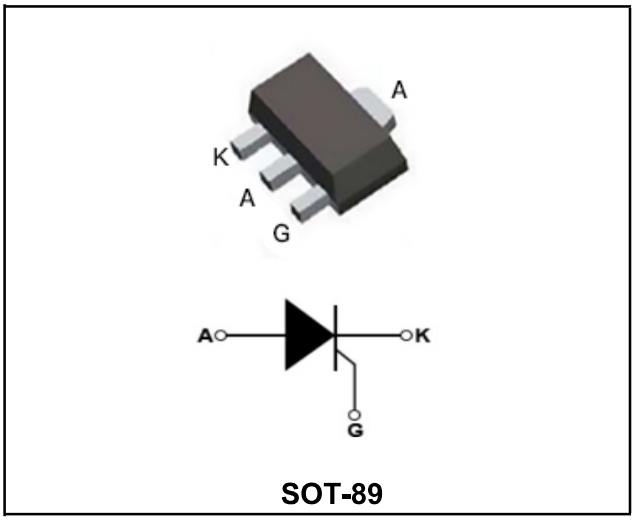
2.0A Sensitive Gate SCRs

Product Summary

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



SOT-89

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 state relay, AC Motor speed regulation and so on.

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	$I_{T(RMS)}$	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 x I_{GT})	dI_T/dt	50	A/ps
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 (T_A=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition		Value		Unit
				Min	Max	
Gate trigger current	I_{GT}	V_D=12VI_T=10mATj=25°C		10	200	uA
Gate trigger voltage	V_{GT}			-	0.8	V
Gate non-trigger voltage	V_{GD}	V_D=1/2V_{DRM}Tj=110°C		0.2	-	V
latching current	I_L	V_D =12V I_G=0.5mA		-	3	mA
Holding current	I_H	R_{GK}=1kΩTj=25°C		-	4	mA
Critical-rate of rise of commutation voltage	dV_D/dt	V_D=2/3V_{DRM} Gate Open Tj=110°C		10	-	V/ps
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =4A tp=380ps		-	1.55	V
Repetitive Peak Off-State Current	I_{DRM}	V_D=$V_{DRM}$$V_R$=$V_{RRM}$	T_j=25°C	-	5	uA
Repetitive Peak Reverse Current	I_{RRM}		T_j=110°C	-	0.1	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case		TYP.	20	°C/W
	Rth(j-a)	Junction to ambient		TYP.	60	°C/W

Typical Characteristics

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

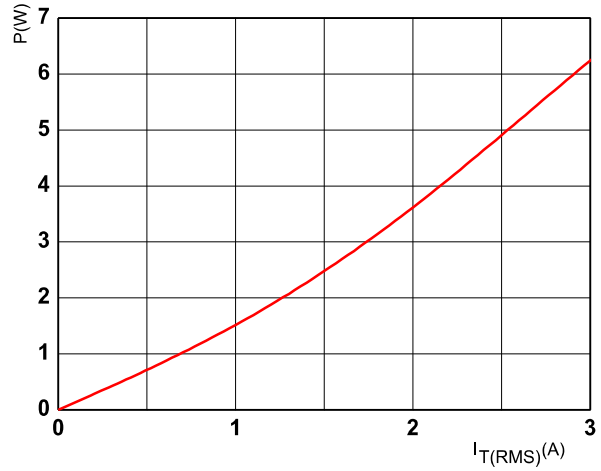


FIG.2: RMS on-state current versus case temperature (full cycle)

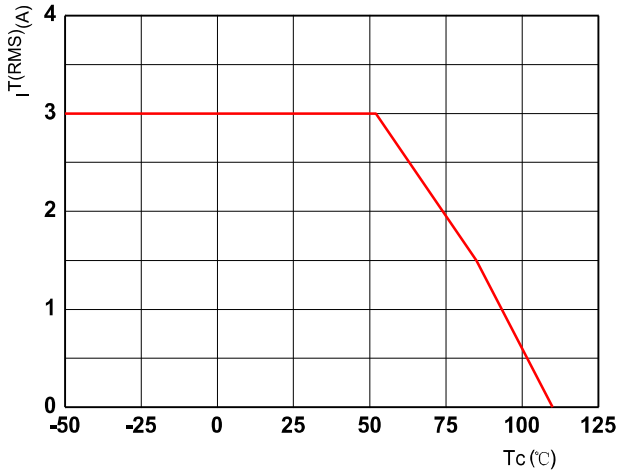


FIG.3: Surge peak on-state current versus number of cycles

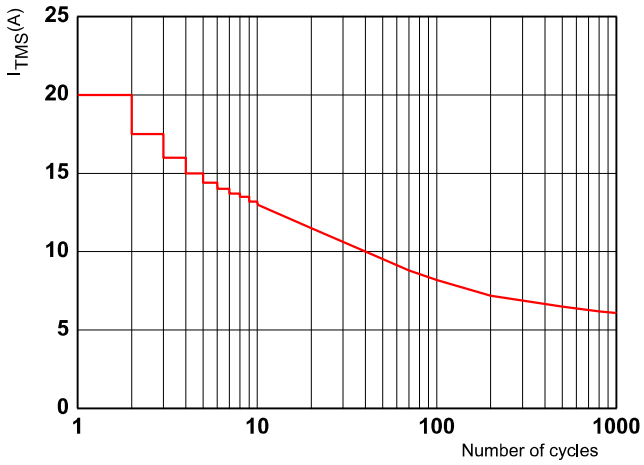


FIG.4: On-state characteristics (maximum values)

