

**0.8A Sensitive Gate SCRs**

**Product Summary**

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

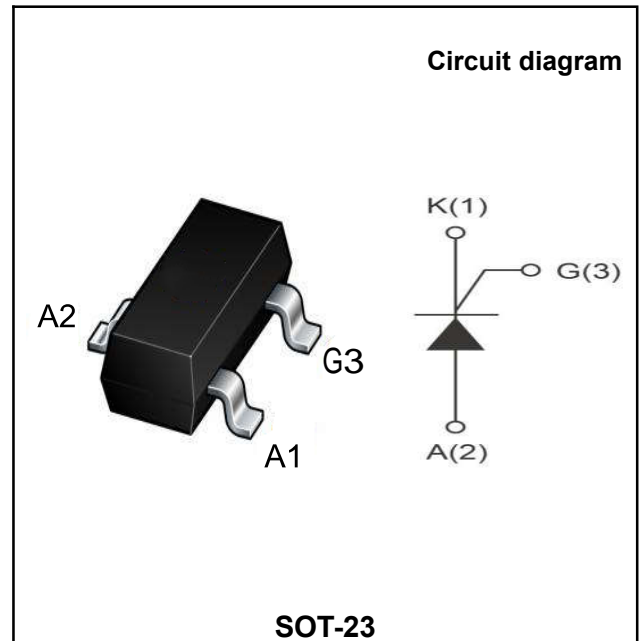


**Features**

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	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
Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di_T/dt$	50	A/ $\mu s$
Peak gate current	$I_{GM}$	0.1	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Junction Temperature	$T_J$	-40~+125	°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	$I_{GT}$	$V_b=12V I_T=10mA T_j=25^\circ C$	-	200	<b>uA</b>
Gate trigger voltage	$V_{GT}$		-	0.8	<b>V</b>
Gate non-trigger voltage	$V_{GD}$	$V_D = 1/2 V_{DRM} T_j=110^\circ C$ $V_{DRM} T_j=125^\circ C$	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**

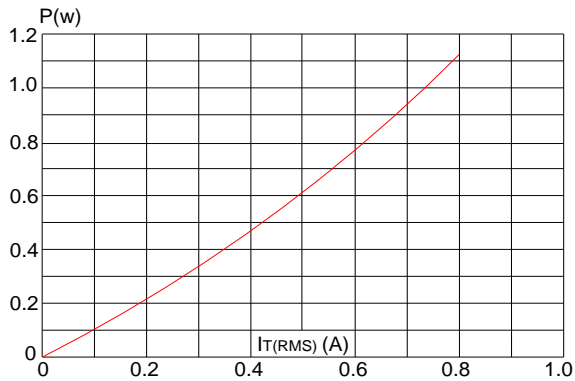
Forward "on" voltage	$V_{TM}$	$I_{TM} = 1.2A \quad t_p=380us$		-	1.7	<b>V</b>
Repetitive Peak Off-State Current	$I_{DRM}$	$V_D=V_{DRM} \quad V_R=V_{RRM}$	$T_j=25^\circ C$	-	10	<b>UA</b>
Repetitive Peak Reverse Current	$I_{RRM}$					

**THERMAL RESISTANCES**

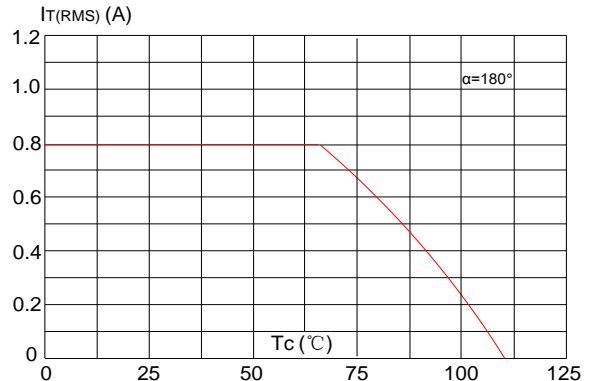
Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	75	<b>°C/W</b>
	$R_{th(j-a)}$	Junction to ambient	TYP.	150	<b>°C/W</b>

Typical Characteristics

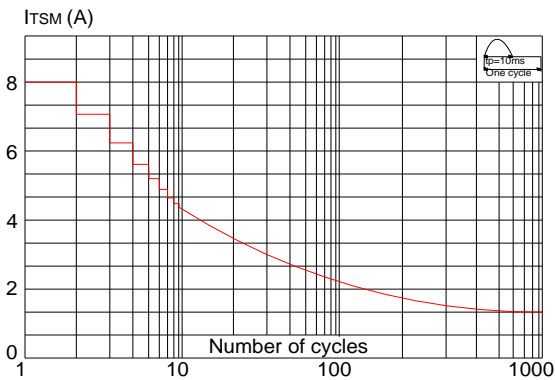
**FIG.1** Maximum power dissipation versus RMS on-state current



