



JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD  
**SOT-23-3LK Plastic-Encapsulate Thyristors**

**CS008L** Sensitive Gate SCRs

**MAIN CHARACTERISTICS**

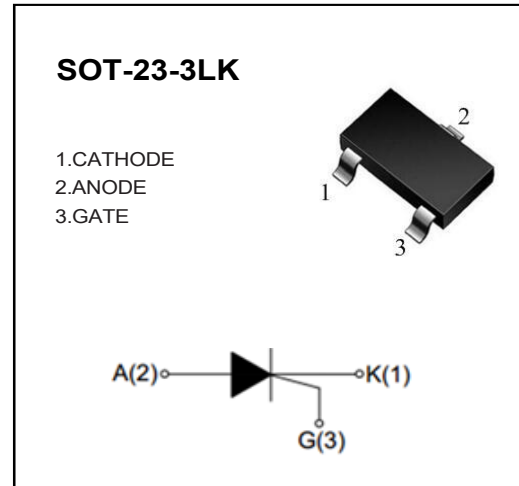
$I_{T(AV)}$	<b>0.5A</b>
$V_{DRM}/V_{RRM}$	<b>600V</b>
$I_{GT}$	<b>200<math>\mu</math>A</b>

**FEATURES**

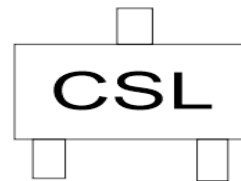
- PNP 4-layer Structure SCRs
- Mesa Glass Passivated Technology
- Multi Layers Metal Electrodes
- Sensitive gate trigger

**APPLICATIONS**

- Pulse Igniter
- Leakage Protector
- Logic Circuit Driver



**MARKING**



**ABSOLUTE RATINGS (  $T_a=25^{\circ}C$  unless otherwise noted )**

Symbol	Parameter	Test condition	Value	Unit
$V_{DRM}/V_{RRM}$	Repetitive peak off-state voltage	$T_j=25^{\circ}C$	600	V
$I_{T(AV)}$	Average on-state current	SOT-23-3LK( $T_c \leq 60^{\circ}C$ )	0.5	A
$I_{T(RMS)}$	RMS on-state current	SOT-23-3LK( $T_c \leq 60^{\circ}C$ ), Fig. 1,2	0.8	A
$I_{TSM}$	Non repetitive surge peak on-state current	Full sine wave, $T_j(\text{init})=25^{\circ}C$ , $t_p=20\text{ms}$ ; Fig. 3,5	8	A
$I^2t$	$I^2t$ value	$t_p=10\text{ms}$	0.32	$A^2s$
$di_T/dt$	Critical rate of rise of on-state current	$I_G=2 \cdot I_{GT}$ , $t_r \leq 10\text{ns}$ , $F=120\text{Hz}$ , $T_j=110^{\circ}C$	50	$A/\mu s$
$I_{GM}$	Peak gate current	$t_p=20\mu s$ , $T_j=110^{\circ}C$	0.2	A
$P_{G(AV)}$	Average gate power	$T_j=110^{\circ}C$	0.1	W
$T_{STG}$	Storage temperature		-40~+150	$^{\circ}C$
$T_j$	Operating junction temperature		-40~+110	

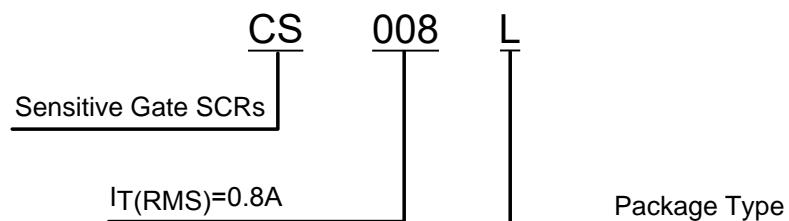
## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Symbol	Parameter	Test condition	Value			Unit
			Min	Nom	Max	
I <sub>GT</sub>	Gate trigger current	V <sub>D</sub> =12V, I <sub>T</sub> =10mA, T <sub>j</sub> =25°C, Fig. 6	10	-	200	μA
V <sub>GT</sub>	Gate trigger voltage	V <sub>D</sub> =12V, I <sub>T</sub> =10mA, T <sub>j</sub> =25°C	-	-	0.8	V
V <sub>GD</sub>	Non-triggering gate voltage	V <sub>D</sub> =V <sub>DRM</sub> , T <sub>j</sub> =125°C	0.2	-	-	V
I <sub>H</sub>	Holding current	V <sub>D</sub> =12V, I <sub>G</sub> =0.5mA, R <sub>GK</sub> =1kΩ, T <sub>j</sub> =25°C,	-	-	3	mA
I <sub>L</sub>	Latching current	Fig. 6	-	-	4	mA
dV <sub>D</sub> /dt	Critical rate of rise of off-state	V <sub>D</sub> =67%V <sub>DRM</sub> , R <sub>GK</sub> =1kΩ, T <sub>j</sub> =110°C	10	-	-	V/μs
V <sub>TM</sub>	On-state Voltage	I <sub>TM</sub> =1.2A, , Fig. 4	-	-	1.5	V
I <sub>DRM</sub> / I <sub>RRM</sub>	Repetitive peak off-state current	V <sub>D</sub> =V <sub>DRM</sub> /V <sub>RRM</sub> , T <sub>j</sub> =25°C	-	-	5	μA
		V <sub>D</sub> =V <sub>DRM</sub> /V <sub>RRM</sub> , T <sub>j</sub> =110°C	-	-	100	μA

## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R <sub>th</sub> (j-c)	Junction to case (AC)	SOT-23-3LK	23 °C/W
R <sub>th</sub> (j-a)	Junction to ambient	SOT-23-3LK	400 °C/W

## PART NUMBER



# CHARACTERISTICS CURVES

FIG.1: Maximum power dissipation versus RMS on-state current (full cycle)

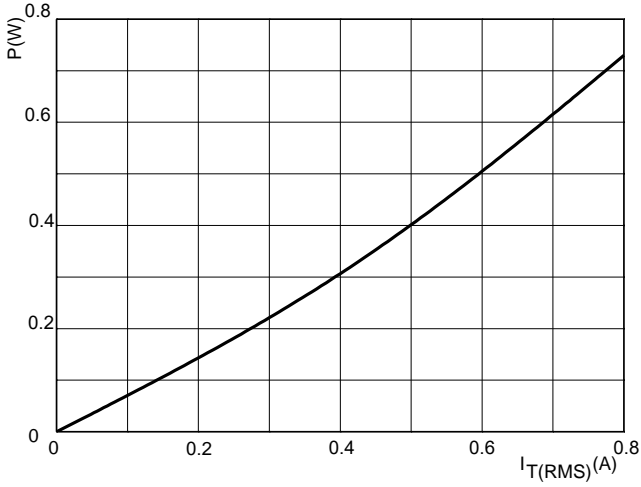


FIG.2: RMS on-state current versus case temperature (full cycle)

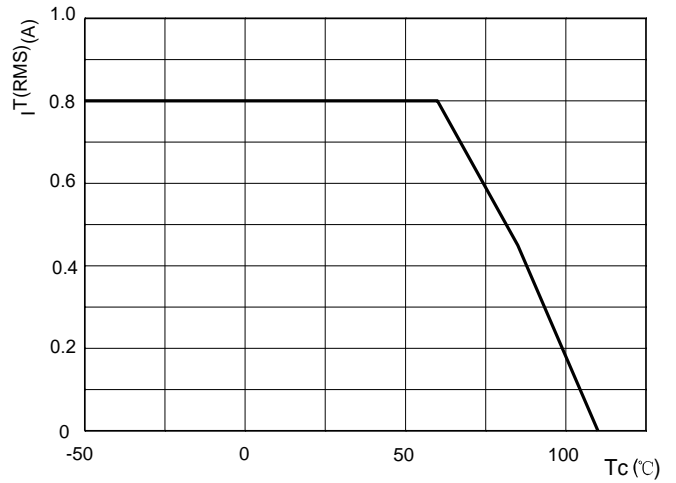


FIG.3: Surge peak on-state current versus number of cycles

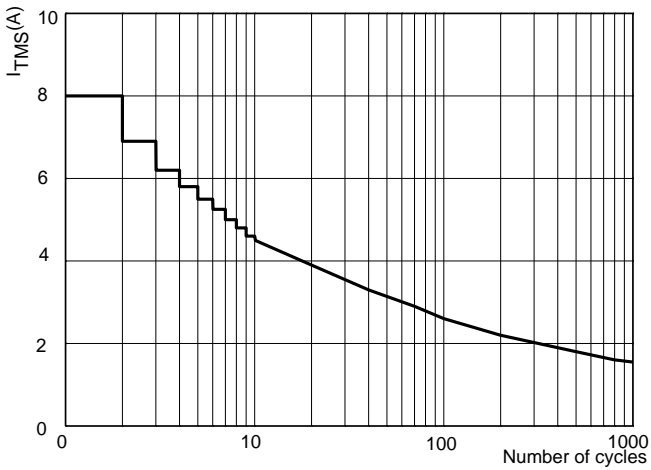


FIG.4: On-state characteristics (maximum values)

