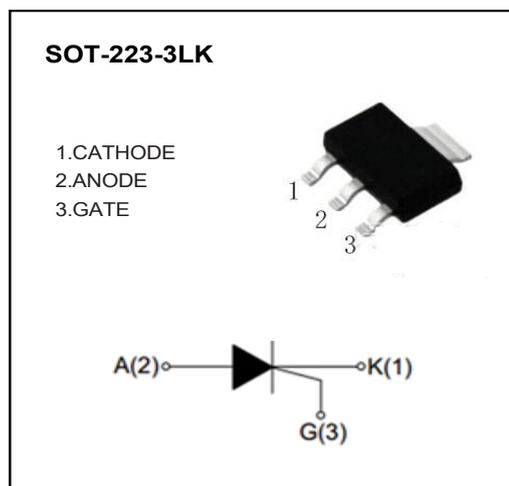


CS012T Sensitive Gate SCRs

MAIN CHARACTERISTICS

$I_{T(AV)}$	0.8A
V_{DRM}/V_{RRM}	600V
I_{GT}	200μA



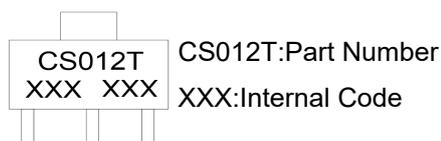
FEATURES

- 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 ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Test condition	Value	Unit
V_{DRM}/V_{RRM}	Repetitive peak off-state voltage	$T_j=25^{\circ}\text{C}$	600	V
$I_{T(AV)}$	Average on-state current	SOT-223-3LK($T_c \leq 75^{\circ}\text{C}$)	0.8	A
$I_{T(RMS)}$	RMS on-state current	SOT-223-3LK($T_c \leq 75^{\circ}\text{C}$),Fig.1,2	1.2	A
I_{TSM}	Non repetitive surge peak on-state current	Full sine wave , $T_j(\text{init})=25^{\circ}\text{C}$, $t_p=20\text{ms}$; Fig. 3,5	20	A
I^2t	I^2t value	$t_p=10\text{ms}$	2	A^2s
di_T/dt	Critical rate of rise of on-state current	$I_G=2 \cdot I_{GT}$, $t_r \leq 10\text{ns}$, $F=120\text{Hz}$, $T_j=110^{\circ}\text{C}$	50	$\text{A}/\mu\text{s}$
I_{GM}	Peak gate current	$t_p=20\mu\text{s}$, $T_j=110^{\circ}\text{C}$	0.2	A
$P_{G(AV)}$	Average gate power	$T_j=110^{\circ}\text{C}$	0.1	W
T_{STG}	Storage temperature		-40~+150	°C
T_j	Operating junction temperature		-40~+110	

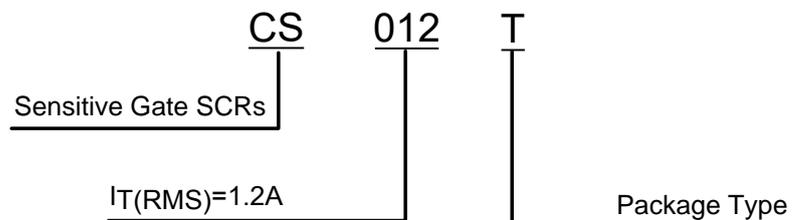
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test condition	Value			Unit
			Min	Nom	Max	
I _{GT}	Gate trigger current	V _D =12V, I _T =10mA, T _j =25°C, Fig. 6	10	-	200	μA
V _{GT}	Gate trigger voltage	V _D =12V, I _T =10mA, T _j =25°C	-	-	0.8	V
V _{GD}	Non-triggering gate voltage	V _D =V _{DRM} , T _j =125°C	0.2	-	-	V
I _H	Holding current	V _D =12V, I _G =0.5mA, R _{GK} =1kΩ, T _j =25°C,	-	-	4	mA
I _L	Latching current	Fig. 6	-	-	5	mA
dV _D /dt	Critical rate of rise of off-state	V _D =67%V _{DRM} , R _{GK} =1kΩ, T _j =110°C	10	-	-	V/μs
V _{TM}	On-state Voltage	I _{TM} =4A, , Fig. 4	-	-	1.5	V
I _{DRM} / I _{RRM}	Repetitive peak off-state current	V _D =V _{DRM} /V _{RRM} , T _j =25°C	-	-	5	μA
		V _D =V _{DRM} /V _{RRM} , T _j =110°C	-	-	100	μA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th} (j-c)	Junction to case (AC)	SOT-223-3LK	20 °C/W
R _{th} (j-a)	Junction to ambient	SOT-223-3LK	60 °C/W

