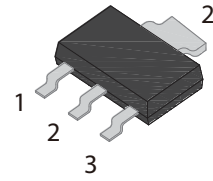


FEATURES

- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 1.0 A
- | RoHS (2002/95/EC) compliant packages



SOT-89

APPLICATIONS

- | Flash lamp
- | Electronic ballast
- | Igniter



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 ($T_c=70^\circ\text{C}$)	$I_{\text{T(RMS)}}$	1	A
Non repetitive surge peak on-state current ($t_p=10\text{ms}$)	I_{TSM}	12	
I^2t value for fusing ($t_p=10\text{ms}$)	I^2t	0.72	A^2S
Critical rate of rise of on-state current ($I_G=2*I_{GT}$)	dI/dt	50	$\text{A}/\mu\text{s}$
Peak gate current	I_{GM}	0.3	A
Average gate power dissipation	$P_{\text{G(AV)}}$	0.1	W
Storage junction temperature range	T_{STG}	-40~+150	$^\circ\text{C}$
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}	$V_D=12\text{V}, R_L=33\Omega$	-	40	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	$V_D=V_{DRM}, R_L=3.3\text{K}\Omega, T_j=150^{\circ}\text{C}$	0.2	-	-	
I_H	$I_T=500\text{mA}$	-	-	4	mA
I_L	$I_G=1.2I_{GT}$	-	-	5	
dV_D/dt	$V_D=540\text{V}, R_{GK}=1\text{K}\Omega, T_j=125^{\circ}\text{C}$	100	-	-	$\text{V}/\mu\text{s}$

STATIC CHARACTERISTICS

Symbol	Parameter	Value	Unit	
V_{TM}	$I_{TM}=2\text{A}, t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	≤ 1.4	V
I_{DRM}	$V_D=V_{DRM}, V_R=V_{RRM}$		≤ 5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	≤ 100	μA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	38	$^{\circ}\text{C}/\text{W}$
$R_{th(j-a)}$	Junction to ambient	90	$^{\circ}\text{C}/\text{W}$

PARAMETER CHARACTERISTIC CURVE

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

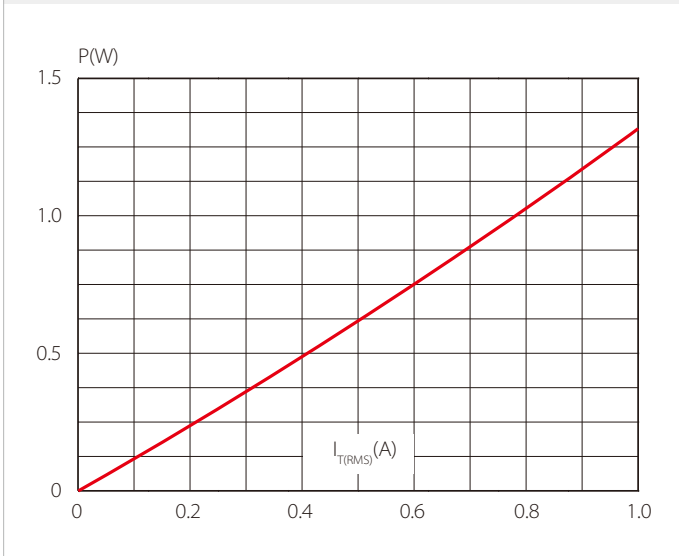


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35 μ m)(full cycle)

