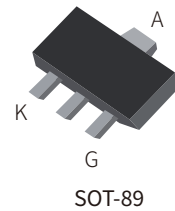


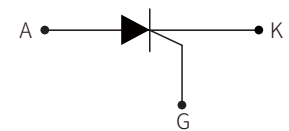
## FEATURES

- | High voltage capability
- | Planar passivated for voltage ruggedness and reliability
- | Sensitive gate



## APPLICATIONS

- | Ignition circuits
- | Lighting ballasts
- | Protection circuits
- | Switched mode power supplies



Schematic Symbol

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{\text{DRM}} / V_{\text{RRM}}$	400	V
RMS on-state current ( $T_c \leq 60^\circ\text{C}$ )	$I_{\text{T(RMS)}}$	0.8	A
Non repetitive surge peak on-state current ( $t_p=20\text{ms}$ )	$I_{\text{TSM}}$	8	
I <sup>2</sup> t value for fusing ( $t_p=10\text{ms}$ )	I <sup>2</sup> t	0.32	A <sup>2</sup> S
Critical rate of rise of on-state current	di/dt	50	A/ $\mu\text{s}$
Peak gate current ( $t_p=20\mu\text{s}$ , $T_j=110^\circ\text{C}$ )	$I_{\text{GM}}$	0.2	A
Average gate power dissipation ( $T_j=125^\circ\text{C}$ )	$P_{\text{G(AV)}}$	0.1	W
Average gate power dissipation ( $T_j=110^\circ\text{C}$ )	$P_{\text{GM}}$	0.5	W
Storage junction temperature range	$T_{\text{STG}}$	-40~+150	°C
Operating junction temperature range	$T_j$	-40~+125	

## ELECTRICAL CHARACTERISTICS (T<sub>j</sub>=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		Min.	Typ.	Max.	
I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω	-	30	200	uA
V <sub>GT</sub>		-	0.6	0.8	V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> , T <sub>J</sub> =110°C	0.2	-	-	
I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub>	-	-	5	mA
I <sub>H</sub>	I <sub>T</sub> =0.05A	-	-	3	
dV <sub>D</sub> /dt	V <sub>D</sub> =67%V <sub>DRM</sub> , T <sub>J</sub> =125°C	10	-	-	V/μs

## STATIC CHARACTERISTICS

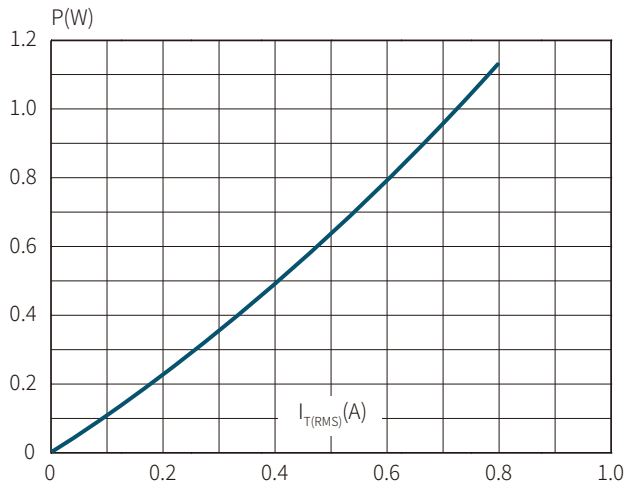
Symbol	Parameter	Value	Unit
V <sub>TM</sub>	I <sub>T</sub> =1A, t <sub>p</sub> =380μs, T <sub>J</sub> =25°C	≤1.5	V
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> , V <sub>R</sub> =V <sub>RRM</sub> , T <sub>J</sub> =25°C	≤5	uA
I <sub>RRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> , V <sub>R</sub> =V <sub>RRM</sub> , T <sub>J</sub> =110°C	≤100	

## THERMAL RESISTANCES

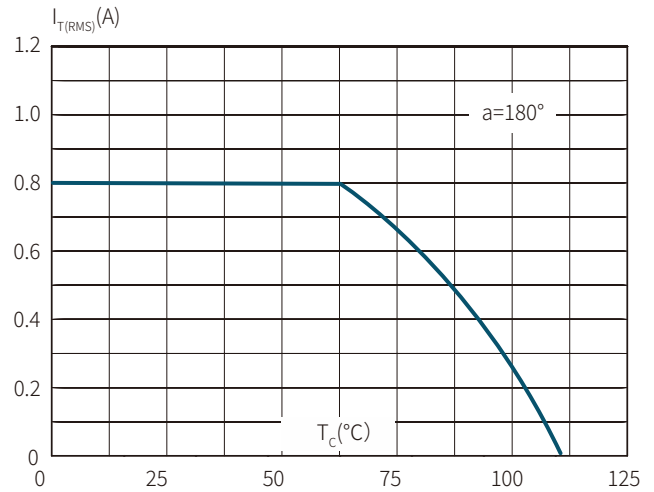
Symbol	Parameter	Value	Unit
R <sub>th(j-c)</sub>	Junction to case(AC)	75	°C/W

