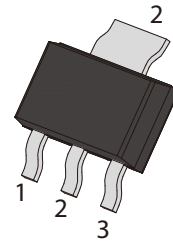


## FEATURES

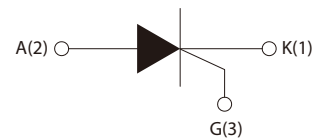
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 1.0 A



SOT-223

## APPLICATIONS

- | Flash lamp
- | Electronic ballast
- | Igniter



Schematic Symbol

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage ( $T_j=25^\circ\text{C}$ )	$V_{\text{DRM}}$	600	V
Repetitive peak reverse voltage ( $T_j=25^\circ\text{C}$ )	$V_{\text{RRM}}$	600	
RMS on-state current ( $T_c=75^\circ\text{C}$ )	$I_{\text{T(RMS)}}$	1	A
Non repetitive surge peak on-state current (180° conduction angle, F=50Hz, t=10ms/60Hz, 8.3ms)	$I_{\text{TSM}}$	12	
$I^2t$ value for fusing ( $t_p=10\text{ms}$ )	$I^2t$	0.72	$\text{A}^2\text{S}$
Critical rate of rise of on-state current ( $I_G=2 \cdot I_{\text{GT}}$ , $t_r \leq 100\text{ ns}$ )	$d/d_t$	50	$\text{A}/\mu\text{s}$
Peak gate current	$I_{\text{GM}}$	0.5	A
Average gate power dissipation	$P_{\text{G(AV)}}$	0.1	W
Storage junction temperature range	$T_{\text{STG}}$	-40~+150	°C
Operating junction temperature range	$T_j$	-40~+125	

## ELECTRICAL CHARACTERISTICS ( $T_j=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		Min.	Typ.	Max.	
$I_{GT}$	$V_D=12\text{V}, R_L=140\Omega$	20	40	120	$\mu\text{A}$
$V_{GT}$		-	-	1.0	V
$V_{GD}$	$V_D=V_{DRM}, R_L=1\text{K}\Omega, T_j=125^{\circ}\text{C}$	0.2	-	-	
$I_H$	$I_t=50\text{mA}$	-	-	5	
$I_L$	$I_G=1.2I_{GT}$	-	-	6	
$dV_D/dt$	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^{\circ}\text{C}$	50	-	-	$\text{V}/\mu\text{s}$

## STATIC CHARACTERISTICS

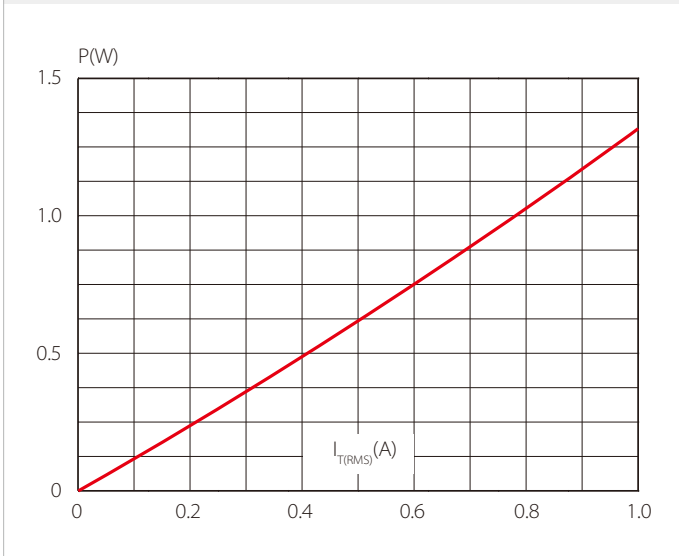
Symbol	Parameter	Value	Unit
$V_{TM}$	$I_{TM}=2\text{A}, t_p=380\mu\text{s}$	1.7	V
$I_{DRM}$	$V_D=V_{DRM}, V_R=V_{RRM}$		
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	0.5

## THERMAL RESISTANCES

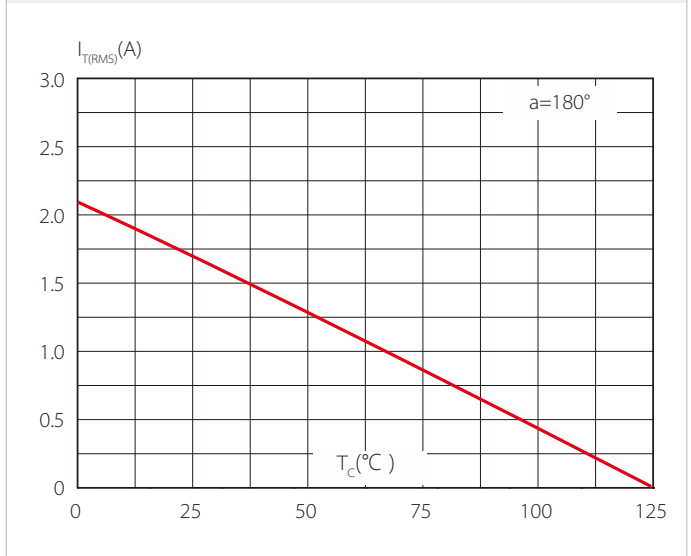
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	25	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient	60	$^{\circ}\text{C}/\text{W}$

