

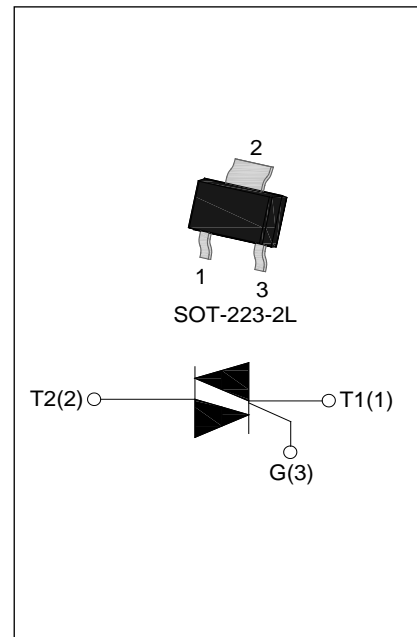


### DESCRIPTION:

ACJT110-10W 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. Package SOT-223-2L is RoHS compliant.(2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
$V_{DRM}/V_{RRM}$	1000	V
$I_{GT\ I/II/III}$	10/10/10	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	SOT-223-2L ( $T_C=85^{\circ}C$ )	$I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current ( full cycle, F=50Hz)	$I_{TSM}$	15	A	
Non repetitive surge peak on-state current ( full cycle, F=60Hz)		16.5	A	
$I^2t$ value for fusing ( $t_p=10ms$ )	$I^2t$	1.25	$A^2s$	
Rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	$di/dt$	100	$A/\mu s$	
Peak gate current	$I_{GM}$	2	A	
Average gate power dissipation	$P_{G(AV)}$	0.2	W	
Peak gate power	$P_{GM}$	5	W	

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

Symbol	Test Condition	Quadrant	Value		Unit
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	I - II -III	MAX	10	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	25	mA
		II		35	
$I_H$	$I_T=100\text{mA}$		MAX	20	mA
dV/dt	$V_D=670\text{V}$ Gate Open $T_j=125^\circ\text{C}$		MIN	600	V/ $\mu\text{s}$

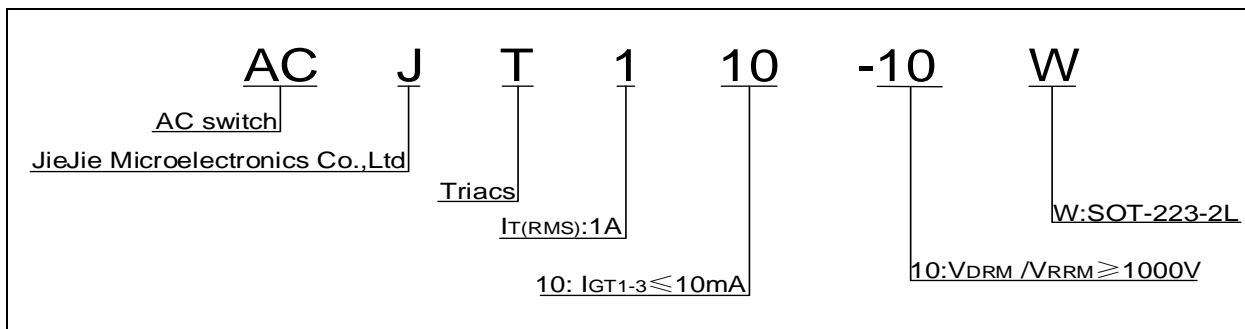
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=1.1\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.3	V
$V_{TO}$	Threshold voltage	$T_j=125^\circ\text{C}$	1	V
$R_d$	Dynamic resistance	$T_j=125^\circ\text{C}$	0.22	$\Omega$
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^\circ\text{C}$	500	$\mu\text{A}$