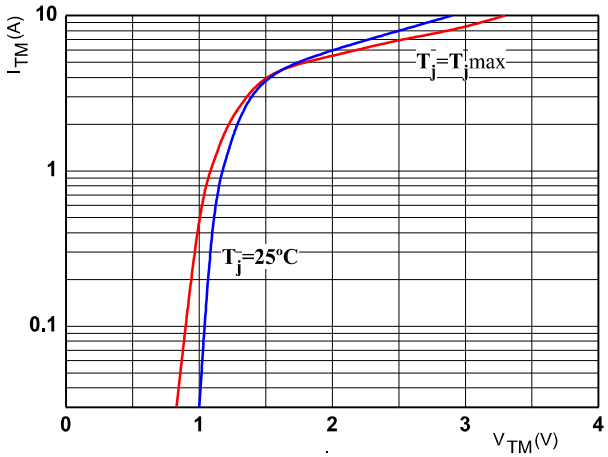


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

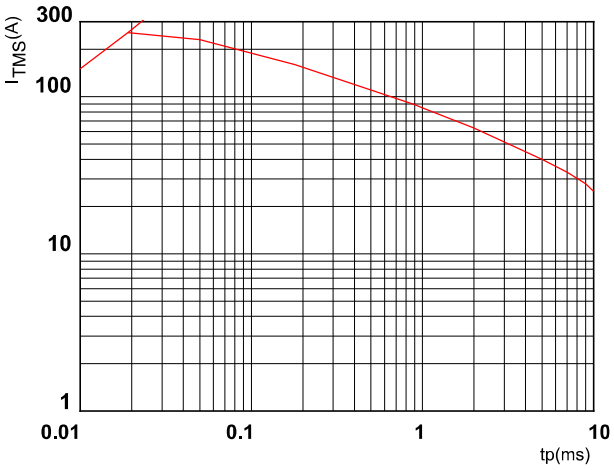
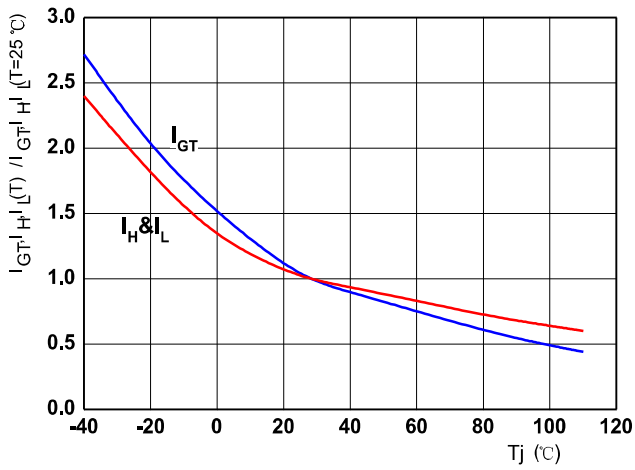


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)

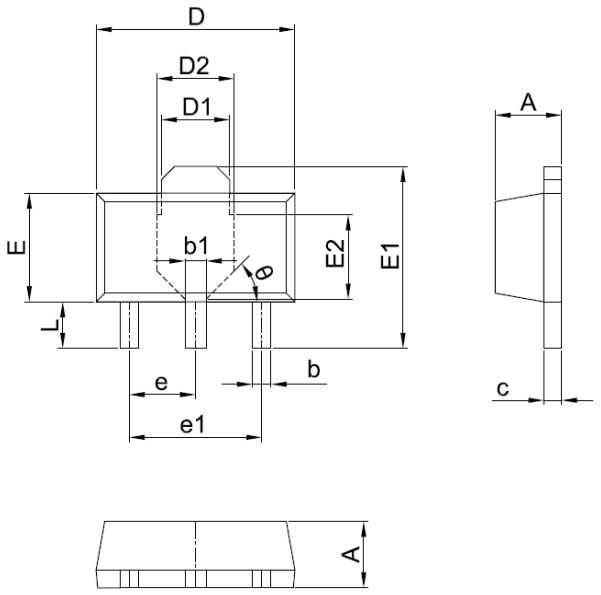


Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

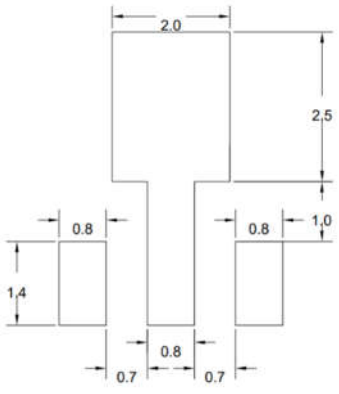
Package Dimensions

SOT-89



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



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