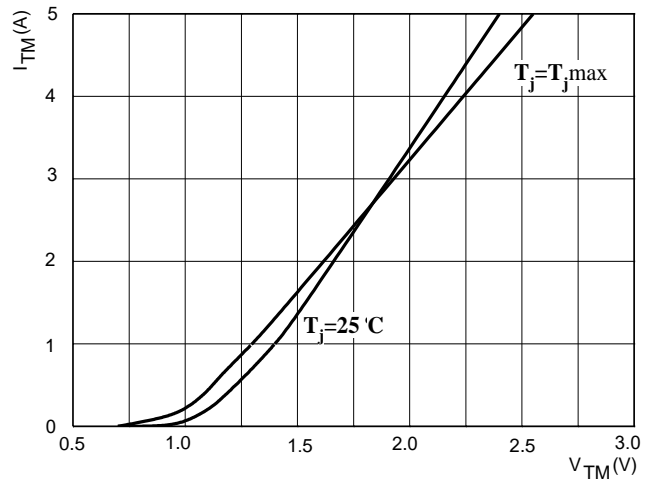


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$

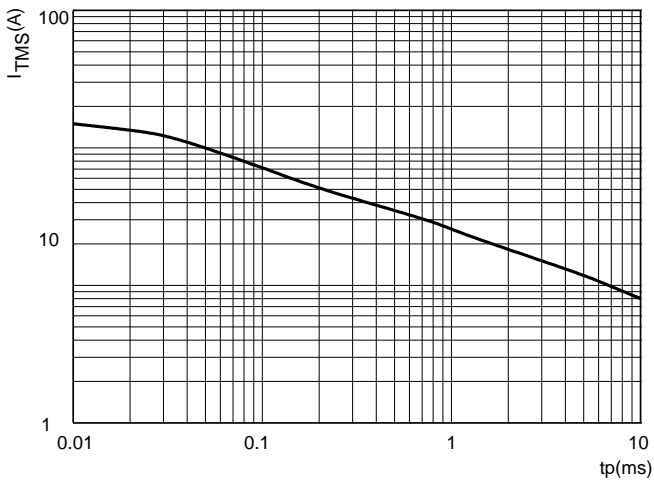
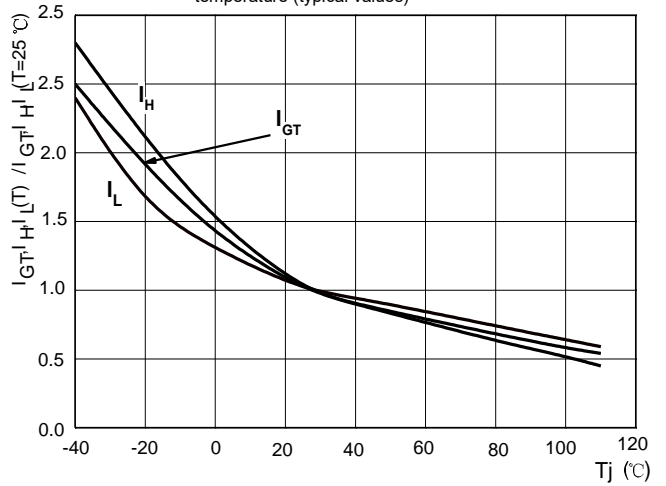
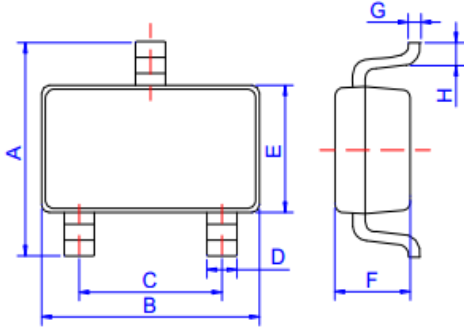


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



# SOT-23-3LK PACKAGE OUTLINE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.65		2.95	0.104		0.116
B		2.92			0.115	
C		1.90			0.075	
D	0.34		0.36	0.013		0.014
E		1.60			0.063	
F		1.17			0.046	
G		0.15			0.006	
H	0.25		0.55	0.010		0.022

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