

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	μA

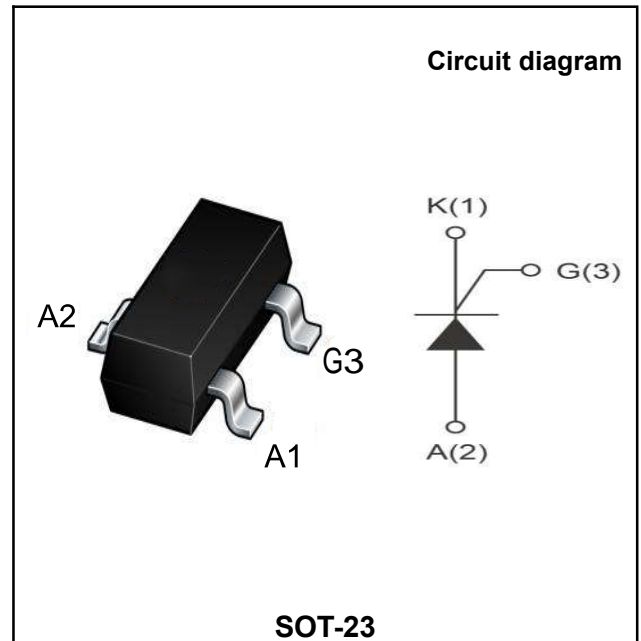


Features

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/ μs
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}	$V_D=12V I_T=10mA T_j=25^\circ C$	-	200	uA
Gate trigger voltage	V_{GT}		-	0.8	V
Gate non-trigger voltage	V_{GD}	$V_D = 1/2V_{DRM} T_j=110^\circ C$ $V_{DRM} T_j=125^\circ C$	0.2	-	V
latching current	I_L	$V_D = 12V I_G=0.5mA$ $R_{GK}=1K\Omega T_j=25^\circ C$	-	4	mA
Holding current	I_H		-	5	mA
Critical-rate of rise of commutation voltage	dV_D/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=110^\circ C$	10	-	V/us

STATIC CHARACTERISTICS

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

THERMAL RESISTANCES

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

Typical Characteristics

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

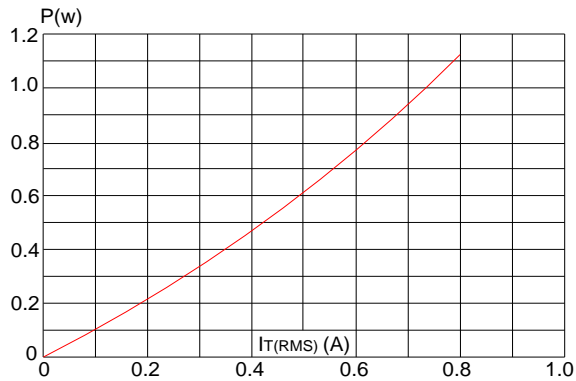


FIG.2: RMS on-state current versus case temperature

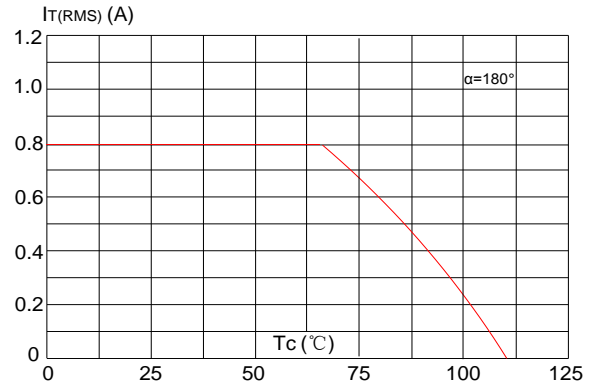


FIG.3: Surge peak on-state current versus number of cycles

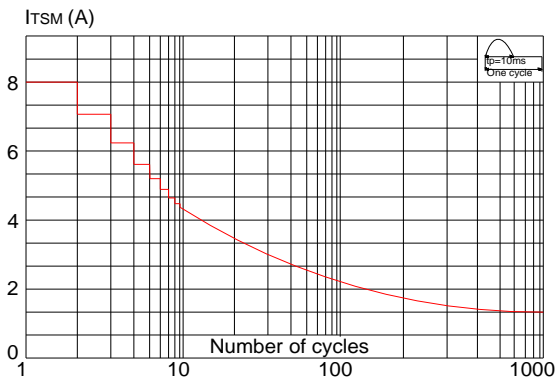


FIG.4: On-state characteristics (maximum values)