# PARAMETER CHARACTERISTIC CURVE

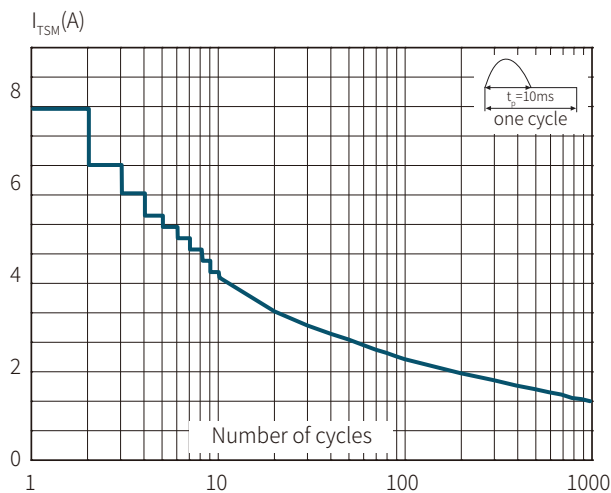
**FIG.1 Maximum power dissipation versus RMS on-state current**



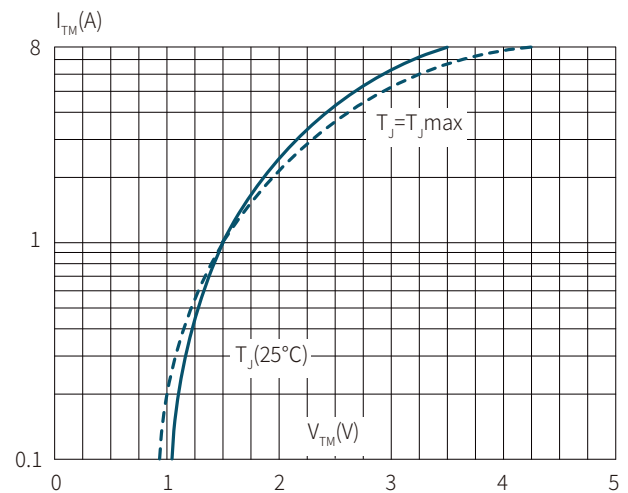
**FIG.2 RMS on-state current versus case temperature**



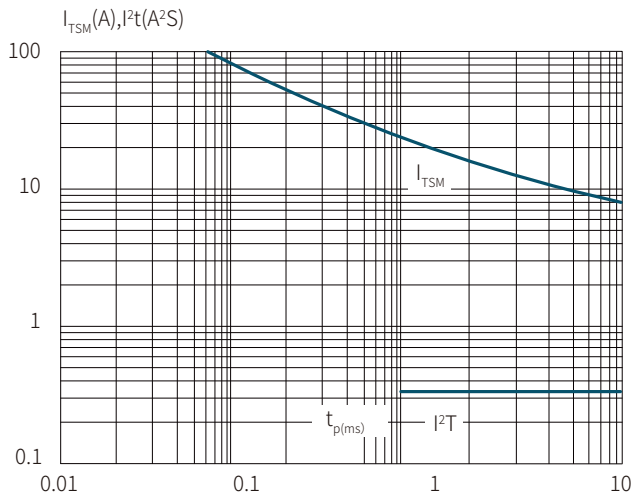
**FIG.3 Surge peak on-state current versus number of cycles**



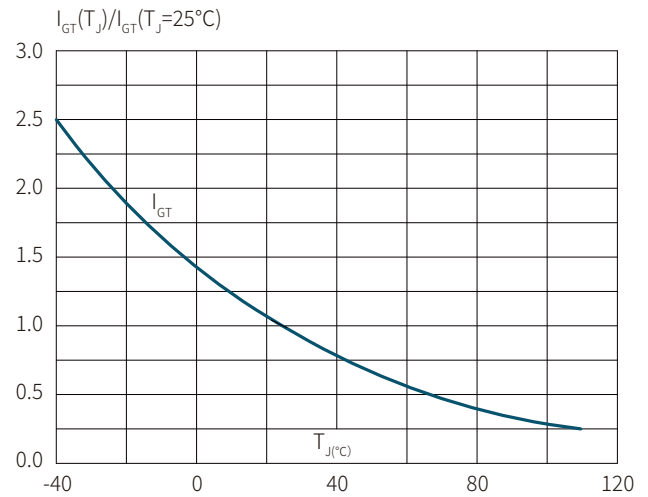
**FIG.4 On-state characteristics (maximum values)**