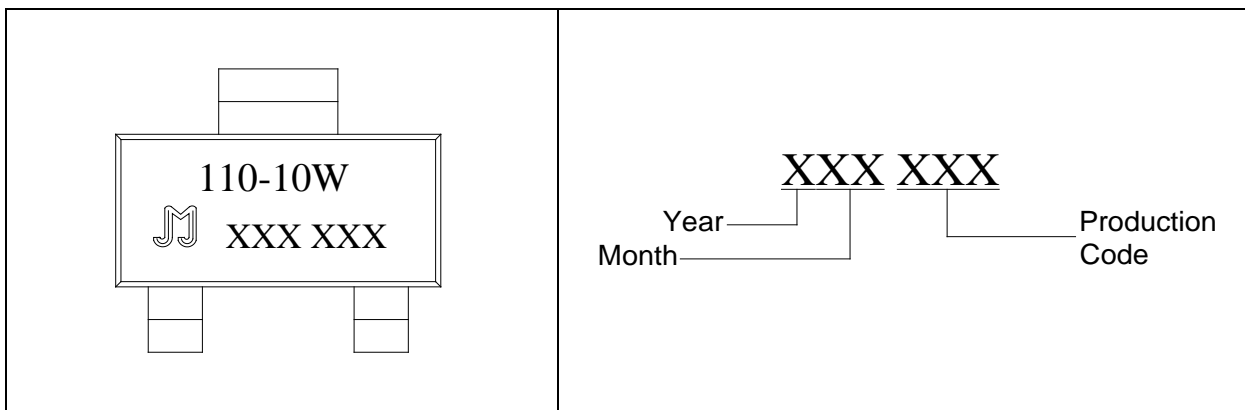
**THERMAL RESISTANCES**

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

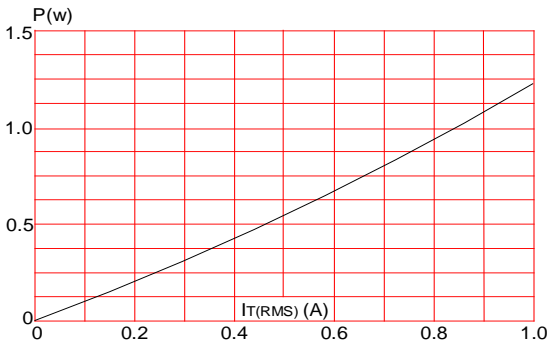
**ORDERING INFORMATION**



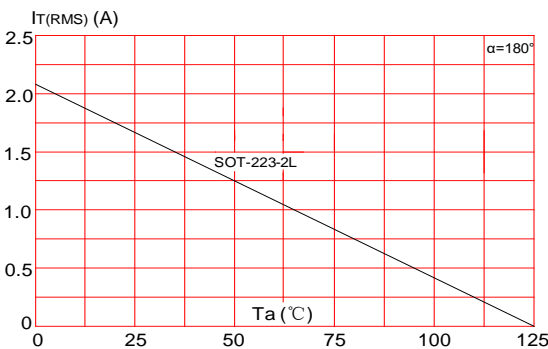
**MARKING**



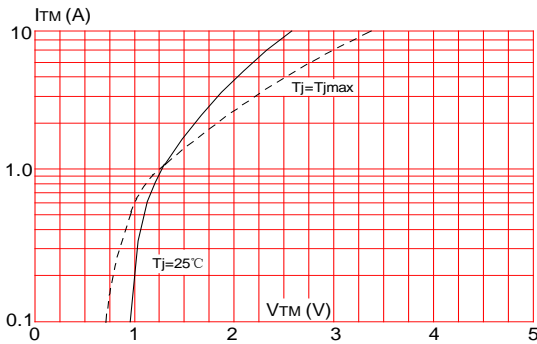
**FIG.1** Maximum power dissipation versus RMS on-state current