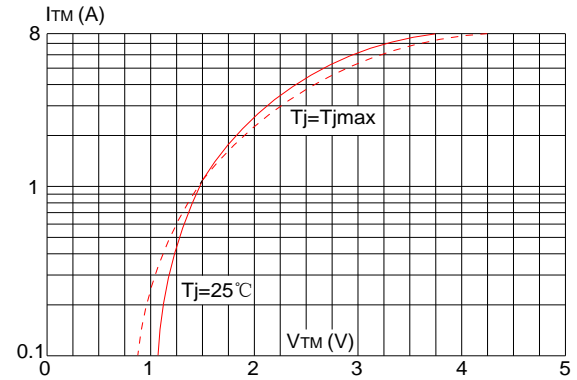


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t

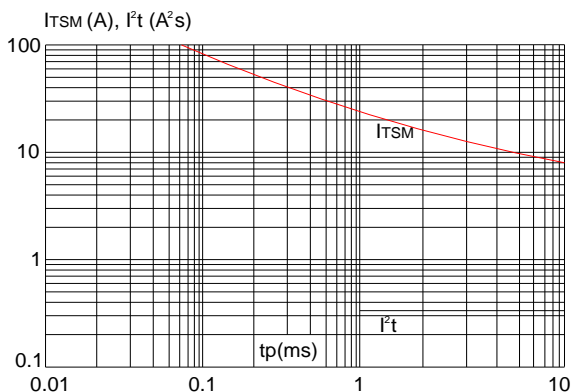
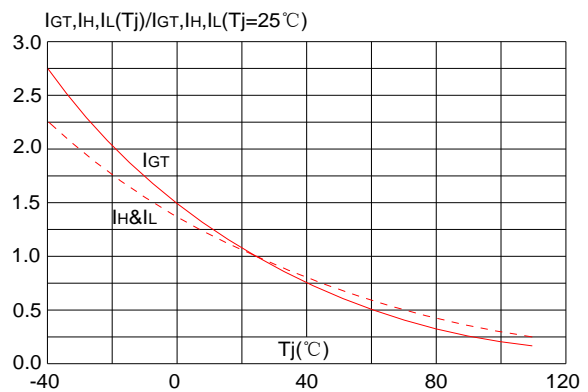
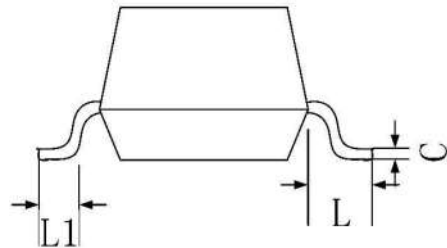
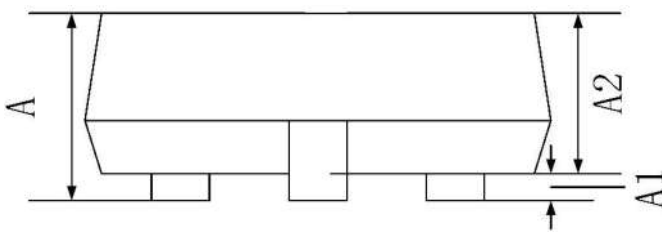
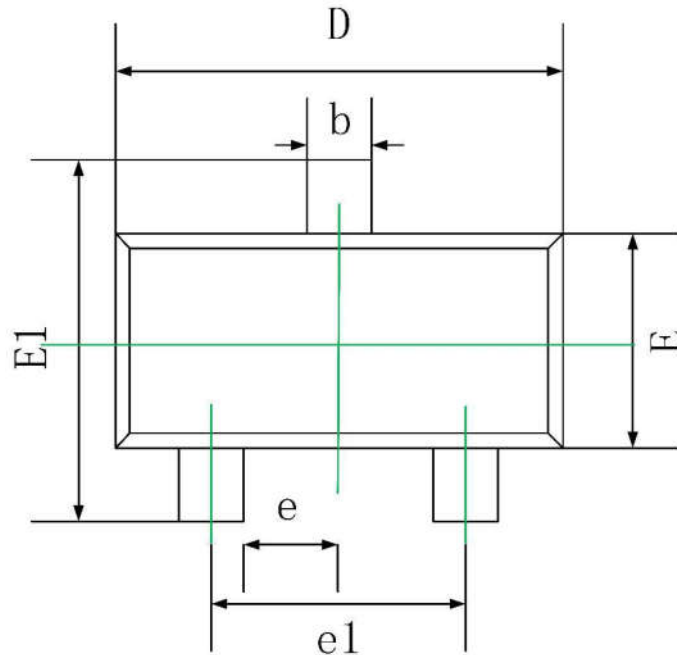


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature





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

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