2P4M-89-3L

2.0A Sensitive Gate SCRs

Product Summary

Symbol	Value	Unit
$I_{T(AV)}$	2.0	A
V_{DRM} V_{RRM}	600	V
I_{GT}	200	μA

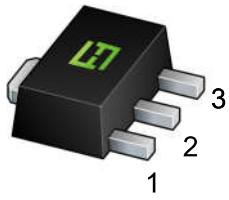
Feature

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

Application

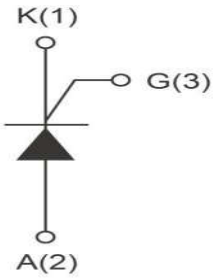
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

Package

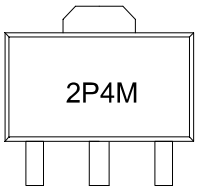


SOT-89-3L

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	$I_{T(RMS)}$	3	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	20	A
I^2t value for fusing (tp=10ms)	I^2t	2	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 ºC, 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		-	3	mA
Holding current	I_H	R_{GK}=1kΩ T_j =25℃		-	4	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} =4A tp=380μs		-	1.55	V
Repetitive Peak Off-State Current	I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	-	5	μA
Repetitive Peak Reverse Current	I_{RRM}		T_j=110℃	-	0.1	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case		TYP.	20	℃/W
	Rth(j-a)	Junction to ambient		TYP.	60	℃/W

Typical Characteristics

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

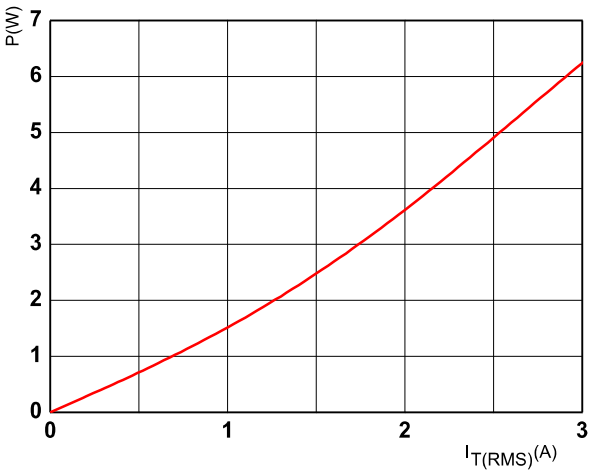


FIG.2: RMS on-state current versus case temperature (full cycle)

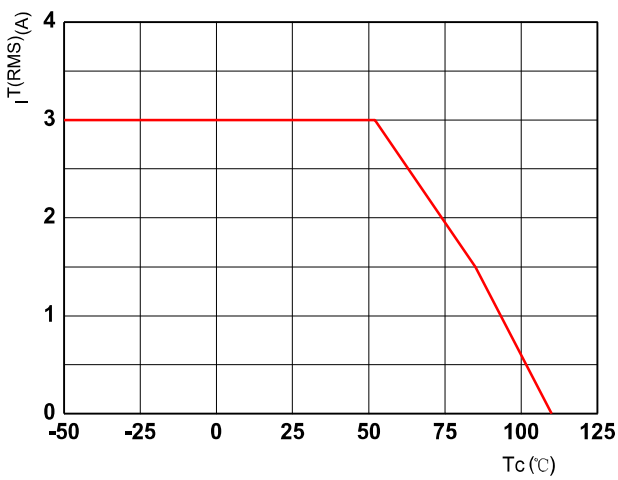


FIG.3: Surge peak on-state current versus number of cycles

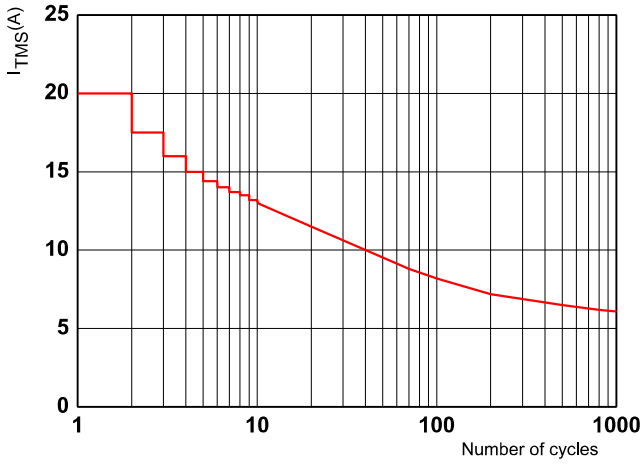


FIG.4: On-state characteristics (maximum values)

