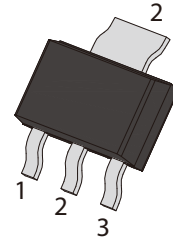


FEATURES

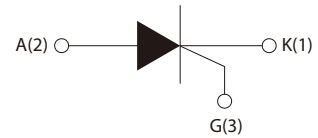
- | Glass-passivated mesa chip for reliability and uniform
- | High current output up to 1.0 A
- | RoHS (2002/95/EC) compliant packages



SOT-223

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 ($T_c=85^\circ\text{C}$) | $I_{\text{T(RMS)}}$ | 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 ($I_G=2*I_{\text{GT}}$) | d/d_t | 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) | 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

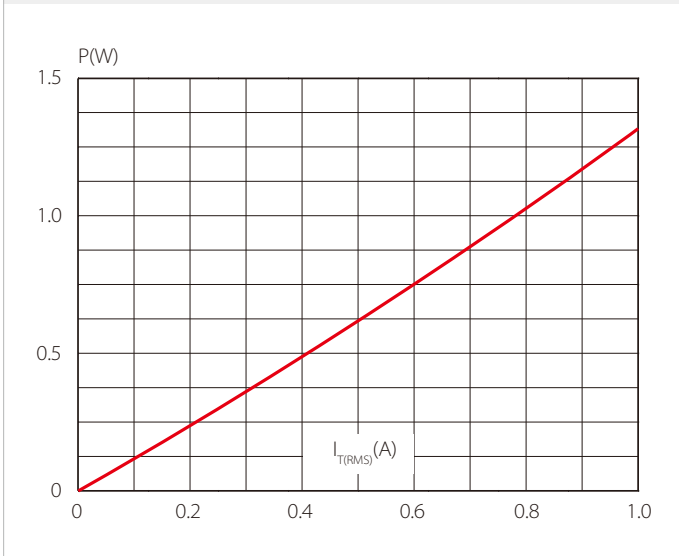


FIG.2: RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)

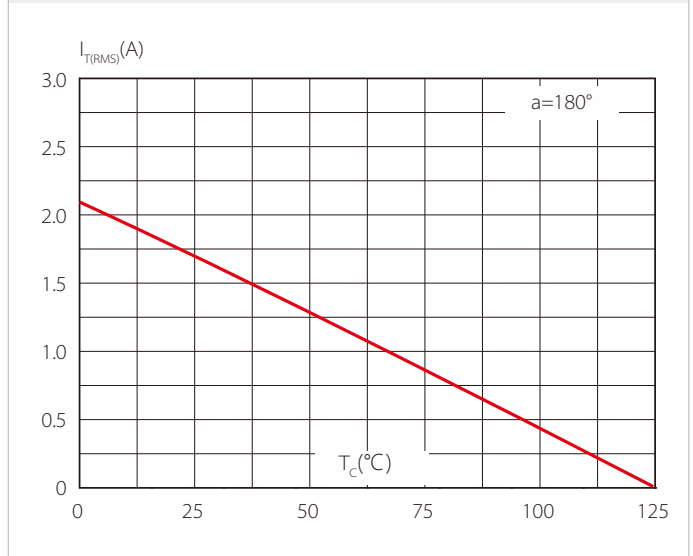


FIG.3: Surge peak on-state current versus number of cycles

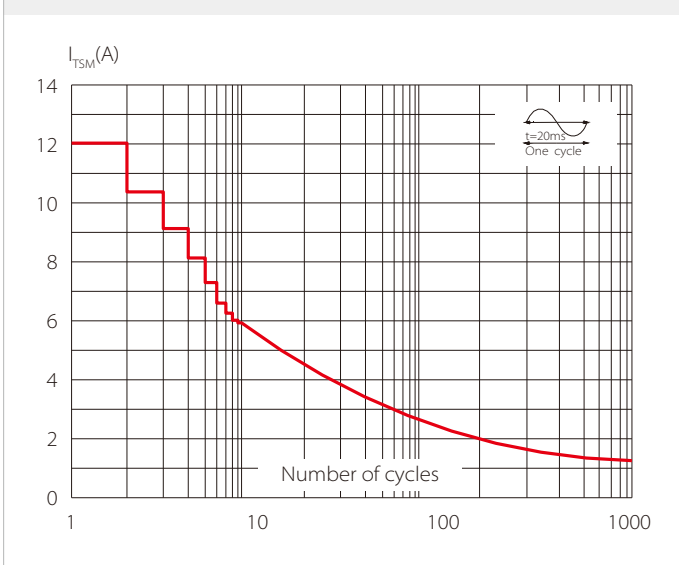


FIG.4 On-state characteristics (maximum values)