# PARAMETER CHARACTERISTIC CURVE

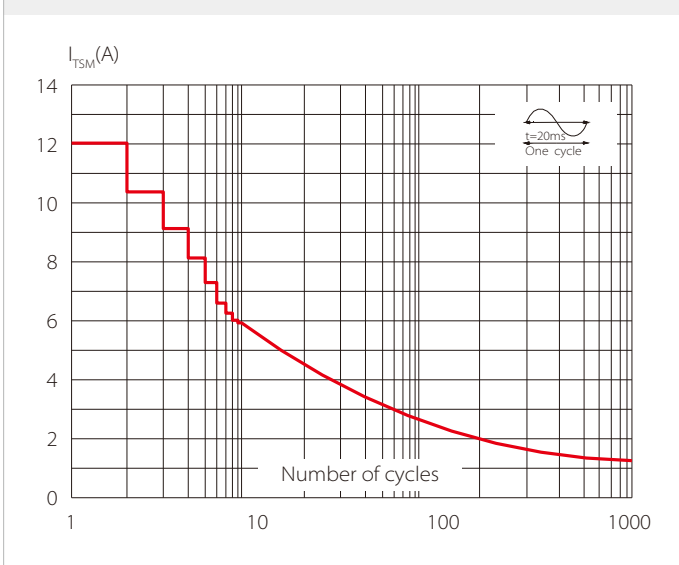
**FIG.1 Maximum power dissipation versus RMS on-state current**



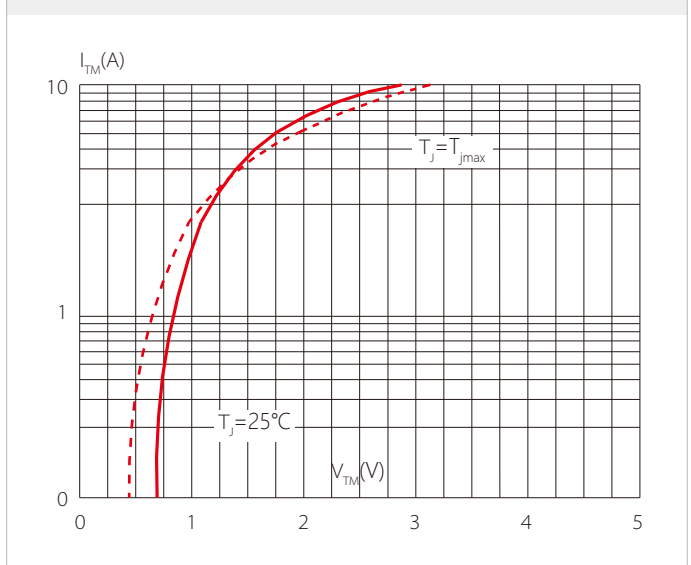
**FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)**



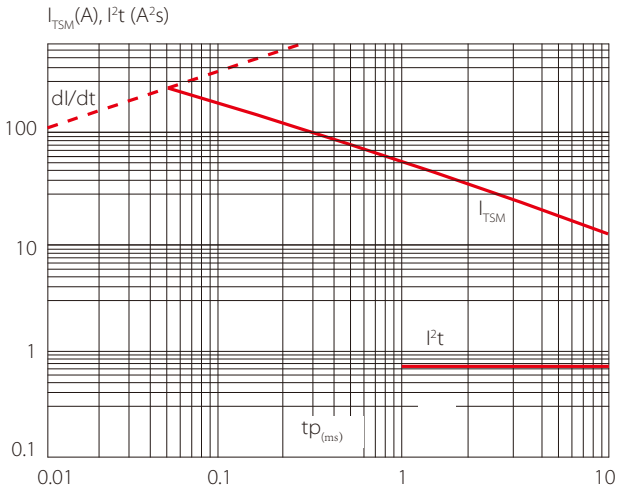
**FIG.3: Surge peak on-state current versus number of cycles**



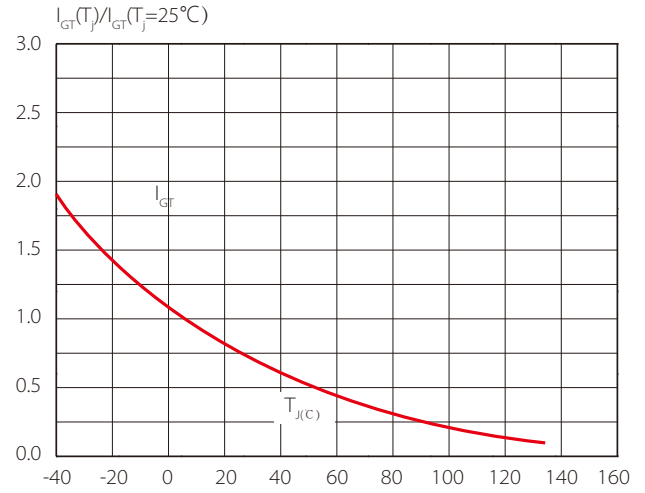
**FIG.4 On-state characteristics (maximum values)**



