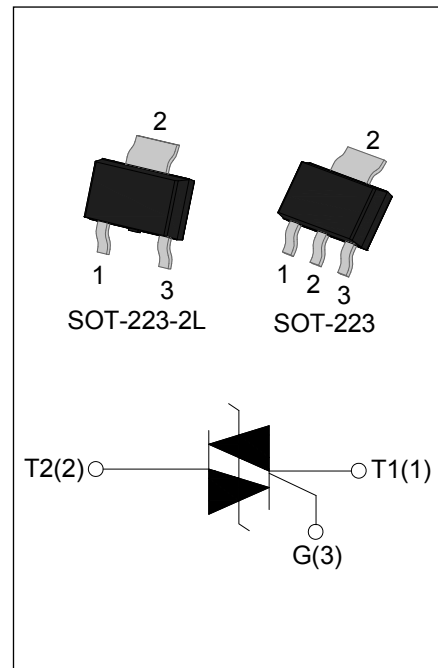
Rev.6.0

DESCRIPTION:

ACJT1 series triacs with high ability to withstand the shock loading of large current provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on inductive load and serious electromagnetic interference place.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
V_{DRM}/V_{RRM}	600/800/1000	V
I_{GT}	≤ 5 or ≤ 10	mA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-125	$^{\circ}C$
Repetitive peak off-state voltage($T_j=25^{\circ}C$)		V_{DRM}	600/800/1000	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)		V_{RRM}	600/800/1000	V
Non repetitive surge peak Off-state voltage		V_{DSM}	$V_{DRM} + 100$	V
Non repetitive peak reverse voltage		V_{RSM}	$V_{RRM} + 100$	V
RMS on-state current	SOT-223-2L/ SOT-223($T_C=78^{\circ}C$)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, $F=50Hz$)		I_{TSM}	10	A
I^2t value for fusing ($t_p=10ms$)		I^2t	1.12	A^2s
Rate of rise of on-state current ($I_G=2 \times I_{GT}$)		di_T/dt	50	$A/\mu s$
Peak gate current		I_{GM}	1	A
Average gate power dissipation		$P_{G(AV)}$	0.2	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
				ACJT105	ACJT110	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	5	10	mA
V_{GT}		I - II -III	MAX	1.3		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	25	mA
		II		25	35	
I_H	$I_T=100\text{mA}$		MAX	10	20	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN	400	600	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=1.4\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.5	mA

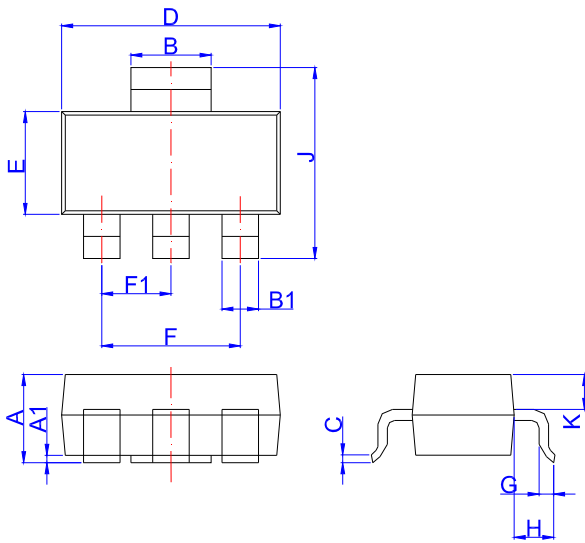
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	SOT-223/ SOT-223-2L	31	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	junction to ambient(AC)		60	