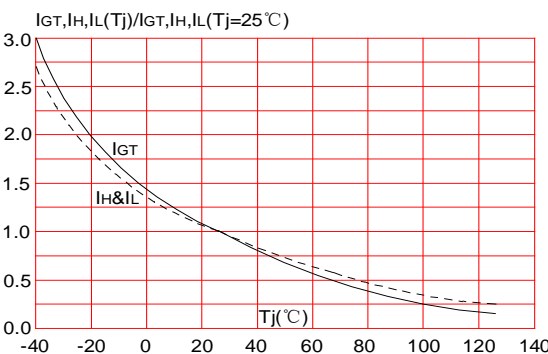
**FIG.3:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)



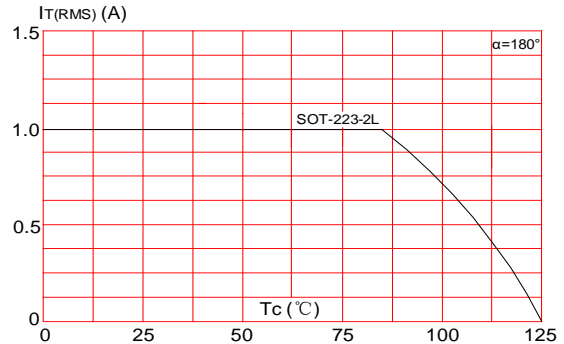
**FIG.5:** On-state characteristics (maximum values)



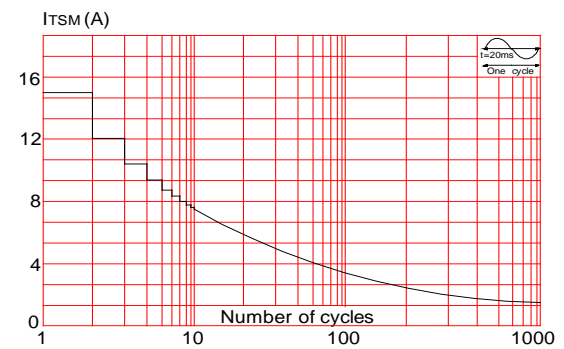
**FIG.7:** Relative variations of gate trigger current, holding current and latching current versus junction temperature



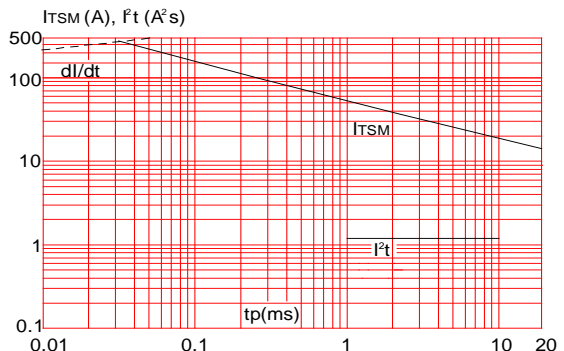
**FIG.2:** RMS on-state current versus case temperature



