

## FEATURES

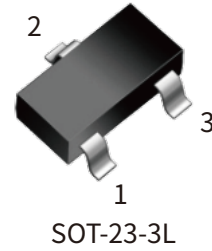
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 0.8A

## APPLICATIONS

- | Flash lamp
- | Electronic ballast
- | Igniter

## APPROVALS

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



Schematic Symbol

## ABSOLUTE MAXIMUM RATINGS

| Parameter                                                                 | Symbol              | Value    | Unit                   |
|---------------------------------------------------------------------------|---------------------|----------|------------------------|
| Repetitive peak off-state voltage ( $T_j=25^{\circ}\text{C}$ )            | $V_{\text{DRM}}$    | 800      | V                      |
| Repetitive peak reverse voltage ( $T_j=25^{\circ}\text{C}$ )              | $V_{\text{RRM}}$    | 800      |                        |
| RMS on-state current ( $T_c=40^{\circ}\text{C}$ )                         | $I_{\text{T(RMS)}}$ | 0.8      | A                      |
| Non repetitive surge peak on-state current ( $t_p=10\text{ms}$ )          | $I_{\text{TSM}}$    | 8        |                        |
| $I^2t$ value for fusing ( $t_p=10\text{ms}$ )                             | $I^2t$              | 0.32     | $\text{A}^2\text{S}$   |
| Critical rate of rise of on-state current ( $I_G=2 \cdot I_{\text{GT}}$ ) | $di/dt$             | 50       | $\text{A}/\mu\text{s}$ |
| Peak gate current                                                         | $I_{\text{GM}}$     | 0.2      | A                      |
| Average gate power dissipation                                            | $P_{\text{G(AV)}}$  | 0.1      | W                      |
| Storage junction temperature range                                        | $T_{\text{STG}}$    | -40~+150 | $^{\circ}\text{C}$     |
| 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                                        | 20    | 50   | 200  | μA   |
| V <sub>GT</sub>     |                                                                                 | -     | 0.6  | 0.8  | V    |
| V <sub>GD</sub>     | V <sub>D</sub> =V <sub>DRM</sub> , R <sub>L</sub> =3.3KΩ, T <sub>j</sub> =150°C | 0.2   | -    | -    |      |
| I <sub>H</sub>      | I <sub>T</sub> =500mA                                                           | -     | -    | 3    | mA   |
| I <sub>L</sub>      | I <sub>G</sub> =1.2I <sub>GT</sub>                                              | -     | -    | 4    |      |
| dV <sub>D</sub> /dt | V <sub>D</sub> =400V, R <sub>GK</sub> =1KΩ, T <sub>j</sub> =125°C               | 600   | -    | -    | V/μs |

## STATIC CHARACTERISTICS

| Symbol           | Parameter                                                           |                       | Value | Unit |
|------------------|---------------------------------------------------------------------|-----------------------|-------|------|
| V <sub>TM</sub>  | I <sub>TM</sub> =1.1A,tp=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> |                       | ≤5    | uA   |
| I <sub>RRM</sub> |                                                                     | T <sub>j</sub> =125°C | ≤100  | uA   |

## THERMAL RESISTANCES

| Symbol               | Parameter            | Value | Unit |
|----------------------|----------------------|-------|------|
| R <sub>th(j-c)</sub> | Junction to case(AC) | 75    | °C/W |
| R <sub>th(j-a)</sub> | Junction to ambient  | 125   | °C/W |

## PARAMETER CHARACTERISTIC CURVE

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

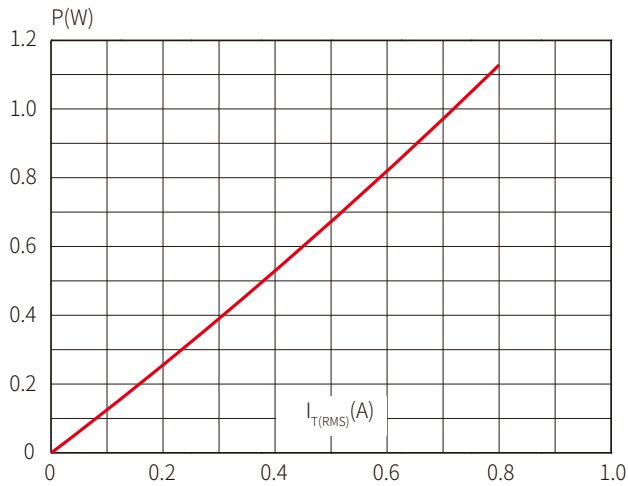


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35 $\mu$ m)(full cycle)