ORDERING INFORMATION

<p>AC AC switch JieJie Microelectronics Co.,Ltd</p>	<p>J Triacs</p>	<p>T $I_{T(RMS)}:1\text{A}$</p>	<p>1</p>	<p>05 05: $I_{GT1-3}\leq 5\text{mA}$ 10: $I_{GT1-3}\leq 10\text{mA}$</p>	<p>-6 6: $V_{DRM} /V_{RRM}\geq 600\text{V}$ 8: $V_{DRM} /V_{RRM}\geq 800\text{V}$ 10: $V_{DRM} /V_{RRM}\geq 1000\text{V}$</p>	<p>V V: SOT-223 W: SOT-223-2L</p>
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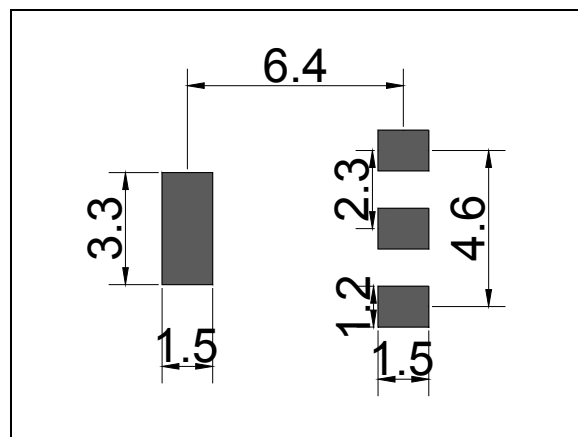
PACKAGE MECHANICAL DATA



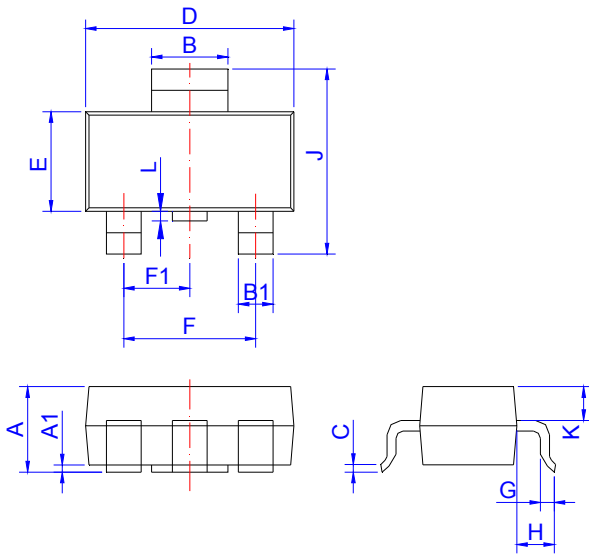
SOT-223

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)



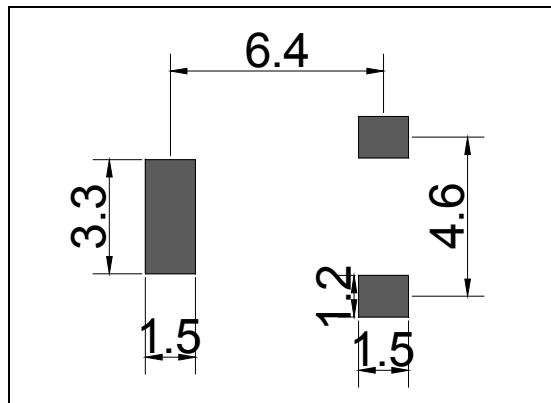
PACKAGE MECHANICAL DATA



SOT-223-2L

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	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K		0.9			0.035	
L	0	0.1	0.2	0	0.004	0.008

FOOTPRINT-SOT-223-2L (dimensions in mm)



PACKAGE INFORMATION

PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
SOT-223	TAPING	4,000	40,000	13 inch
SOT-223-2L	TAPING	4,000	40,000	13 inch

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

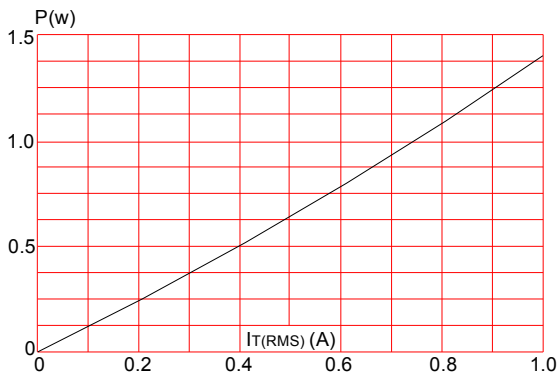


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm) (full cycle)

