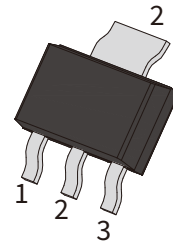


FEATURES

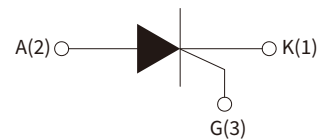
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 1.0 A

APPLICATIONS

- | Flash lamp
- | Electronic ballast
- | Igniter



SOT-223



Schematic Symbol

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	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_{DRM}	600	V
Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$)	V_{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_{TSM}	12	
I2t value for fusing (tp=10ms)	I2t	0.72	A2S
Critical rate of rise of on-state current ($I_G=2 \cdot I_{GT}$, $t_r \leq 100$ ns)	d/d_t	50	A/ μs
Peak gate current	I_{GM}	0.5	A
Average gate power dissipation	$P_{\text{G(AV)}}$	0.1	W
Storage junction temperature range	T_{STG}	-40~+150	°C
Operating junction temperature range	T_j	-40~+125	

ELECTRICAL CHARACTERISTICS (T_j=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		Min.	Typ.	Max.	
I _{GT}	V _D =12V, R _L =140Ω	20	40	120	uA
V _{GT}		-	-	1.0	V
V _{GD}	V _D =V _{DRM} , R _L =1KΩ, T _j =125°C	0.2	-	-	
I _H	I _T =50mA	-	-	5	
I _L	I _G =1.2I _{GT}	-	-	6	
dV _D /dt	V _D =2/3V _{DRM} Gate Open T _j =125°C	50	-	-	V/μs

STATIC CHARACTERISTICS

Symbol	Parameter	Value	Unit
V _{TM}	I _{TM} =2A, tp=380μs	1.7	V
I _{DRM}	V _D =V _{DRM} , V _R =V _{RRM}		
I _{RRM}			0.5

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
R _{th(j-c)}	Junction to case(AC)	25	°C/W
R _{th(j-a)}	Junction to ambient	60	°C/W

PARAMETER CHARACTERISTIC CURVE

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

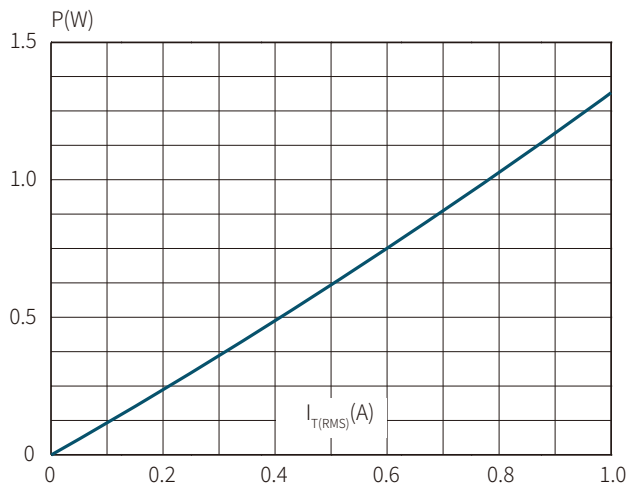


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35 μ m)(full cycle)

