

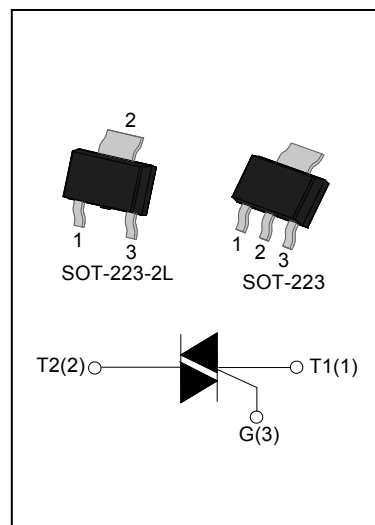


### DESCRIPTION:

With low holding and latching current, JST136 series triacs are especially recommended for use on middle and small resistance type power load. Packages SOT-223 & SOT-223-2L are RoHS compliant. (2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
$V_{DRM}/V_{RRM}$	600/800	V



### 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( $T_j=25^{\circ}C$ )	$V_{DRM}$	600/800	V
Repetitive peak reverse voltage( $T_j=25^{\circ}C$ )	$V_{RRM}$	600/800	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/ SOT-223-2L $(T_C=70^{\circ}C)$ $I_{T(RMS)}$	1	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	25	A
$I^2t$ value for fusing ( $t_p=10ms$ )	$I^2t$	3.1	$A^2s$
Critical rate of rise of on-state current ( $I_G=2 \times I_{GT}$ )	I - II - III	50	$A/\mu s$
	IV	10	
Peak gate current	$I_{GM}$	2	A
Average gate power dissipation	$P_{G(AV)}$	0.5	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
				T	D	E	F	
$I_{GT}$	$V_D=12\text{V}$	I - II - III	MAX	5	5	10	25	mA
		IV		5	10	25	70	
$V_{GT}$		ALL	MAX	1.3				V
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125^\circ\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN	0.2				V
$I_L$	$I_G=1.2I_{GT}$	I - III	MAX	10	20	10	40	mA
		II - IV		15	35	20	60	
$I_H$	$I_T=100\text{mA}$		MAX	5	15	15	30	mA
$dV/dt$	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ\text{C}$		MIN	20	50	100	150	V/ $\mu\text{s}$
$(dV/dt)_c$	$(dI/dt)_c=1.7\text{A/ms}$ $T_j=125^\circ\text{C}$		MIN	0.1	0.1	0.5	5	V/ $\mu\text{s}$

## STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=5.5\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=125^\circ\text{C}$	0.5	mA

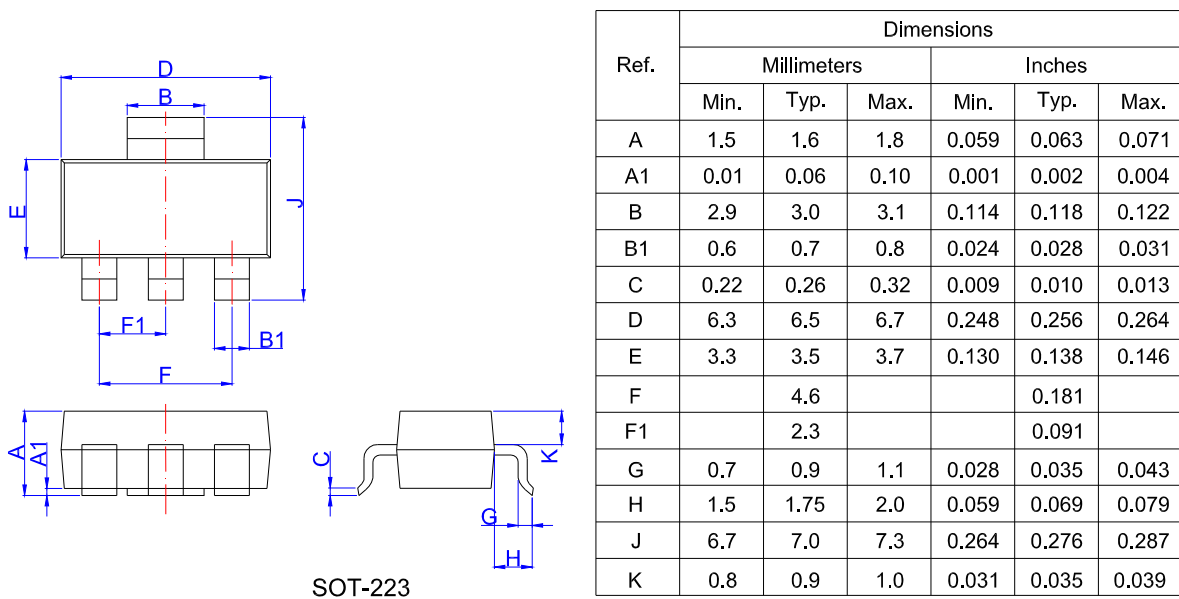
## THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case(AC)	SOT-223/ SOT-223-2L	4.1	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient		60	