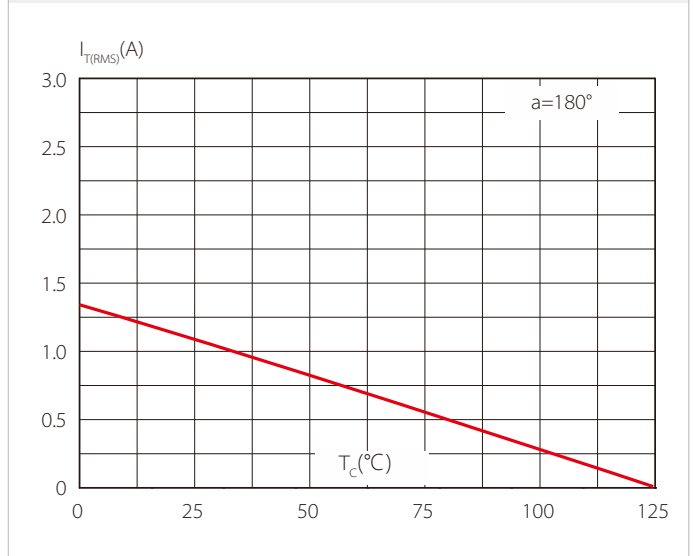


FIG.3: Surge peak on-state current versus number of cycles

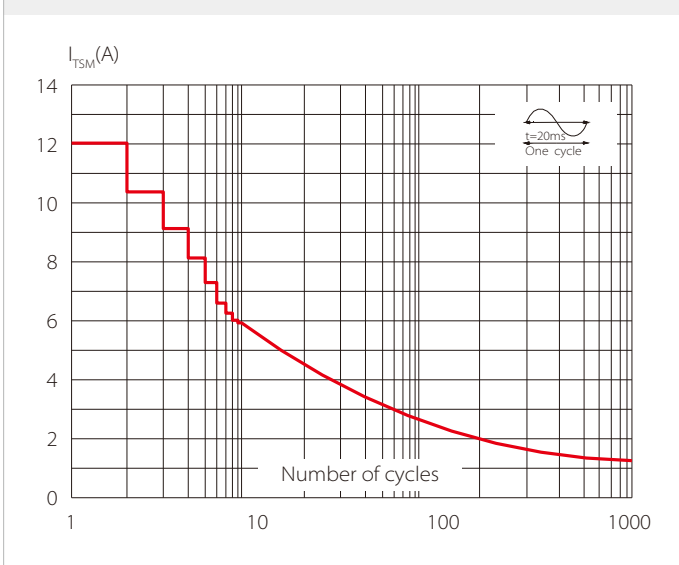


FIG.4 On-state characteristics (maximum values)