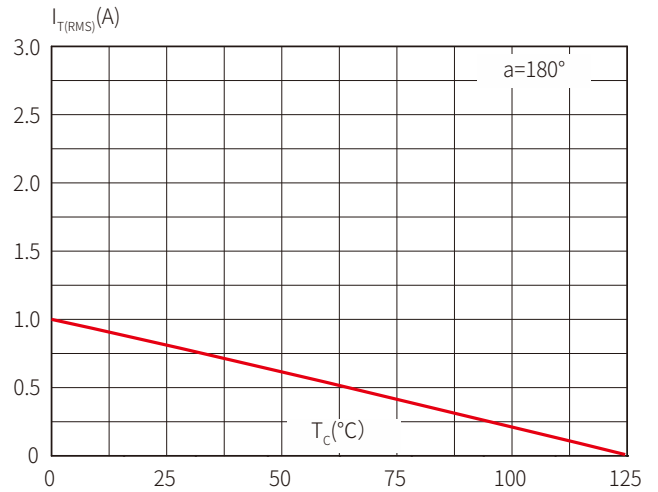


FIG.3: Surge peak on-state current versus number of cycles

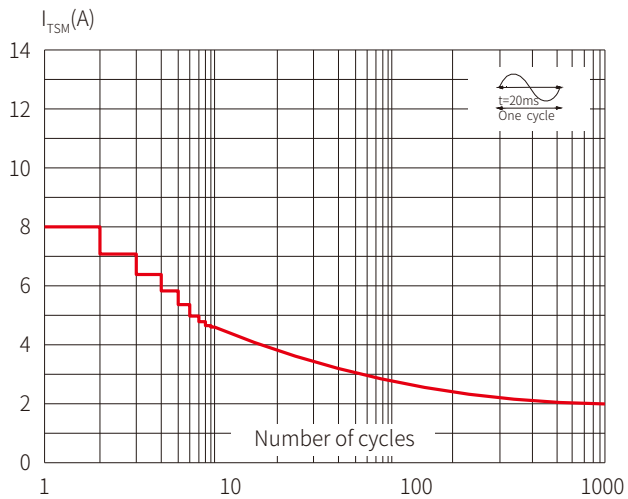
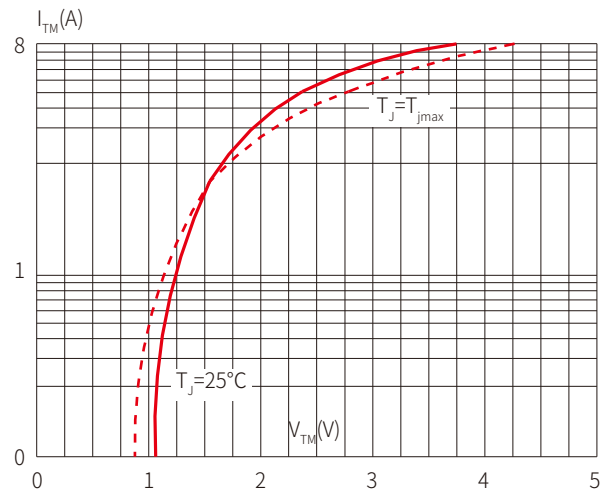
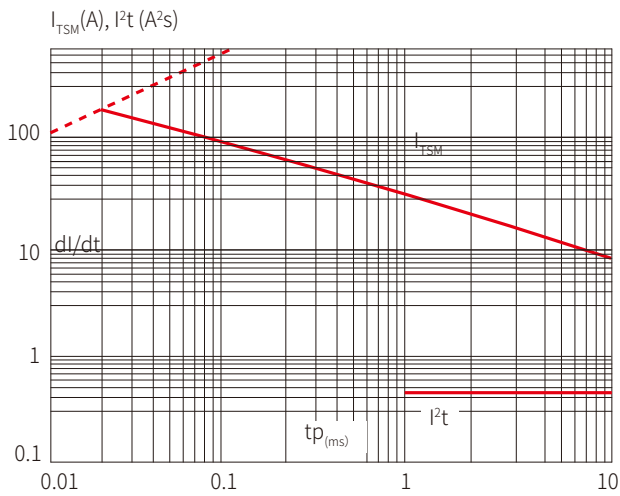


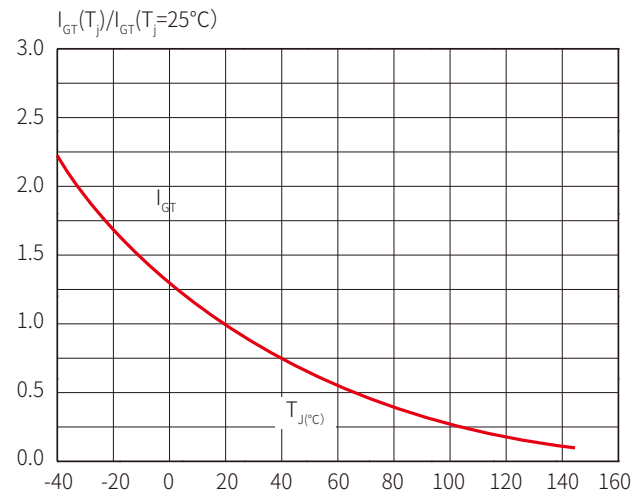
FIG.4 On-state characteristics (maximum values)



