

**0.8A Sensitive Gate SCRs**

**Product Summary**

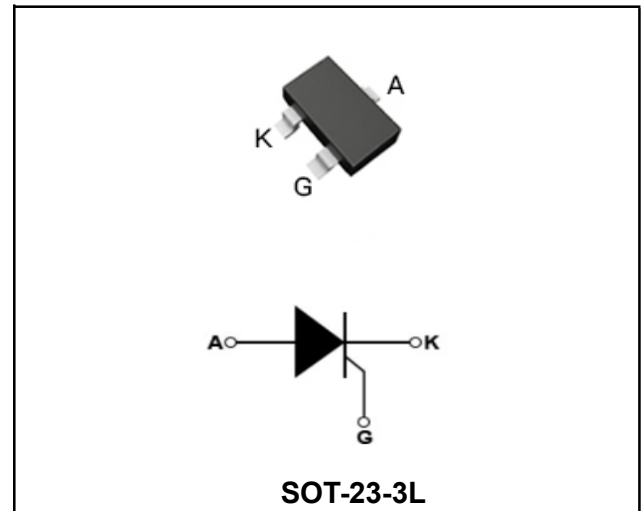
Symbol	Value	Unit
$I_{T(RMS)}$	0.8	A
$V_{DRM} V_{RRM}$	600	V
$I_{GT}$	10~200	$\mu A$

**Features**

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference

**Application**

Power charger, T-tools, massager, solid staterelay, AC Motor speed regulation and so on.



**Order Information**

Part Number	Package	Marking	Packing	Packing Quantity
MCR100-8	SOT-23-3L	100-8	13" T&R	3000PCS/Tape

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	$V_{DRM}$	600	V
Repetitive peak reverse voltage	$V_{RRM}$	600	V
RMS on-state current	$I_{T(RMS)}$	0.8	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	8	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	0.35	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di_T/dt$	50	A/us
Peak gate current	$I_{GM}$	0.2	A
Average gate power dissipation	$P_G (AV)$	0.1	W
Junction Temperature	$T_J$	-40~+110	°C
Storage Temperature	$T_{STG}$	-40 ~+150	°C

**Electrical characteristics (TA=25°C, unless otherwise noted)**

Parameter	Symbol	Test Condition	Value		Unit
			Min	Max	
Gate trigger current	$I_{GT}$	$V_o=12V I_T=10mA T_j=25^\circ C$	10	200	<b>uA</b>
Gate trigger voltage	$V_{GT}$		-	0.8	<b>V</b>
Gate non-trigger voltage	$V_{GD}$	$V_D = 1/2V_{DRM} T_j=110^\circ C$	0.2	-	<b>V</b>
latching current	$I_L$	$V_D = 12V I_G=0.5mA$ $R_{GK}=1K\Omega T_j=25^\circ C$	-	4	<b>mA</b>
Holding current	$I_H$		-	5	<b>mA</b>
Critical-rate of rise of commutation voltage	$dV_D/dt$	$V_D=2/3V_{DRM}$ Gate Open $T_j=110^\circ C$	10	-	<b>V/us</b>

**STATIC CHARACTERISTICS**

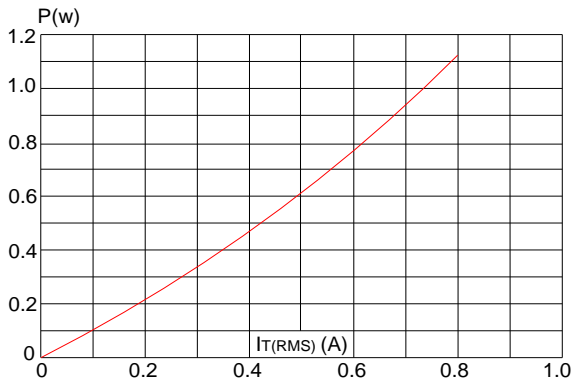
Forward "on" voltage	$V_{TM}$	$I_{TM} = 1.2A \quad t_p=380us$		-	1.7	<b>V</b>
Repetitive Peak Off-State Current	$I_{DRM}$	$V_D=V_{DRM} \quad V_R=V_{RRM}$	$T_j=25^\circ C$	-	10	<b>UA</b>
Repetitive Peak Reverse Current	$I_{RRM}$		$T_j=110^\circ C$	-	0.1	<b>mA</b>

**THERMAL RESISTANCES**

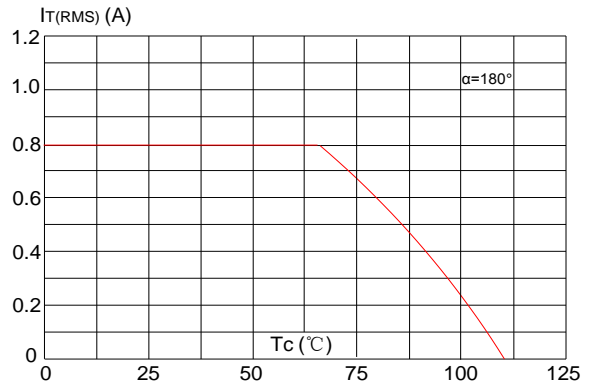
Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	75	<b>°C/W</b>
	$R_{th(j-a)}$	Junction to ambient	TYP.	150	<b>°C/W</b>

