

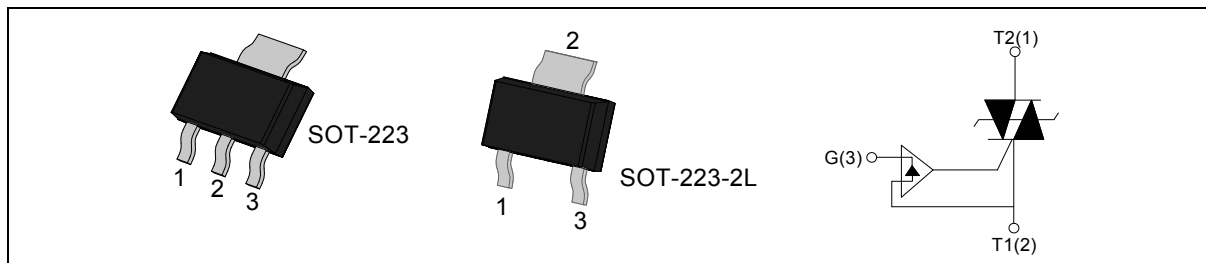


DESCRIPTION:

Available either in through-hole or surface-mount package, the ACJ110 series can be used as an AC static ON/OFF function in domestic and industrial control systems, or as a driver of low power and high inductance loads, such as solenoid valves, pumps, fans, micro-motors. Package SOT-223 & SOT-223-2L are RoHS compliant. (2011/68/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
I_{GT2-3}	≤ 10	mA
V_{TM}	≤ 1.7	V



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	V
Repetitive peak reverse voltage($T_j=25^{\circ}C$)		V_{RRM}	600/800	V
RMS on-state current	SOT-223/ SOT-223-2L ($T_C=65^{\circ}C$)	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)		I_{TSM}	12	A
I^2t value for fusing ($t_p=10ms$)		I^2t	0.72	A^2s
Rate of rise of on-state current ($I_G=2 \times I_{GT}$)		di/dt	100	$A/\mu s$
Peak gate current		I_{GM}	1	A
Average gate power dissipation		$P_{G(AV)}$	0.1	W
Peak gate power		P_{GM}	0.5	W

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

Symbol	Test Condition	Quadrant		Value	Unit
I_{GT}	$V_D=12\text{V}$ $R_L=33\Omega$	II -III	MAX	10	mA
V_{GT}		II -III	MAX	1.2	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	II -III	MIN	0.2	V
I_L	$I_G=1.2I_{GT}$	II	MAX	30	mA
		III		20	
I_H	$I_T=100\text{mA}$		MAX	20	mA
dV/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	500	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=2\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.7	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	1	mA

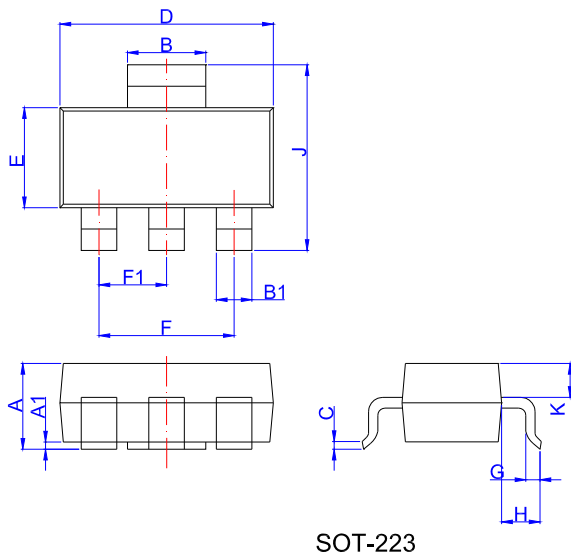
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	SOT-223/ SOT-223-2L	40	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient		60	