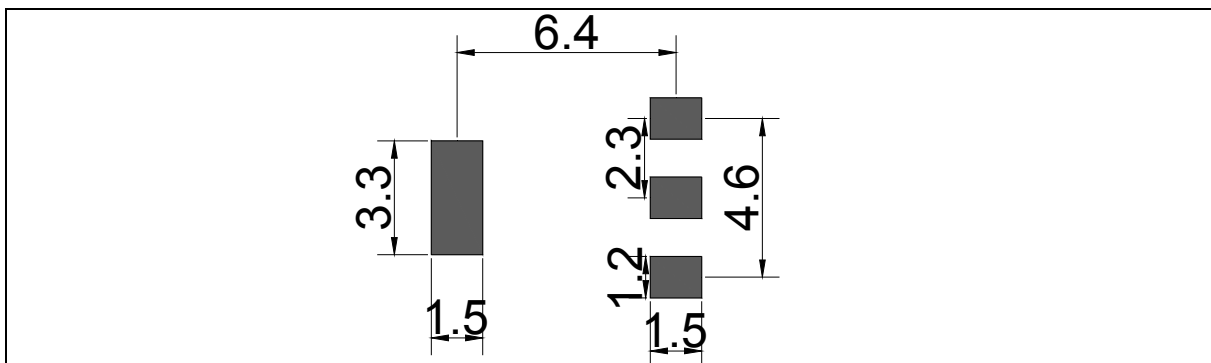
**ORDERING INFORMATION**

J	ST	136	W	-600	D
JieJie Microelectronics Co.,Ltd					
TRIACs					
$I_{T(RMS)}: 1A$					
V: SOT-223 W: SOT-223-2L					
T: $I_{GT1-3} \leq 5mA$ $I_{GT4} \leq 5mA$ D: $I_{GT1-3} \leq 5mA$ $I_{GT4} \leq 10mA$ E: $I_{GT1-3} \leq 10mA$ $I_{GT4} \leq 25mA$ F: $I_{GT1-3} \leq 25mA$ $I_{GT4} \leq 70mA$					
600: $V_{DRM}/V_{RRM} \geq 600V$					
800: $V_{DRM}/V_{RRM} \geq 800V$					