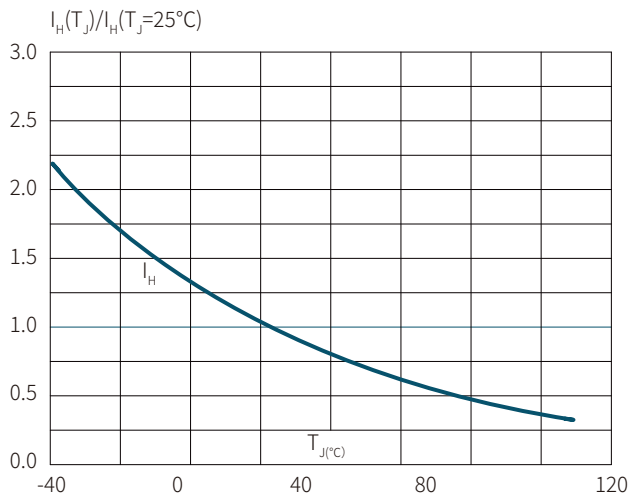
**Fig.5 non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$**



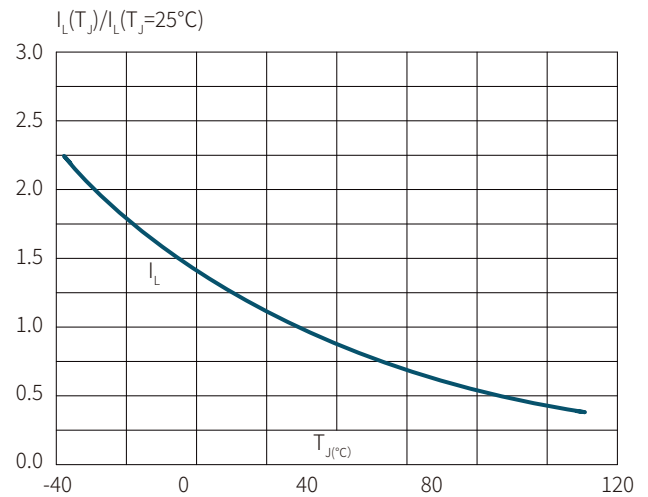
**FIG.6 Relative variations of gate trigger current versus junction temperature**



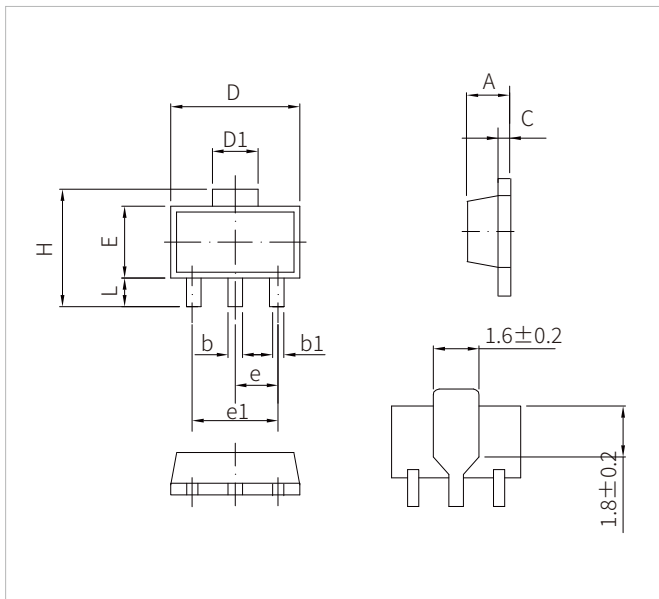
**FIG.7 Relative variations of holding current versus junction temperature**



**FIG.8 Relative variations of latching current versus junction temperature**



## SOT-89 PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.30	1.70	0.051	0.067
b	0.40	0.60	0.016	0.024
b1	0.25	0.55	0.010	0.022
C	0.30	0.50	0.012	0.020
D	4.30	4.70	0.169	0.185
D1	1.40	1.80	0.055	0.071
E	2.30	2.70	0.091	0.106
e	1.5TYP		0.059TYP	
e1	2.90	3.10	0.114	0.122
H	3.90	4.40	0.154	0.173
L	0.80	1.20	0.031	0.047

## ORDERING INFORMATION

Part Number	Size	QTY/Reel	Reel Size
MCK100-6	SOT-89	1000CS	7"

To find your local partner within Semiwell' s website : [www.semiwell.com.cn](http://www.semiwell.com.cn)

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