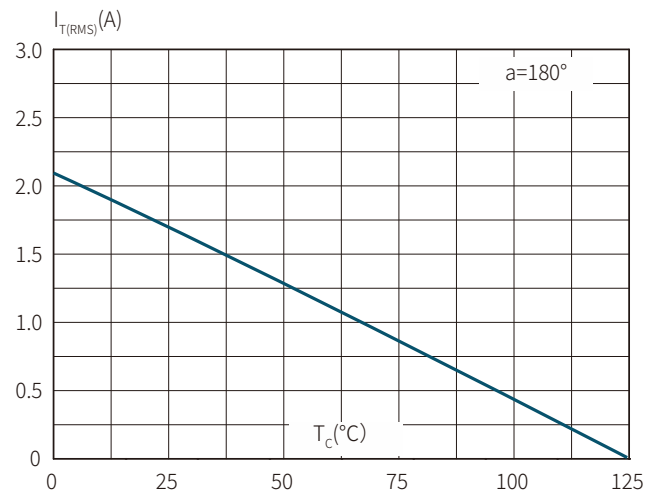


FIG.3: Surge peak on-state current versus number of cycles

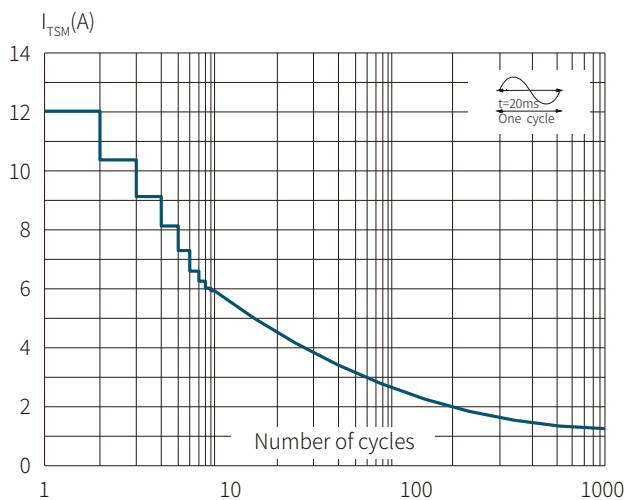


FIG.4 On-state characteristics (maximum values)