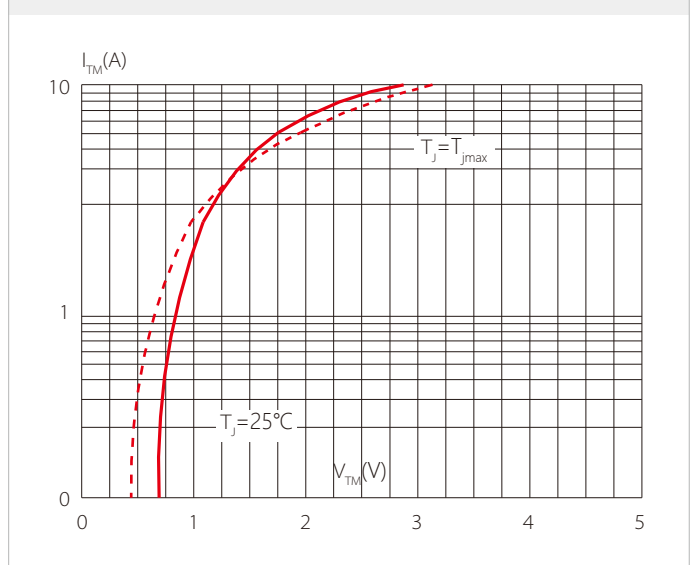


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

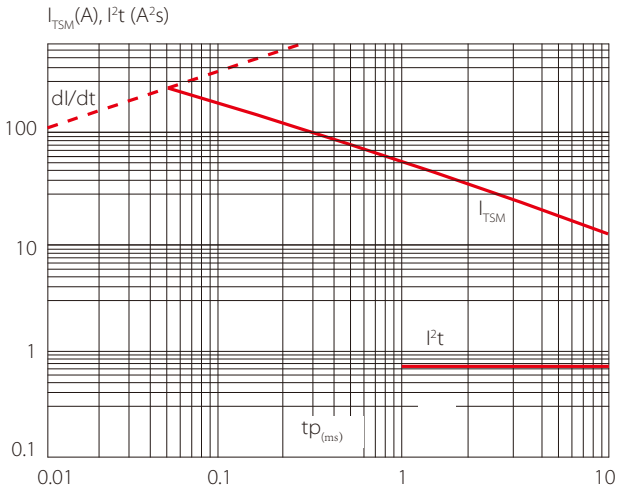


FIG.6 Relative variations of gate trigger current versus junction temperature

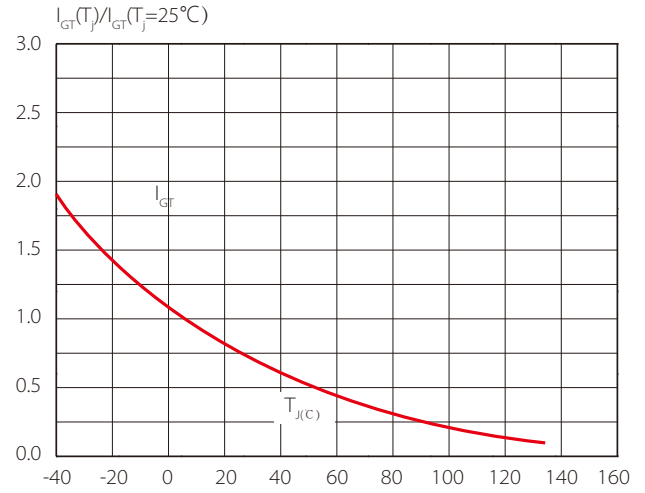


FIG.7 Relative variations of holding current versus junction temperature

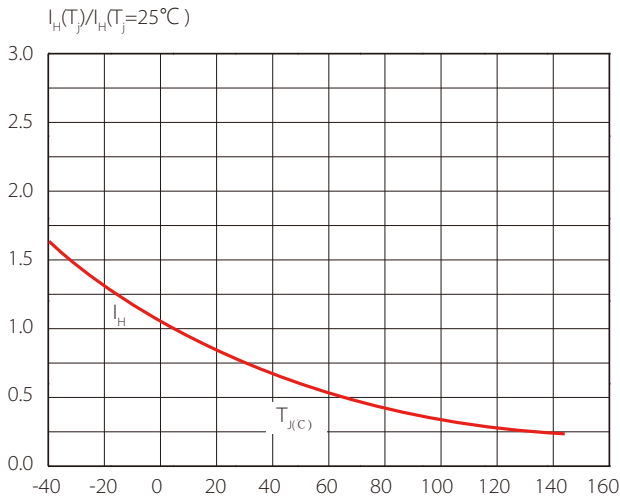
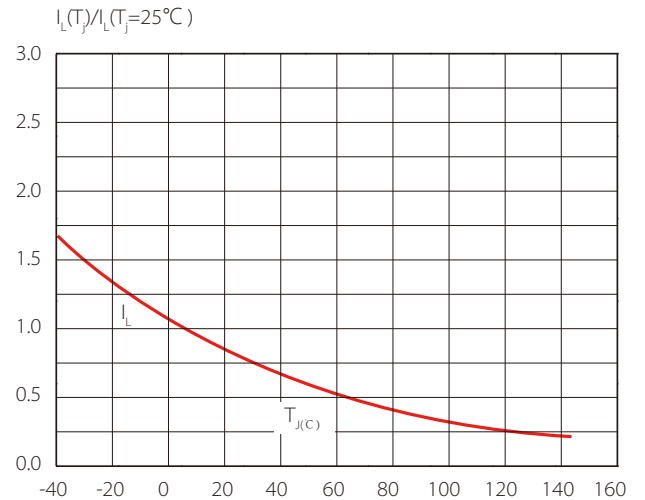
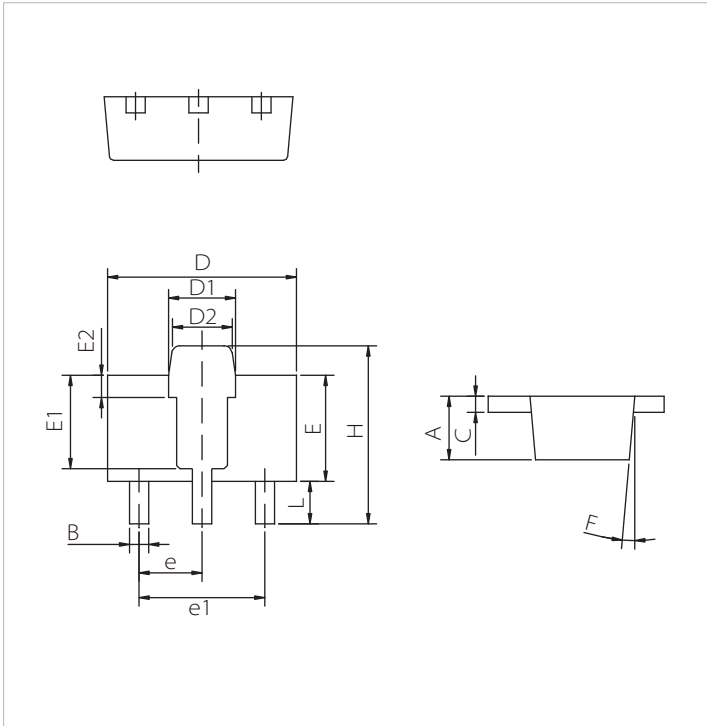


FIG.8 Relative variations of latching current versus junction temperature



SOT-89 PACKAGE DIMENSIONS



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.60	0.055		0.063
B	0.40		0.52	0.016		0.020
C	0.35		0.41	0.014		0.016
D	4.40		4.60	0.173		0.181
D1	1.50		1.70	0.059		0.067
D2	1.30		1.50	0.051		0.059
E	2.40		2.60	0.094		0.102
E1		2.20			0.087	
E2		0.52			0.020	
e		1.50			0.059	
e1		3.00			0.118	
F		5.00			5.000	
H	4.05		4.25	0.159		0.167
L	0.89		1.20	0.035		0.047

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SCM1M60	SOT-89	1000PCS	7"

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