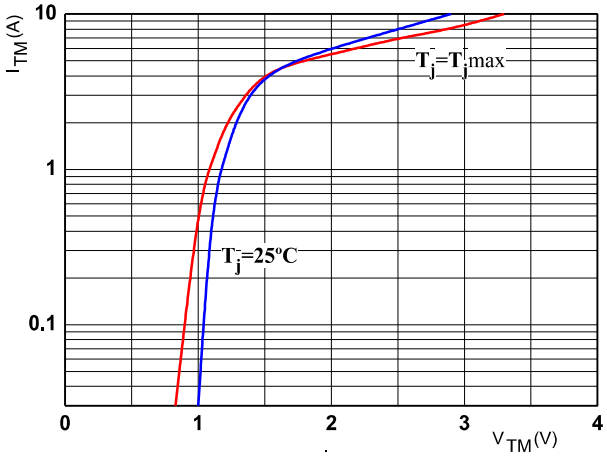


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

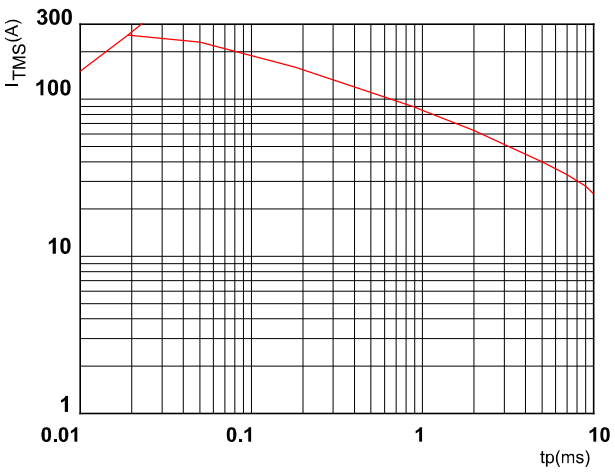
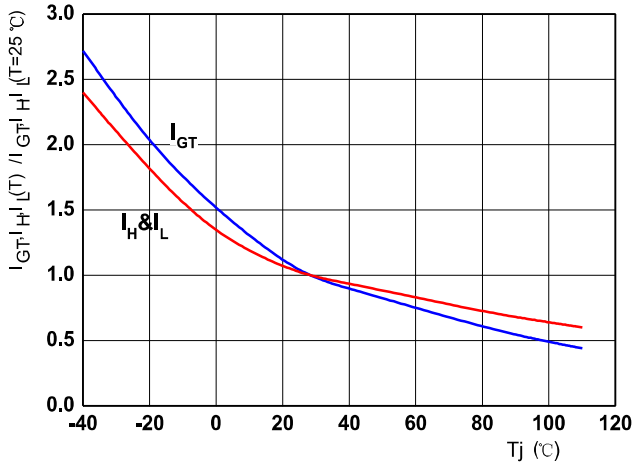
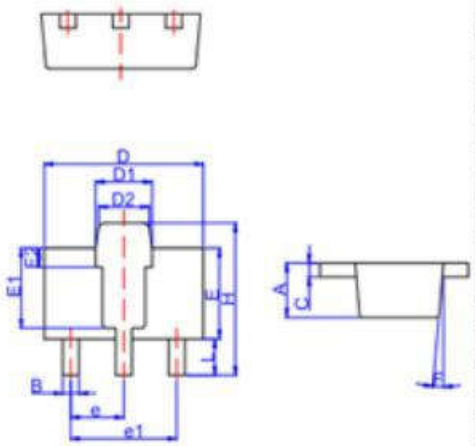


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



SOT-89-3L Package Information



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.35		0.52	0.014		0.020
C	0.35		0.46	0.014		0.018
D	4.30		4.70	0.169		0.185
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.30		2.70	0.091		0.106
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5°			5°	
H	3.94		4.0	0.155		0.157
L	0.80		1.20	0.031		0.047