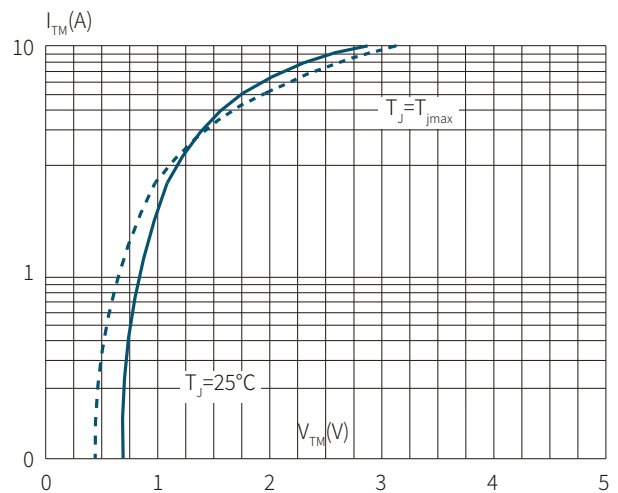


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

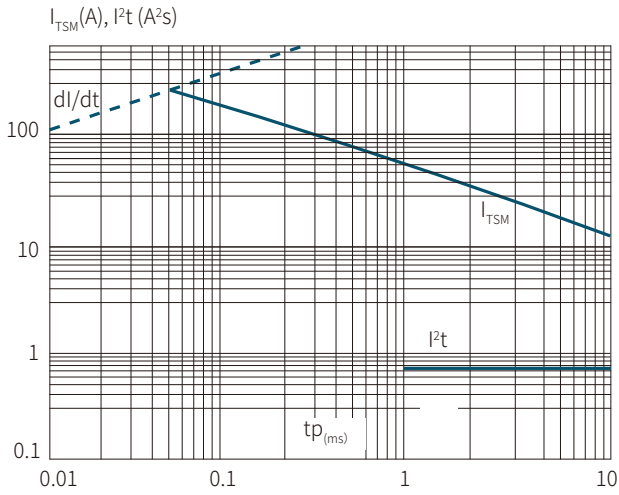


FIG.6 Relative variations of gate trigger current versus junction temperature

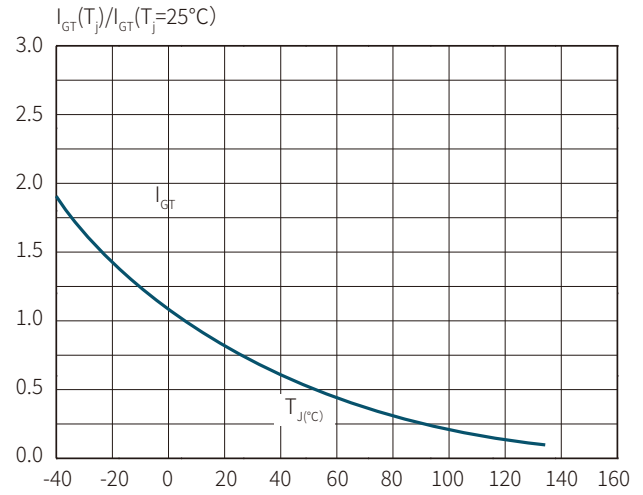


FIG.7 Relative variations of holding current versus junction temperature

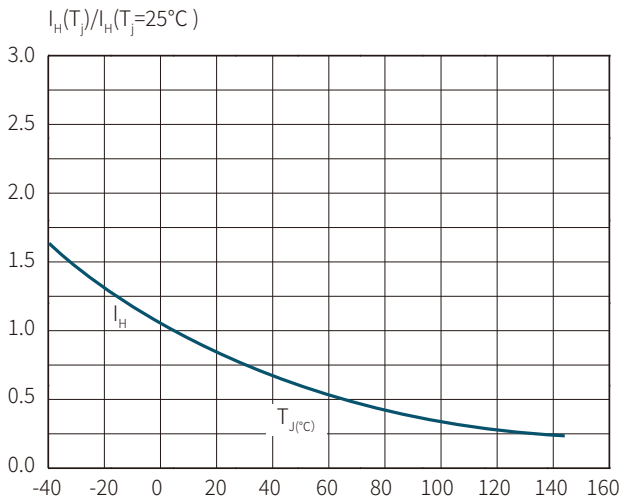
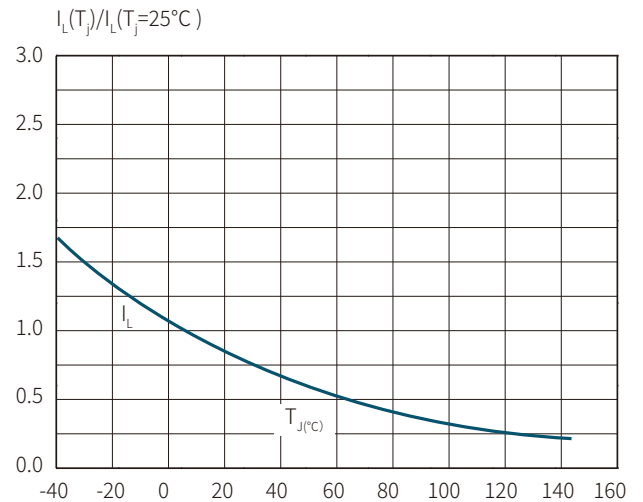
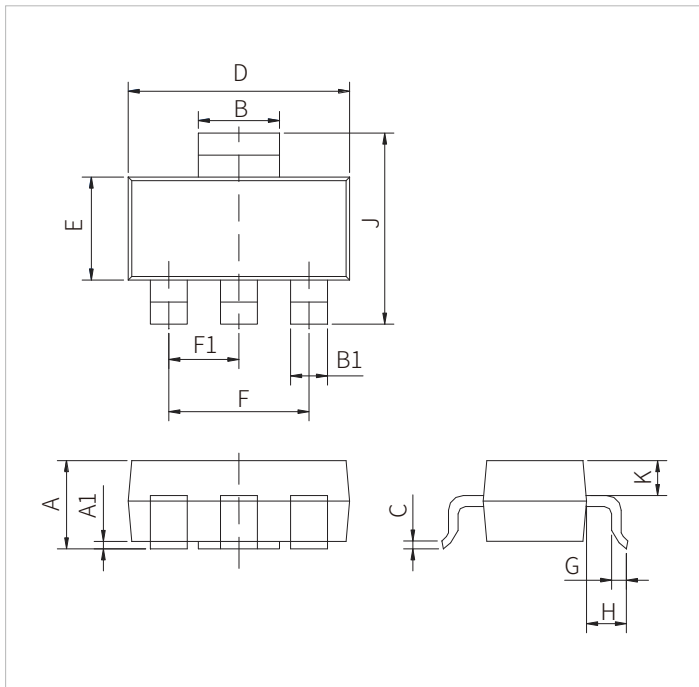


FIG.8 Relative variations of latching current versus junction temperature



SOT-223 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.50		1.80	0.059		0.071
A1	0.01		0.06	0.001		0.002
B	2.90		3.10	0.114		0.122
B1	0.60		0.80	0.024		0.031
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"

To find your local partner within Semiwell' s website : www.semiwell.com.cn

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