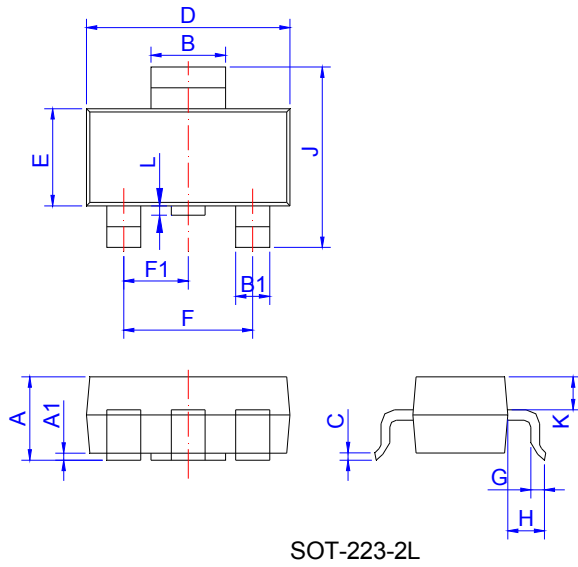
**PACKAGE MECHANICAL DATA**



**FOOTPRINT-SOT-223 (dimensions in mm)**

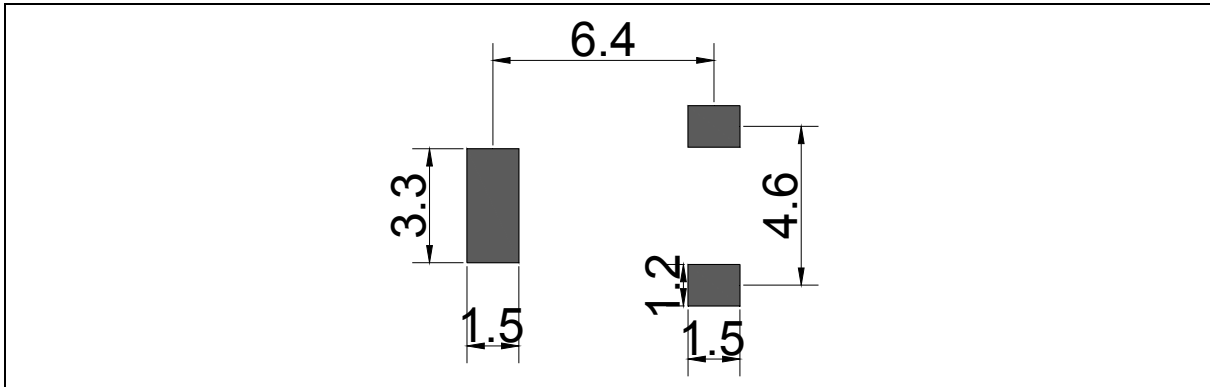


PACKAGE MECHANICAL DATA

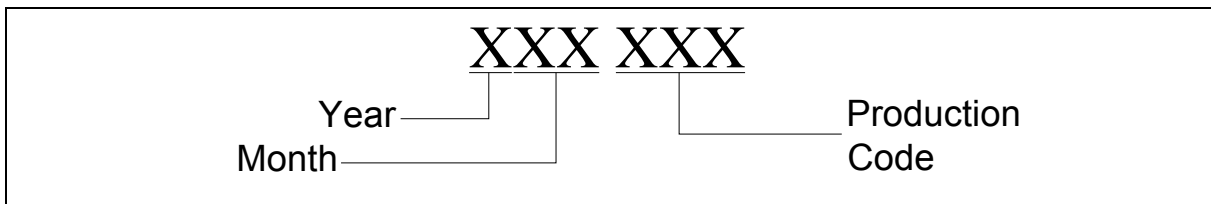
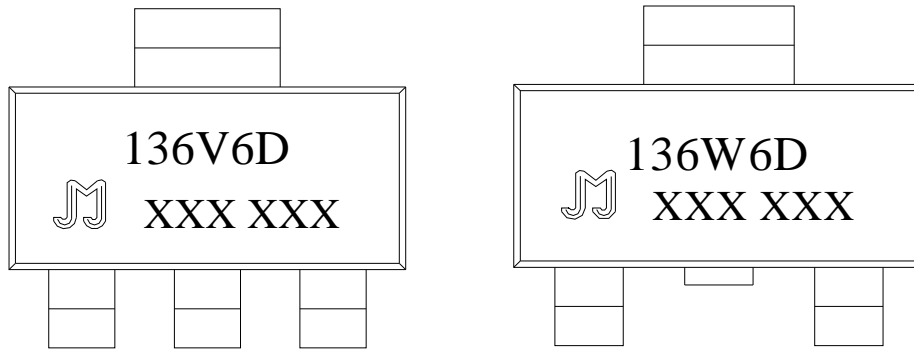