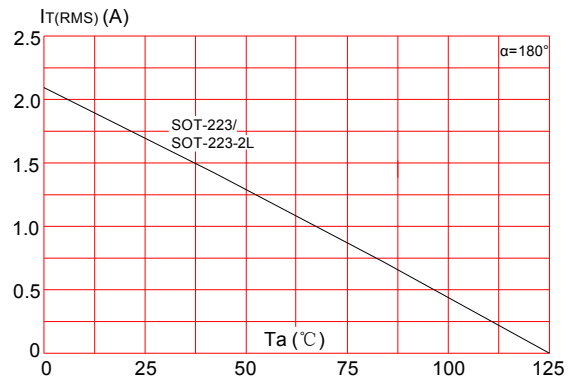


FIG.3: Surge peak on-state current versus number of cycles

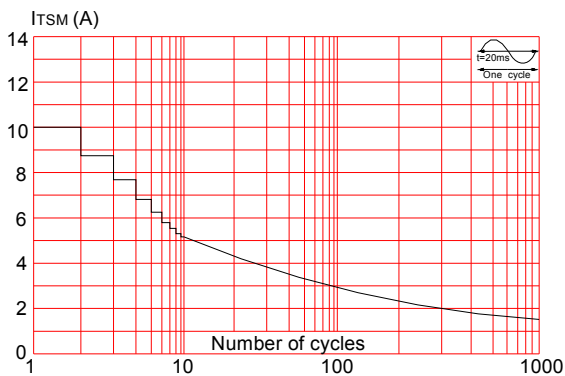


FIG.4: On-state characteristics (maximum values)

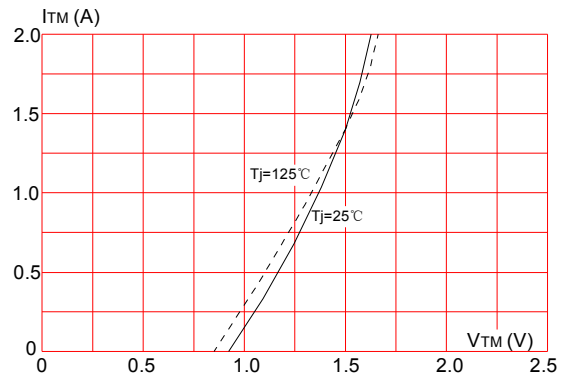


FIG.5: Relative variations of gate trigger current versus junction temperature

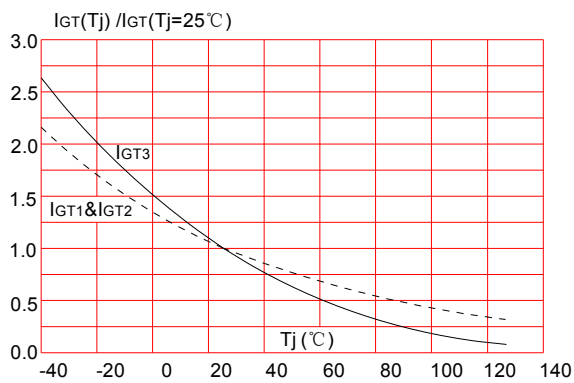
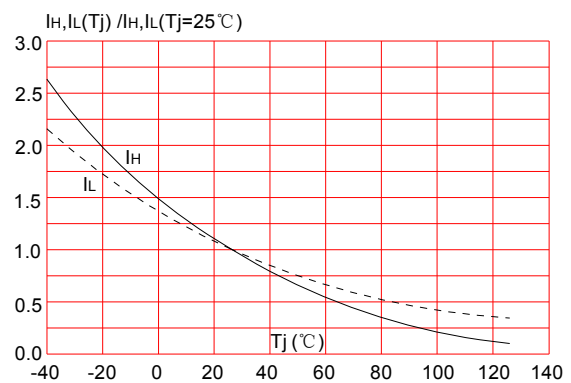
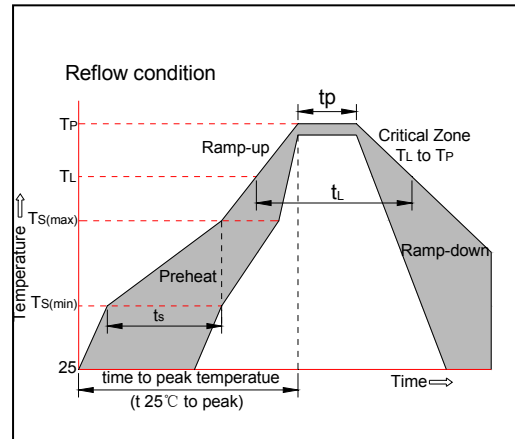


FIG.6: Relative variations of holding current, latching current versus junction temperature



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) (ts)	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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