MCR100-8-23L

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	μA

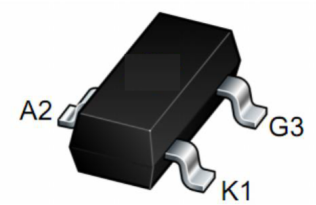
Feature

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 state relay, AC Motor speed regulation and so on.

Package



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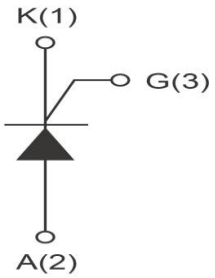
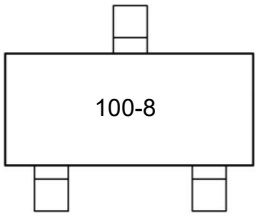
Circuit diagram



Marking



Absolute maximum ratings (Ta=25℃ 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^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})	dI_T/dt	50	A/μs
Peak gate current	I_{GM}	0.2	A
Average gate power dissipation	$P_{G(AV)}$	0.1	W
Junction Temperature	T_J	-40 ~ +110	℃
Storage Temperature	T_{STG}	-40 ~ +150	℃

Electrical characteristics (T_A=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℃		10	200	μA
Gate trigger voltage	V_{GT}			-	0.8	V
Gate non-trigger voltage	V_{GD}	V_D =1/2V_{DRM} T_j =110℃		0.2	-	V
latching current	I_L	V_D =12V I_G=0.5mA		-	4	mA
Holding current	I_H	R_{GK}=1kΩ T_j =25℃		-	5	mA
Critical-rate of rise of commutation voltage	dV_D/dt	V_D=2/3V_{DRM} Gate Open T_j =110℃		10	-	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =1.2A tp=380μs		-	1.7	V
Repetitive Peak Off-State Current	I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	-	10	μA
Repetitive Peak Reverse Current	I_{RRM}		T_j=110℃	-	0.1	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case		TYP.	75	℃/W
	Rth(j-a)	Junction to ambient		TYP.	150	℃/W

Typical Characteristics

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

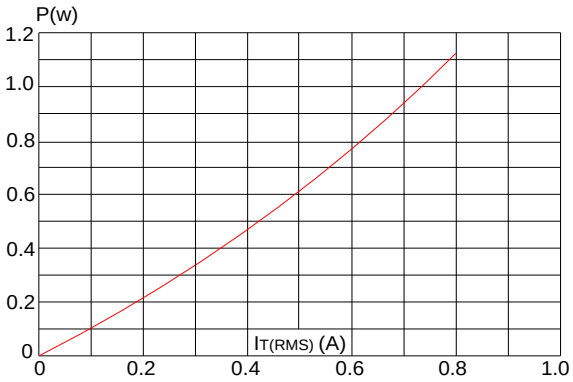


FIG.2: RMS on-state current versus case temperature

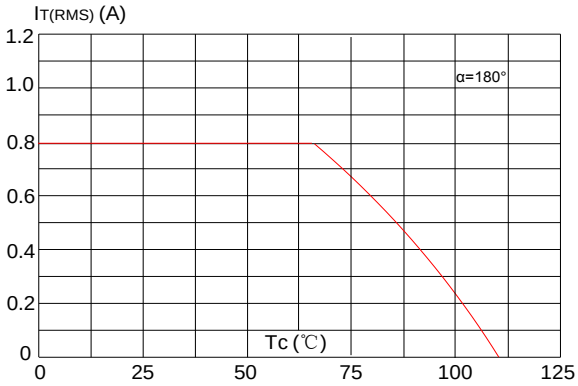


FIG.3: Surge peak on-state current versus number of cycles

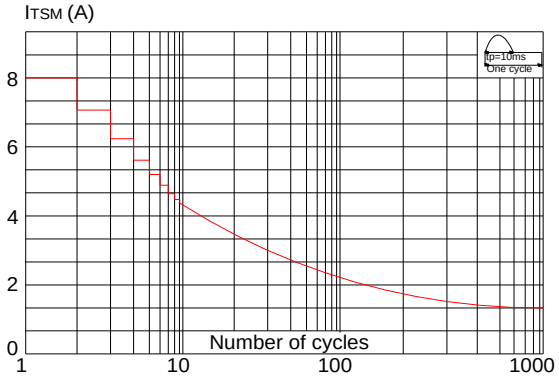


FIG.4: On-state characteristics (maximum values)