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0.01	0.06	0.10	0.001	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138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

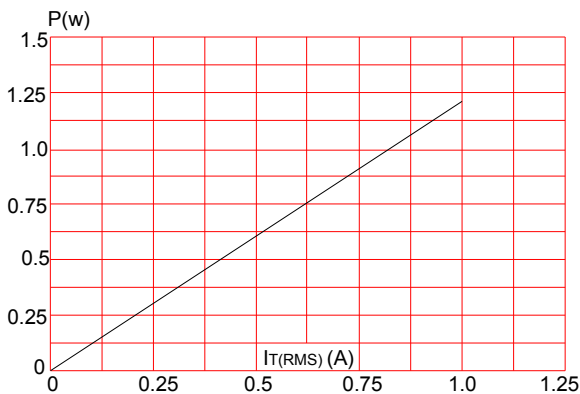
FOOTPRINT-SOT-223-2L (dimensions in mm)



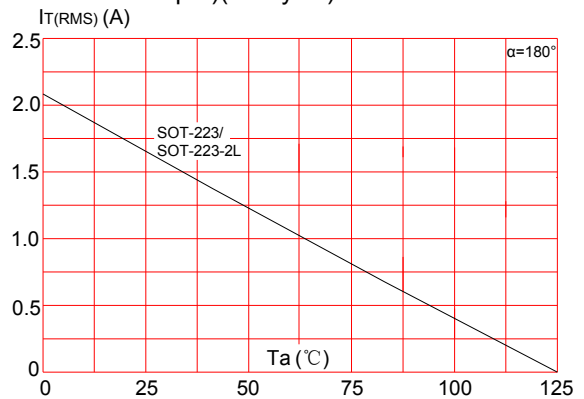
MARKING



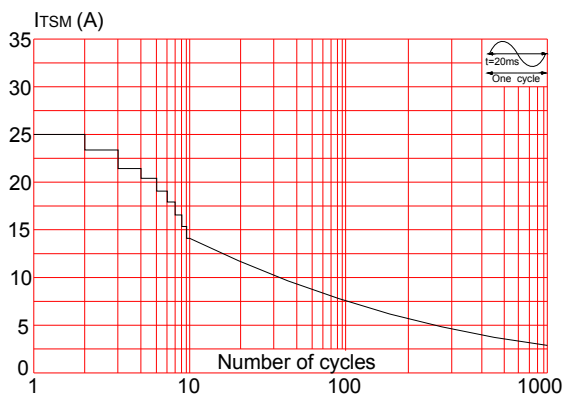
**FIG.1:** Maximum power dissipation versus RMS on-state current



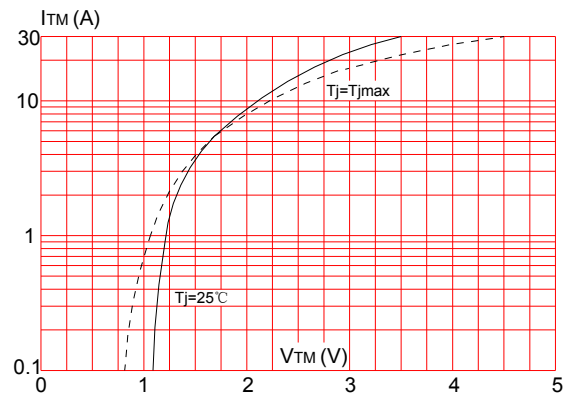
**FIG.2:** RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)