ORDERING INFORMATION

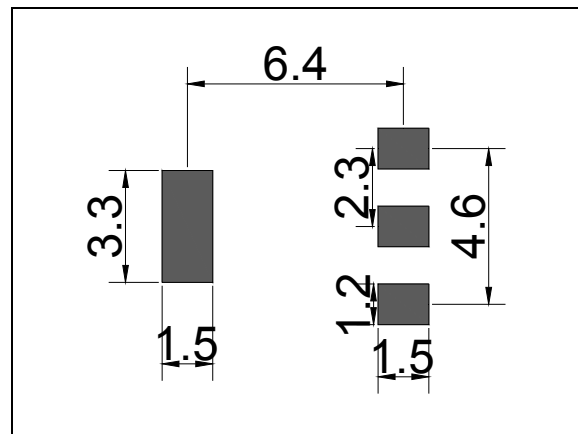
<p>ACJ 1 10 -6 V</p> <p>JieJie AC switch series</p> <p>$I_{T(RMS)}:1\text{A}$</p> <p>10:$I_{GT2-3}\leq 10\text{mA}$</p> <p>V:SOT-223 W:SOT-223-2L</p> <p>6:$V_{DRM}/V_{RRM}\geq 600\text{V}$ 8:$V_{DRM}/V_{RRM}\geq 800\text{V}$</p>

PACKAGE MECHANICAL DATA

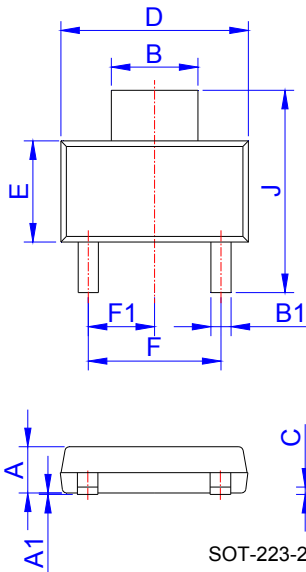


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	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)

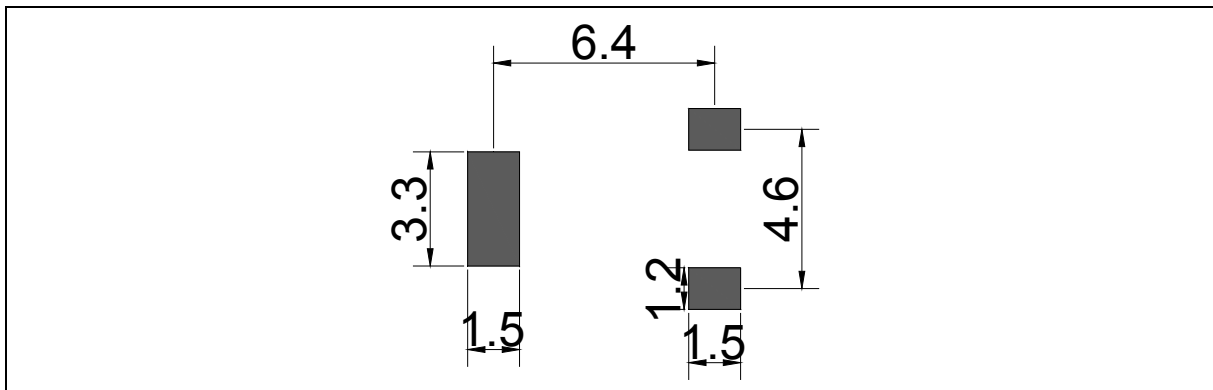


PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50	1.60	1.80	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.90	3.00	3.10	0.114	0.118	0.122
B1	0.60	0.70	0.80	0.024	0.028	0.031
C	0.22	0.254	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
E	3.30	3.50	3.70	0.130	0.138	0.146
F		4.60			0.181	
F1		2.30			0.091	
G	0.70	0.90	1.10	0.028	0.035	0.043
H	1.50	1.75	2.00	0.059	0.069	0.079
J	6.70	7.00	7.30	0.264	0.276	0.287
K		0.90			0.035	