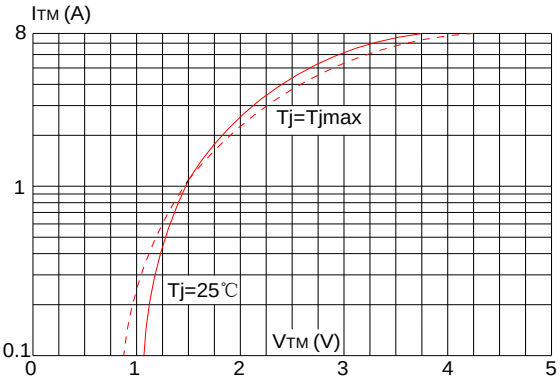


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponging value of I^2t

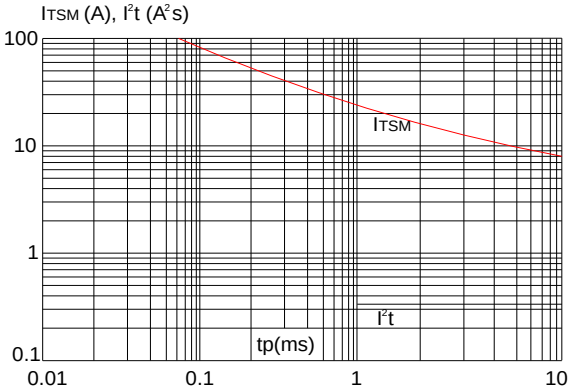
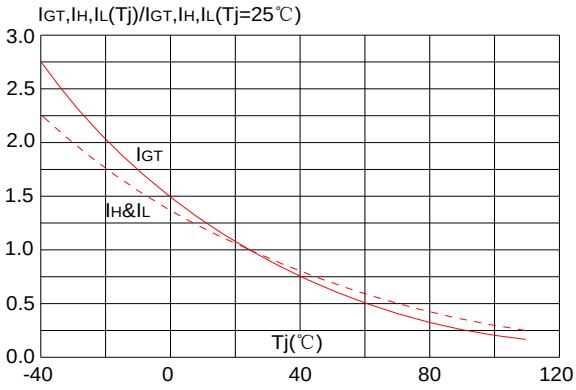
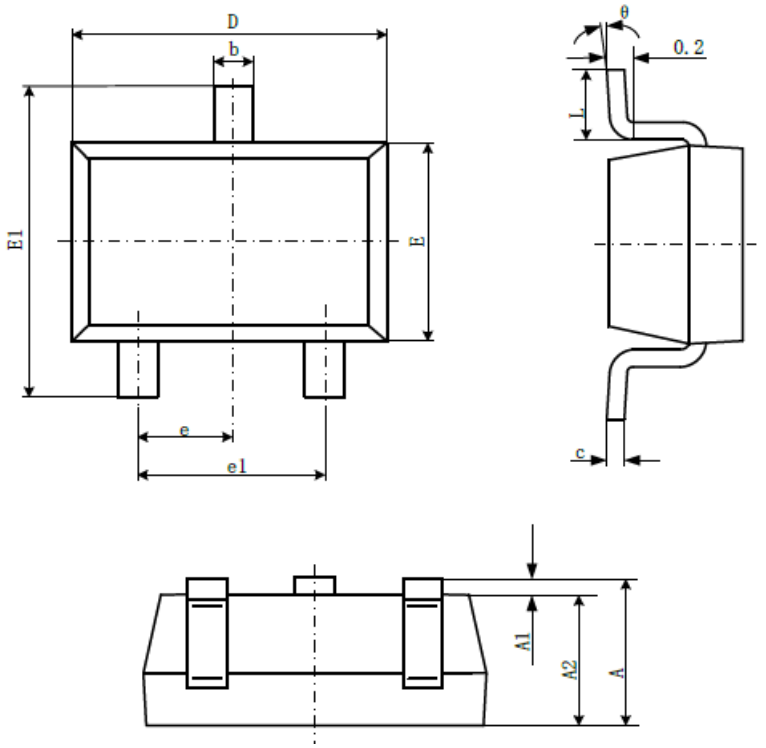


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



SOT-23-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°