**FIG.4:** Surge peak on-state current versus number of cycles

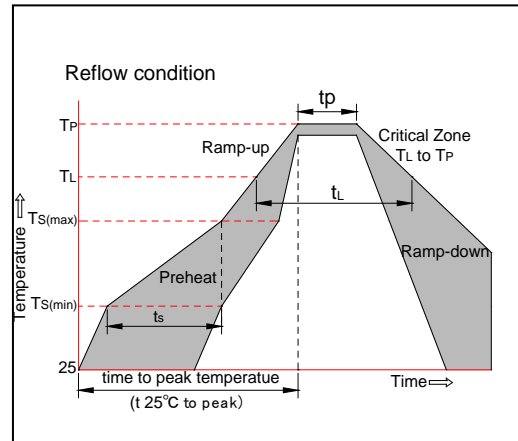


**FIG.6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<20ms and corresponding value of ft (di/dt < 100A/μs)



**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



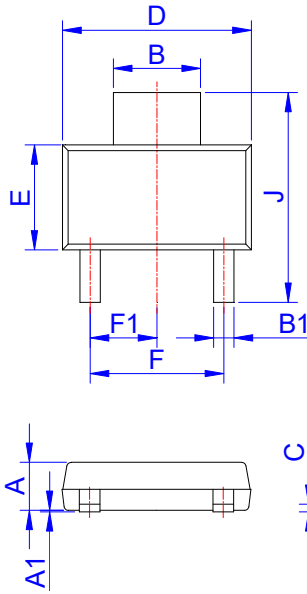
**ORDERING INFORMATION**

Order code	Voltage $V_{DRM}/V_{RRM}$ (V)	IGT(mA)	Package	Base qty. (pcs)	Delivery mode
		I - II - III			
ACJT110-10W	1000	10	SOT-223-2L	4,000	Tape & Reel

**Document Revision History**

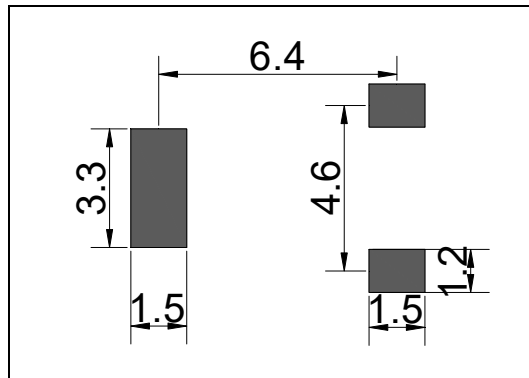
Date	Revision	Changes
Nov 21, 2022	1	Last update

PACKAGE MECHANICAL DATA

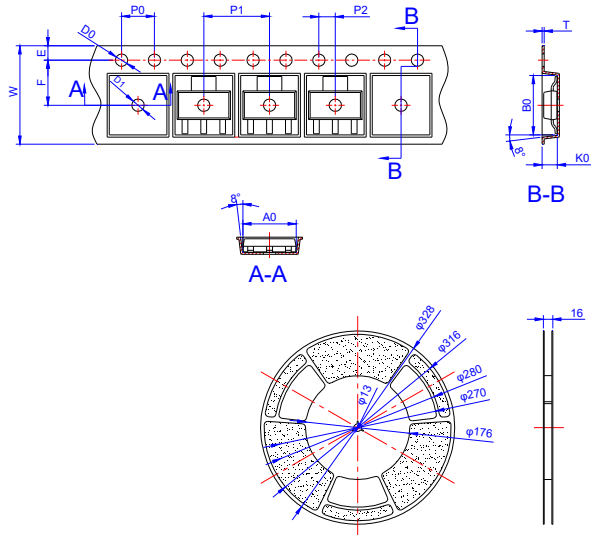


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50	1.60	1.80	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.90	3.00	3.10	0.114	0.118	0.122
B1	0.60	0.70	0.80	0.024	0.028	0.031
C	0.22	0.254	0.32	0.009	0.010	0.013
D	6.30	6.50	6.70	0.248	0.256	0.264
E	3.30	3.50	3.70	0.130	0.138	0.146
F	4.40		4.80	0.173		0.189
F1	2.20		2.40	0.087		0.094
G	0.50		1.00	0.020		0.039
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	0.80		1.00	0.031		0.039

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



DELIVERY MODE




Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
W	-	12.00	12.20	-	0.472	0.480
E	1.65	1.75	1.85	0.065	0.069	0.073
F	5.45	5.50	5.55	0.215	0.217	0.219
D0	-	1.50	1.60	-	0.059	0.063
D1	-	1.55	1.80	-	0.061	0.071
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	1.95	2.00	2.05	0.077	0.079	0.081
10P0	39.80	40.00	40.20	1.567	1.575	1.583
A0	6.73	6.83	6.93	0.265	0.269	0.273
B0	7.30	7.40	7.50	0.287	0.291	0.295
K0	1.78	1.88	1.98	0.070	0.074	0.078
T	0.25	0.30	0.35	0.010	0.012	0.014

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





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