Typical Characteristics

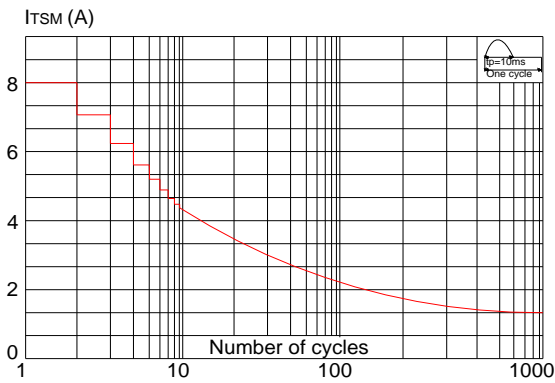
**FIG.1** Maximum power dissipation versus RMS on-state current



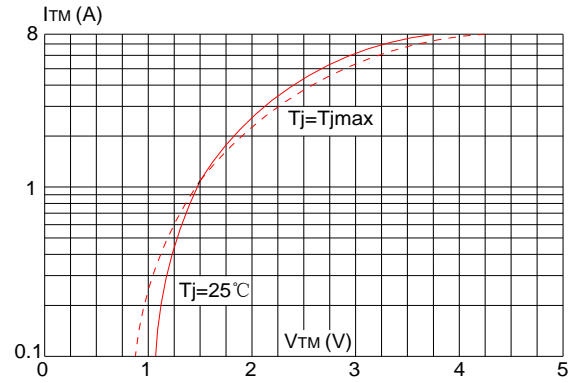
**FIG.2:** RMS on-state current versus case temperature



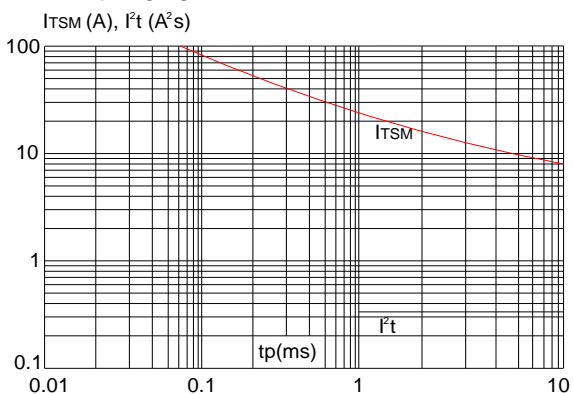
**FIG.3:** Surge peak on-state current versus number of cycles



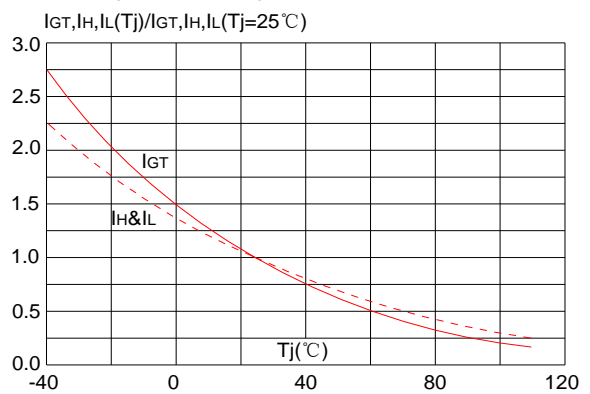
**FIG.4:** On-state characteristics (maximum values)



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$



**FIG.6:** Relative variations of gate trigger current, holding current and latching current versus junction temperature



**Ordering information**

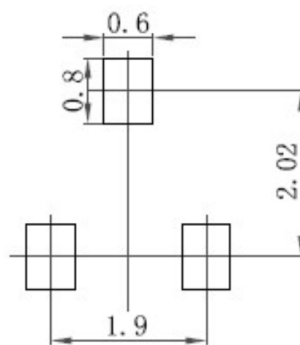
Package	Packing Description	Base Quantity	Packing Quantity
SOT23-3L	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

**Package Dimensions**

**SOT23-3L**

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49.2
A1	0.10		3.93	
A2	1.05	1.15	41	45
b	0.30	0.50	12	20
c	0.10	0.20	3.93	7.9
D	2.82	3.02	111	119
E	1.50	1.70	59	67
E1	2.65	2.95	104	116
e	0.95		37.4	
e1	1.80	2.00	71	78
L	0.30	0.066	12	26
Θ	8°			

**The recommended mounting pad size**



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