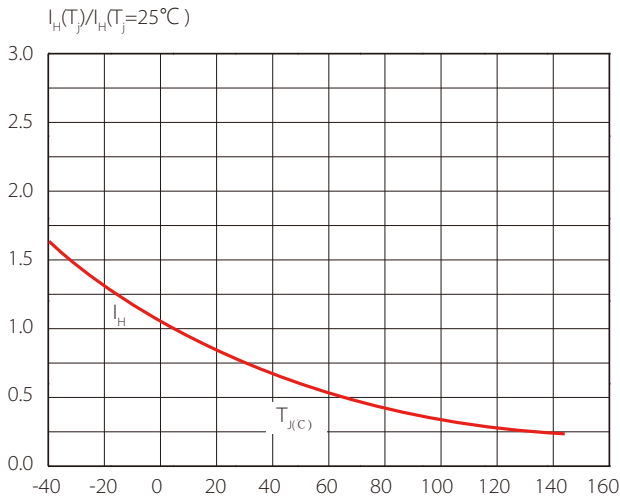
**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$  and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )**



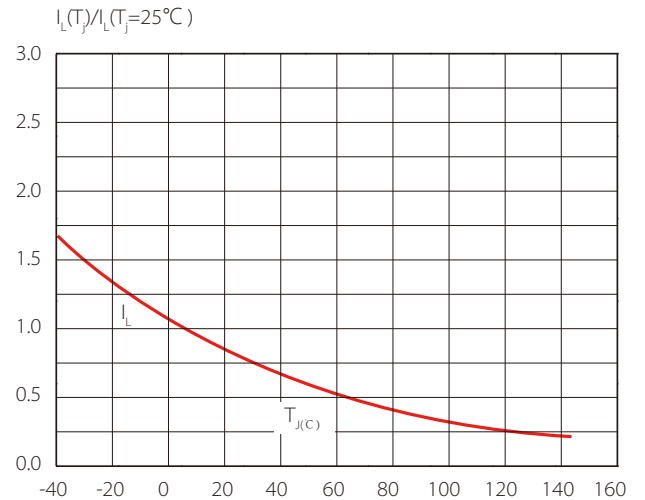
**FIG.6 Relative variations of gate trigger current versus junction temperature**



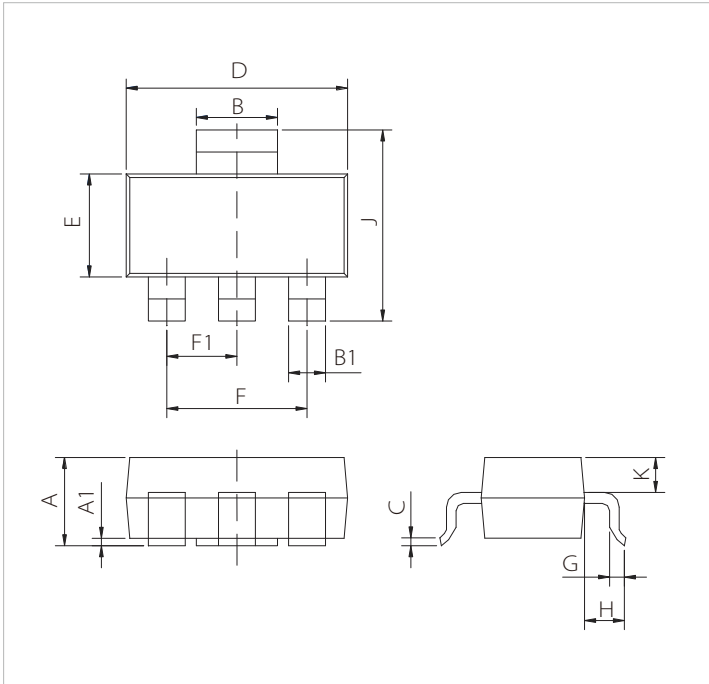
**FIG.7 Relative variations of holding current versus junction temperature**



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



## SOT-223 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50		1.60	0.059		0.071
A1	0.01		0.06	0.001		0.004
B	2.90		3.10	0.118		0.122
B1	0.60		0.80	0.048		0.052
C	0.22		0.32	0.009		0.013
D	6.30		6.70	0.248		0.264
E	3.30		3.70	0.130		0.146
F		4.60			0.181	
F1		2.30			0.091	
G	0.70		1.10	0.028		0.043
H	1.50		2.00	0.059		0.079
J	6.70		7.30	0.264		0.287
K		0.90			0.035	

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MCR100-8W	SOT-223	1000PCS	7"

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