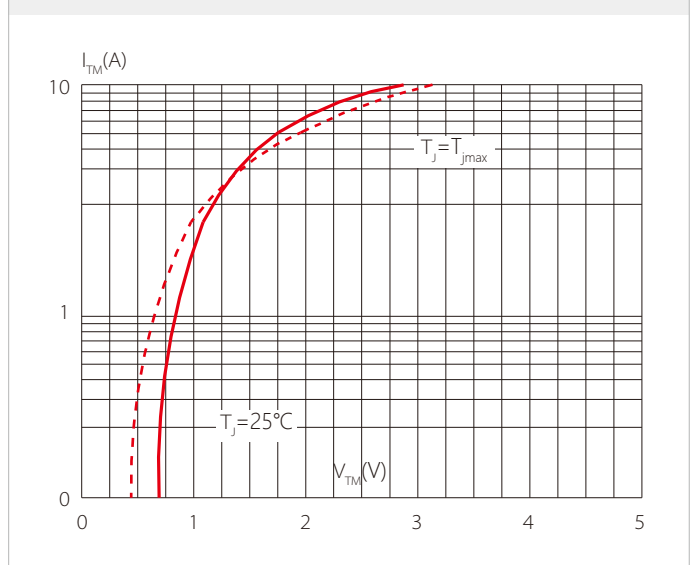


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$ and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