PART NUMBER



CHARACTERISTICS CURVES

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

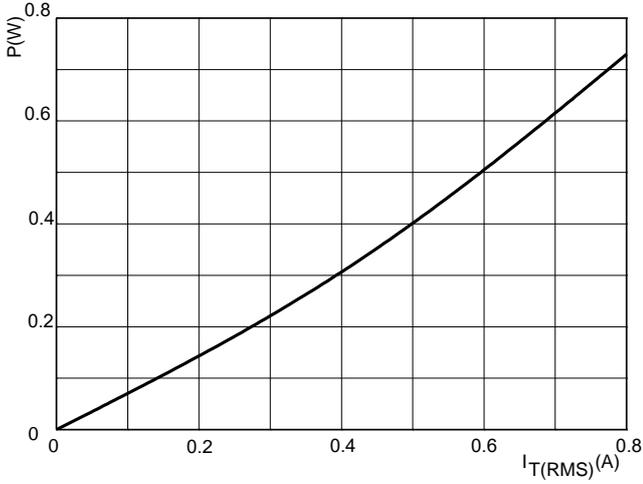


FIG.2: RMS on-state current versus case temperature (full cycle)

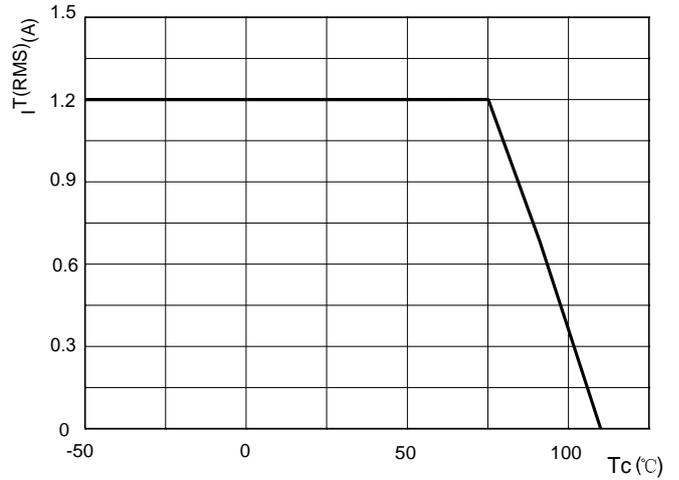


FIG.3: Surge peak on-state current versus number of cycles

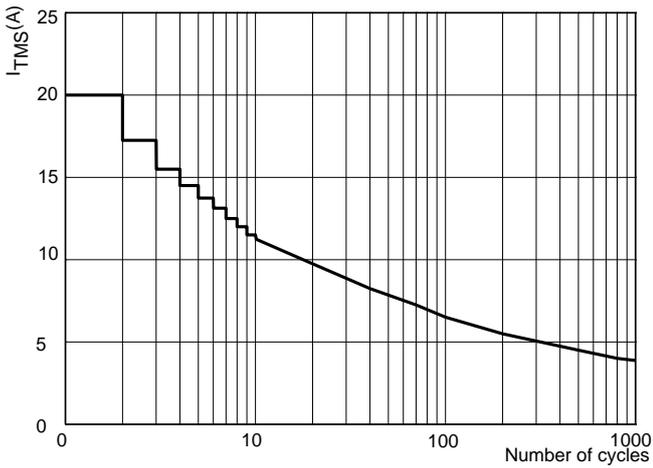


FIG.4: On-state characteristics (maximum values)