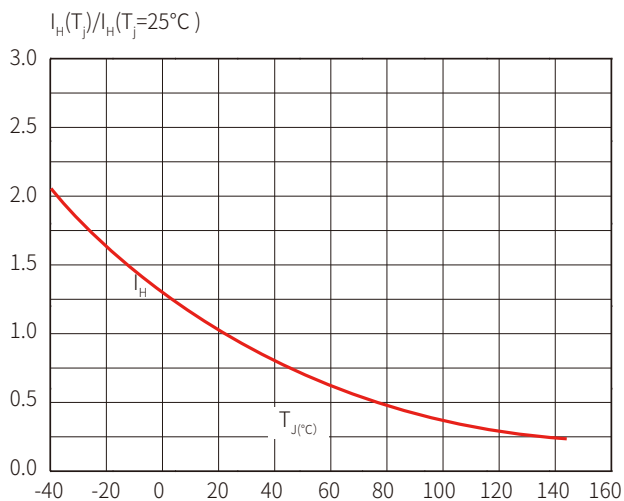
**FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$  and corresponding value of  $I^2t$  ( $dI/dt < 50\text{A}/\mu\text{s}$ )**



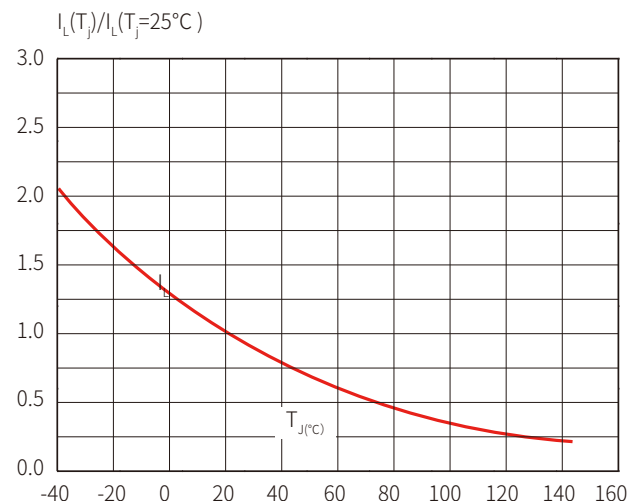
**FIG.6 Relative variations of gate trigger current versus junction temperature**



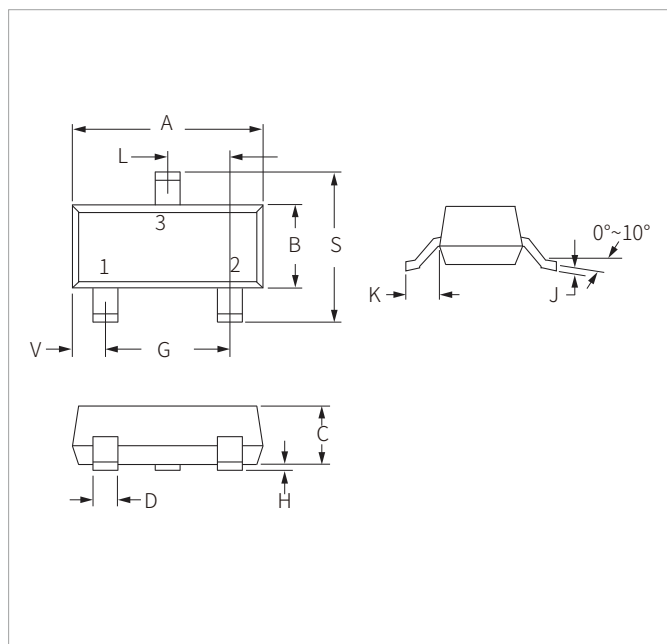
**FIG.7 Relative variations of holding current versus junction temperature**



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



## SOT-23-3L PACKAGE DIMENSIONS



| Ref. | Millimeters |      | Inches |       |
|------|-------------|------|--------|-------|
|      | Min.        | Max. | Min.   | Max.  |
| A    | 2.80        | 3.15 | 0.110  | 0.124 |
| B    | 1.50        | 1.70 | 0.060  | 0.070 |
| C    | 1.00        | 1.30 | 0.039  | 0.051 |
| D    | 0.37        | 0.50 | 0.015  | 0.020 |
| G    | 1.78        | 2.10 | 0.070  | 0.083 |
| H    | 0.01        | 0.15 | 0.001  | 0.006 |
| J    | 0.08        | 0.18 | 0.003  | 0.007 |
| K    | 0.35        | 0.69 | 0.014  | 0.029 |
| L    | 0.89        | 1.02 | 0.035  | 0.040 |
| S    | 2.60        | 3.00 | 0.102  | 0.118 |
| V    | 0.45        | 0.60 | 0.018  | 0.024 |

## ORDERING INFORMATION

| Part Number | Component Package | QTY/Reel | Reel Size |
|-------------|-------------------|----------|-----------|
| SCL08M80    | SOT-23-3L         | 3000PCS  | 7"        |

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

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