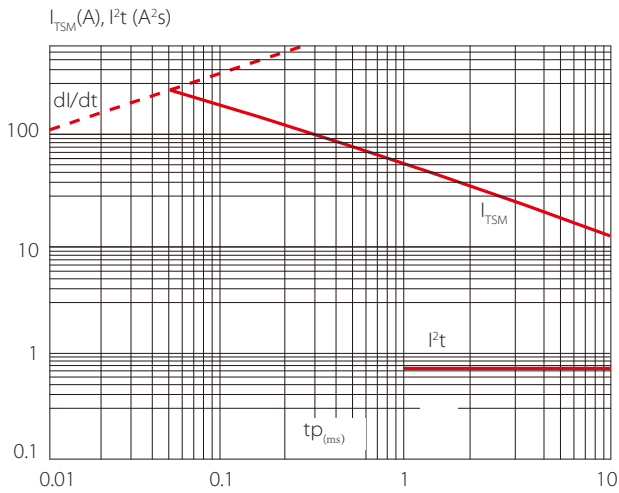


FIG.6 Relative variations of gate trigger current versus junction temperature

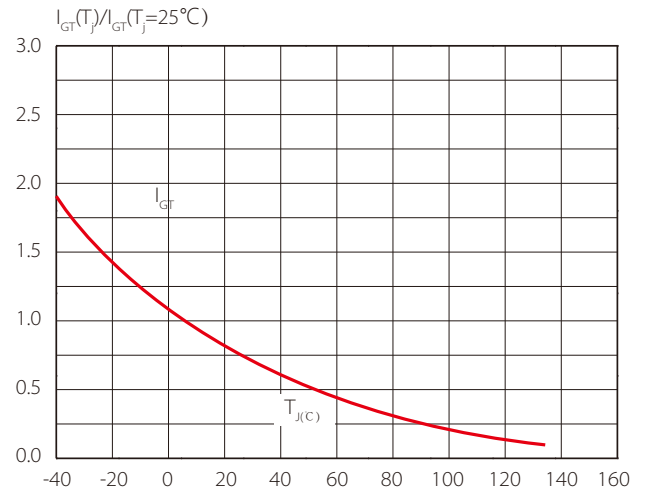


FIG.7 Relative variations of holding current versus junction temperature

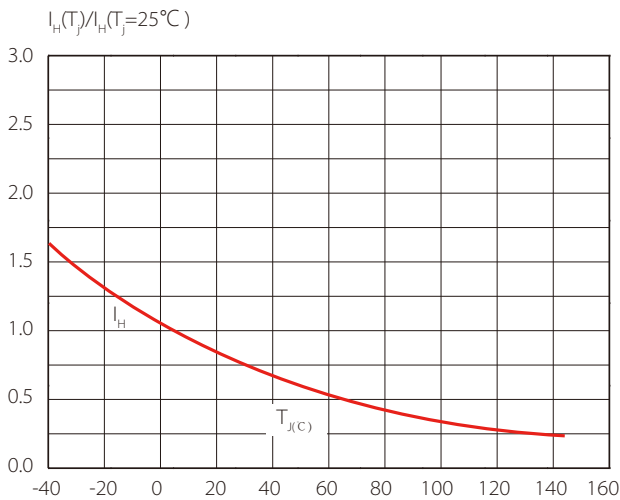
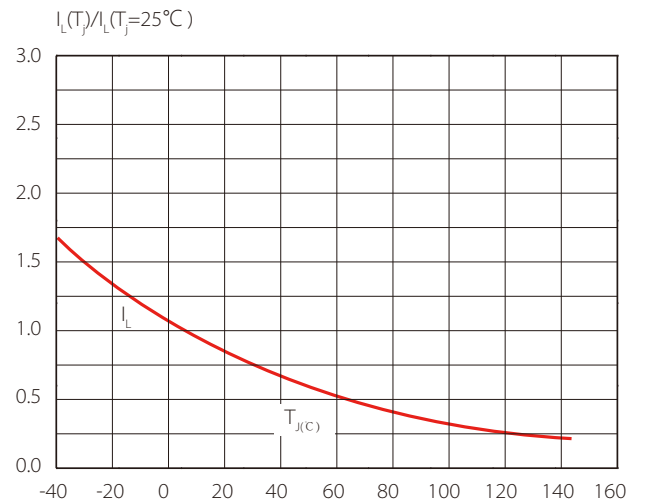
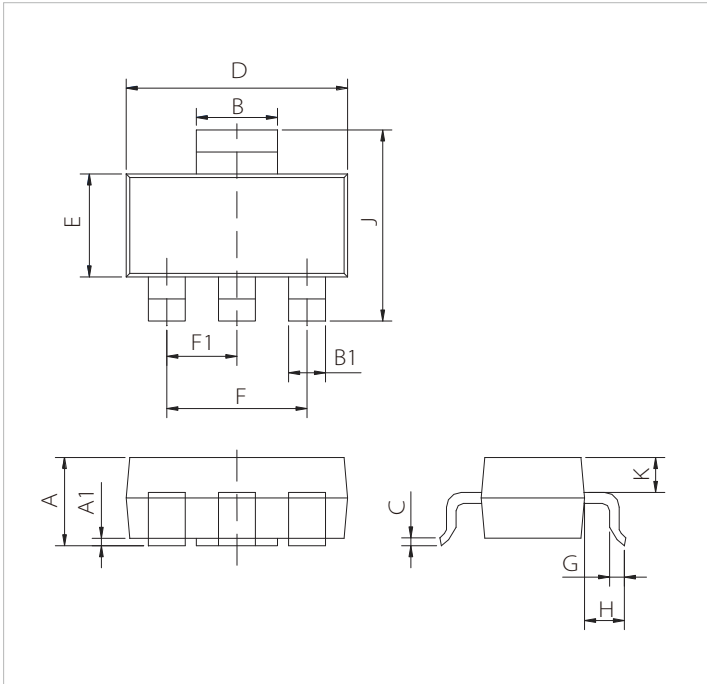


FIG.8 Relative variations of latching current versus junction temperature



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 |
|-------------|-------------------|----------|-----------|
| SCV1M60 | SOT-223 | 1000PCS | 7" |

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