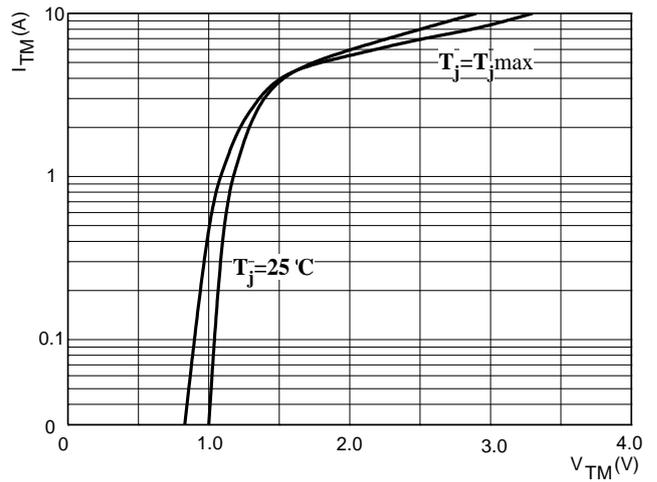


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

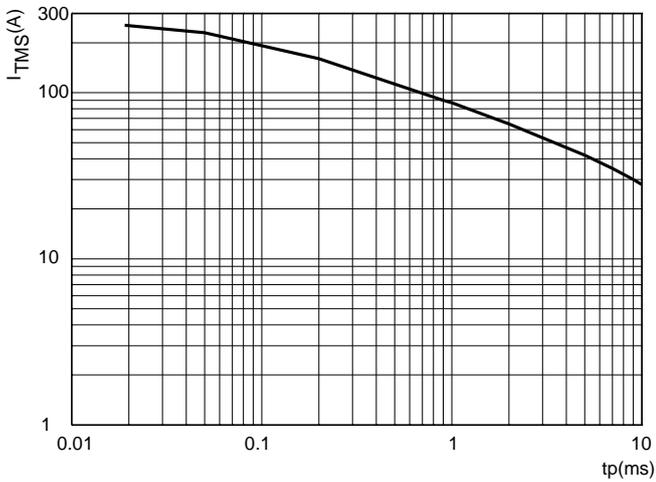
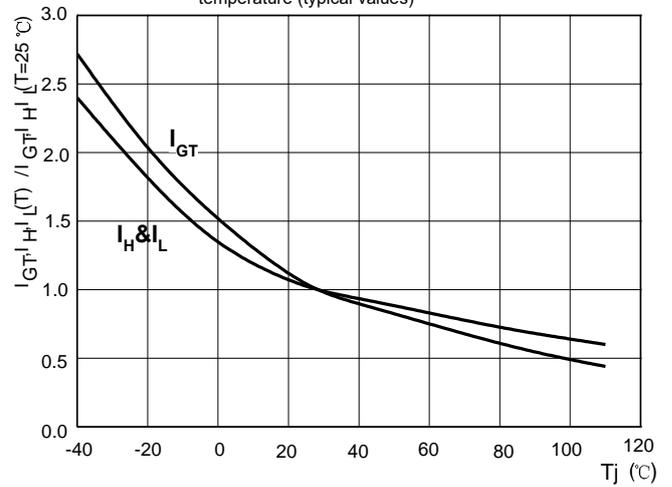
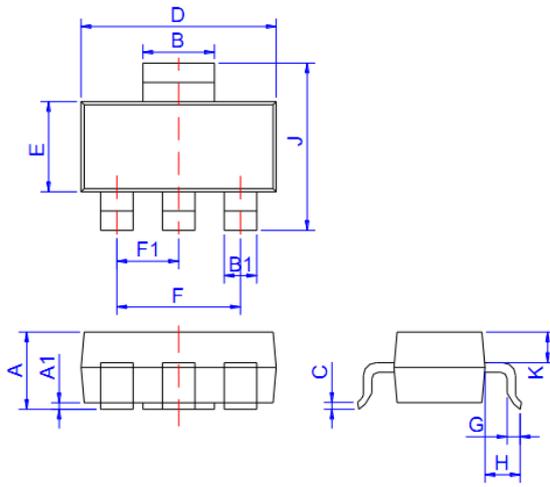


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



SOT-223-3LK PACKAGE OUTLINE DIMENSIONS



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	