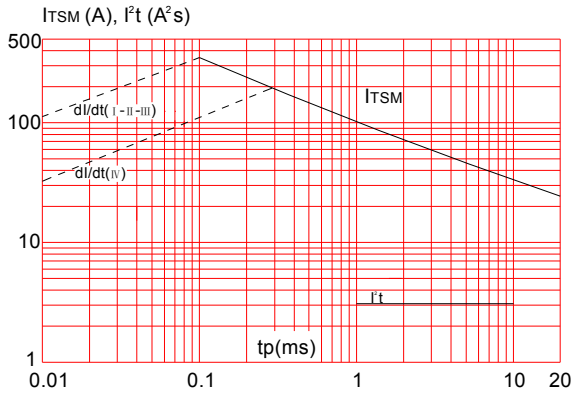
**FIG.3:** Surge peak on-state current versus number of cycles



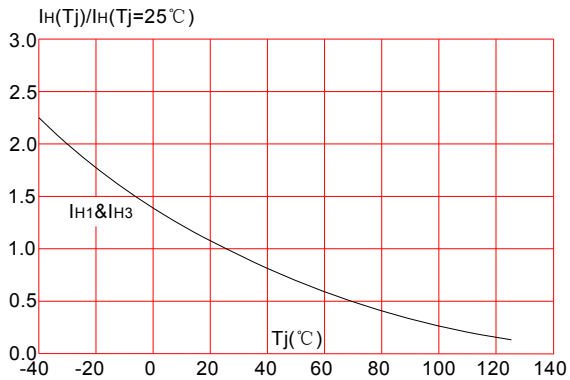
**FIG.4:** On-state characteristics (maximum values)



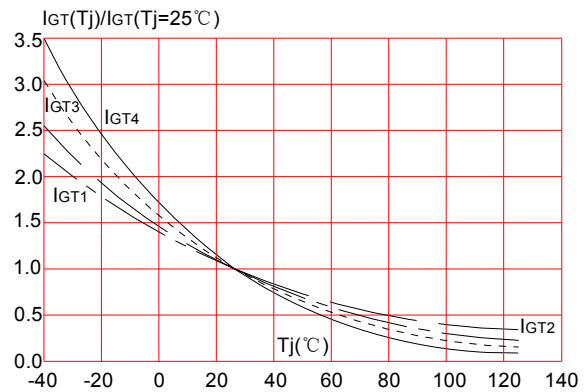
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$  and corresponding value of  $I^2t$  ( I - II -III:  $dI/dt < 50\text{A}/\mu\text{s}$ ; IV:  $dI/dt < 10\text{A}/\mu\text{s}$ )



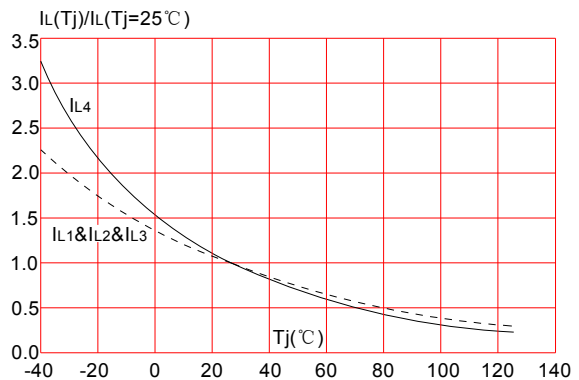
**FIG.7:** Relative variations of holding current versus junction temperature



**FIG.6:** Relative variations of gate trigger current versus junction temperature

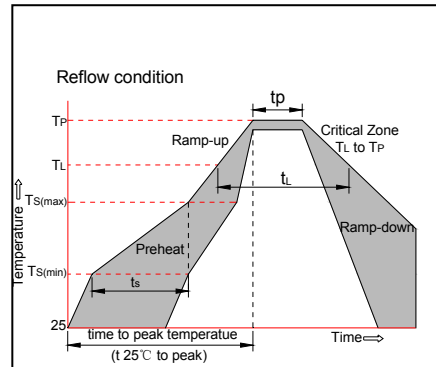


**FIG.8:** Relative variations of latching current versus junction temperature




**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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