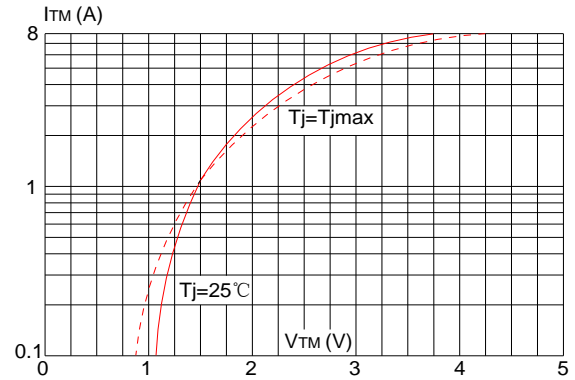
**FIG.2:** RMS on-state current versus case temperature



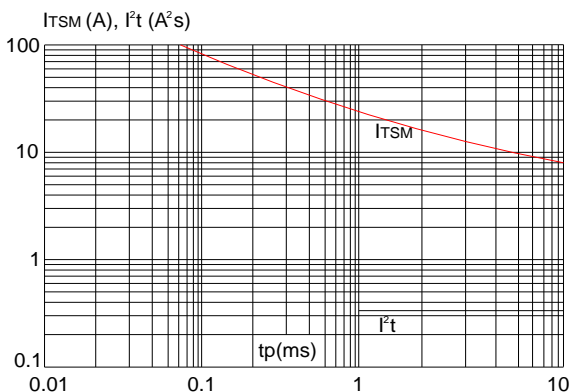
**FIG.3:** Surge peak on-state current versus number of cycles



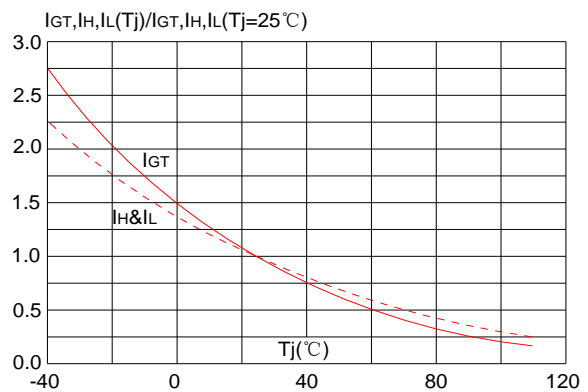
**FIG.4:** On-state characteristics (maximum values)

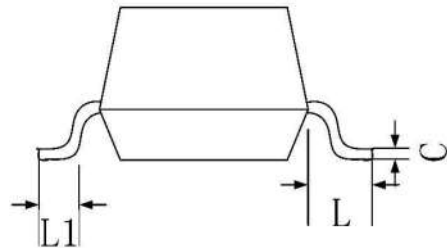
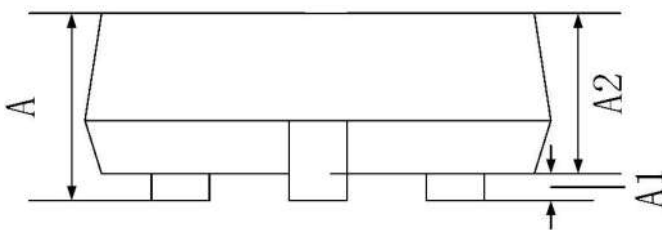
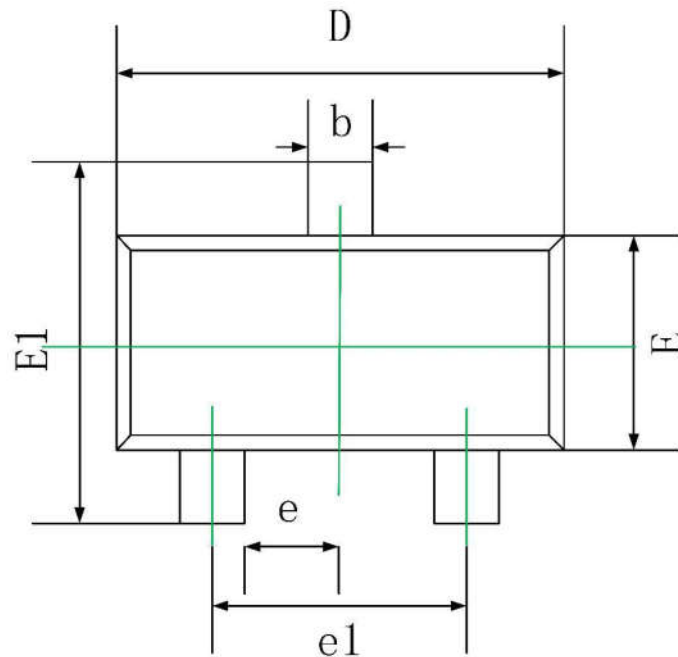


**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$



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





**SOT-23**

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP.		0.037 TYP.	
e1	1.800	2.000	0.071	0.079
L	0.550 REF.		0.022 REF.	
L1	0.300	0.500	0.012	0.020