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



PACKAGE INFORMATION

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

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

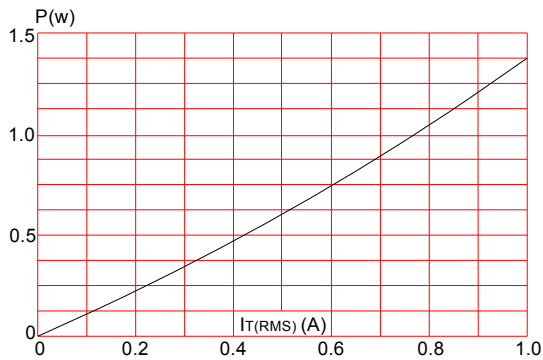


FIG.3: Surge peak on-state current versus number of cycles

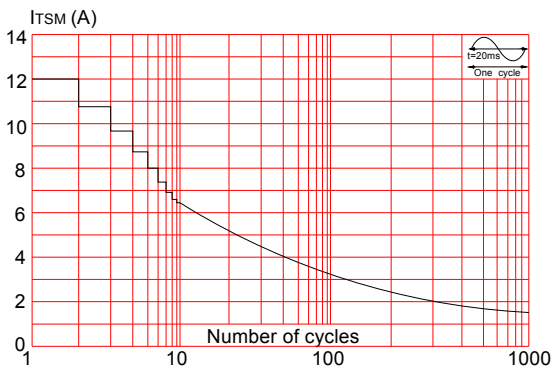


FIG.5: Relative variations of gate trigger current versus junction temperature

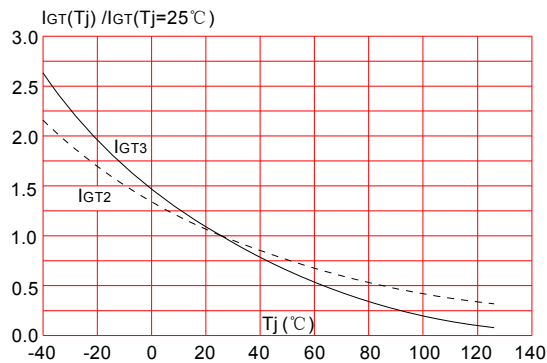


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)

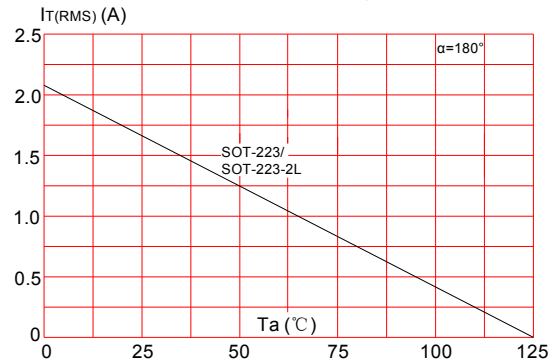


FIG.4: On-state characteristics (maximum values)

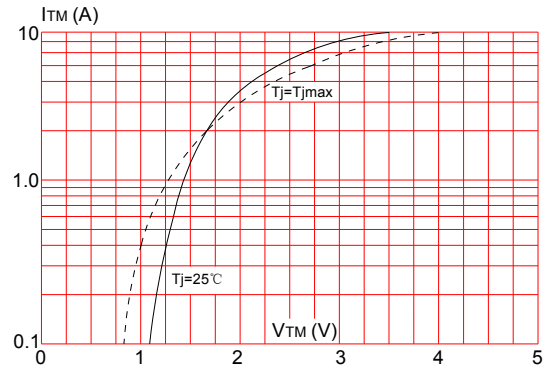
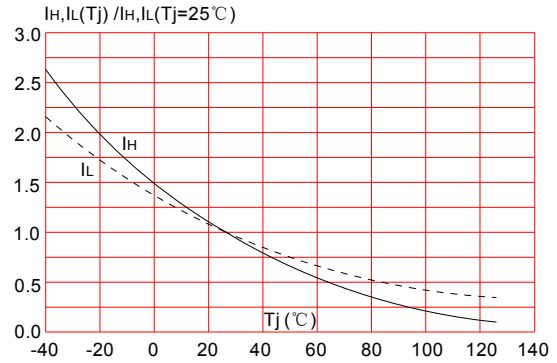
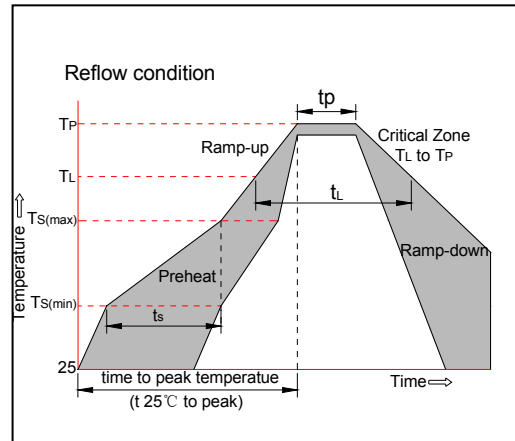


FIG.6: Relative variations of holding current, latching current versus junction temperature




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



Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement. Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document is the fourth version which is made in 12-Sep.-2019. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

Copyright ©2019 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.