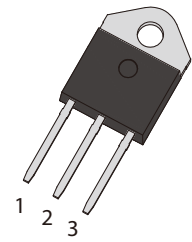


FEATURES

- | High current 25 A RMS current Triac
- | Low thermal resistance
- | High commutation or very high commutation capability
- | RoHS (2002/95/EC) compliant packages
- | UL-94, V0 flammability package resin compliance



TO-3P

APPLICATIONS

- | General purpose motor control circuits
- | Phase control operations in light dimmers and motor speed controllers
- | Home appliances



Schematic Symbol

APPROVALS

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

THE MAIN PARAMETERS

| Symbol | Parameter | Value | Unit |
|--------------|-----------------------------------|-------|------|
| $I_{T(RMS)}$ | RMS on-state current | 25 | A |
| V_{DRM} | Off-state repetitive peak voltage | 800 | V |
| V_{TM} | On-state voltage | 1.5 | V |

ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Value | Unit |
|---|---------------------|----------|------------------|
| Repetitive peak off-state voltage ($T_j=25^\circ\text{C}$) | V_{DRM} | 800 | V |
| Repetitive peak reverse voltage ($T_j=25^\circ\text{C}$) | V_{RRM} | 800 | V |
| RMS on-state current ($T_c=95^\circ\text{C}$) | $I_{\text{T(RMS)}}$ | 25 | A |
| Non repetitive surge peak on-state current (full cycle, $F=50\text{Hz}$) | I_{TSM} | 250 | |
| I ² t value for fusing ($t_p=10\text{ms}$) | I ² t | 340 | A ² S |
| Critical rate of rise of on-state current ($I_G=2 \cdot I_{\text{GT}}$) | d/d_t | 50 | A/ μs |
| Peak gate current | I_{GM} | 4 | A |
| Average gate power dissipation | $P_{\text{G(AV)}}$ | 1 | W |
| Storage junction temperature range | T_{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 | Quadrant | Value | | Unit |
|------------------|--|-------------------------|-------------|-------------|------------------|
| | | | CW | BW | |
| I_{GT} | $V_D=12\text{V}, R_L=33\Omega$ | I - II - III | ≤ 35 | ≤ 50 | mA |
| V_{GT} | | | ≤ 1.5 | | |
| V_{GD} | $V_D=V_{\text{DRM}}, R_L=3.3\text{K}\Omega, T_j=125^\circ\text{C}$ | | ≥ 0.2 | | V |
| I_{H} | $I_t=100\text{mA}$ | | ≤ 60 | ≤ 80 | mA |
| I_{L} | $I_G=1.2I_{\text{GT}}$ | I - III | ≤ 70 | ≤ 90 | |
| | | II | ≤ 80 | ≤ 100 | |
| dV_D/dt | $V_D=67\%V_{\text{DRM}}, T_j=125^\circ\text{C}$ | | ≥ 1000 | ≥ 1500 | V/ μs |
| V_{TM} | $I_{\text{TM}}=35\text{A}, t_p=380\mu\text{s}$ | | ≤ 1.5 | | V |
| I_{DRM} | $V_D=V_{\text{DRM}}, V_R=V_{\text{RRM}}$ | $T_j=25^\circ\text{C}$ | ≤ 5 | | μA |
| I_{RRM} | | $T_j=125^\circ\text{C}$ | ≤ 3 | | mA |

THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|---------------|----------------------|-------|------|
| $R_{th(j-c)}$ | Junction to case(AC) | 0.67 | °C/W |

PARAMETER CHARACTERISTIC CURVE

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

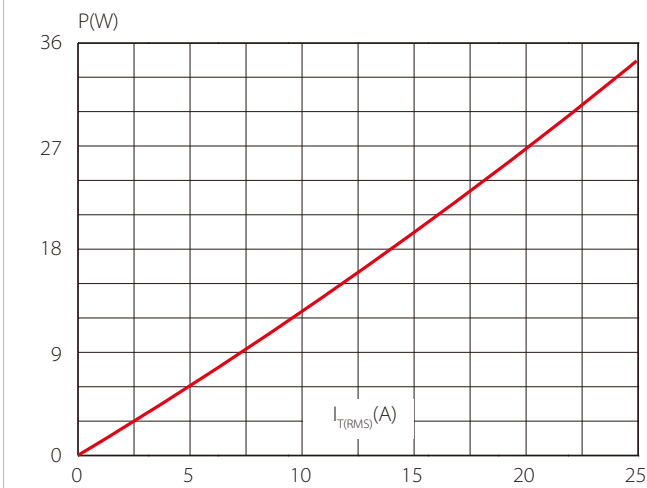


FIG.2: RMS on-state current versus case temperature

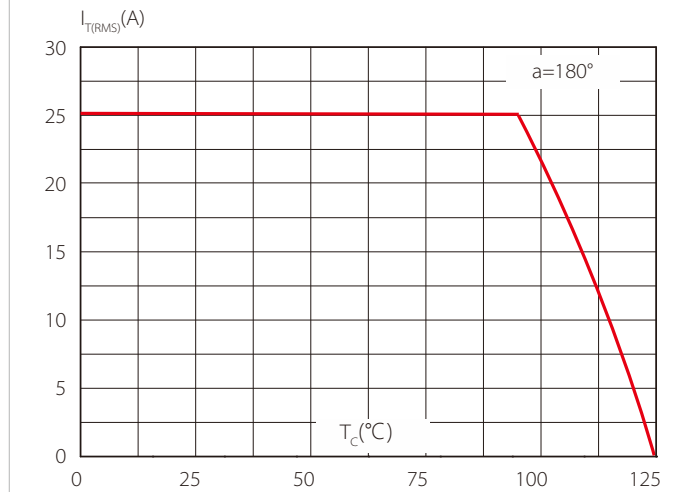


FIG.3: Surge peak on-state current versus number of cycles

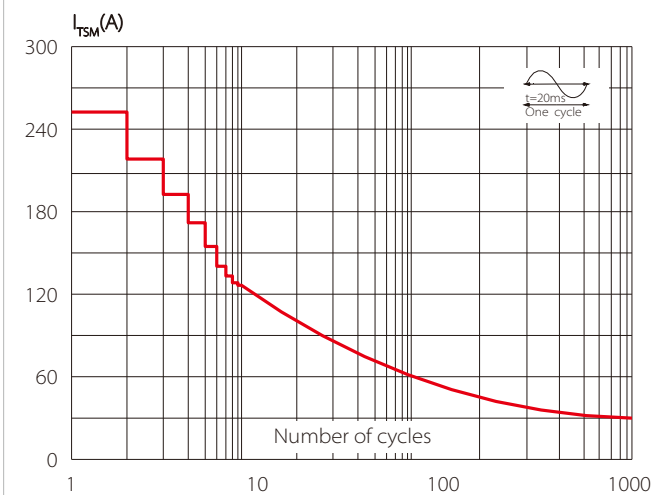


FIG.4 On-state characteristics (maximum values)

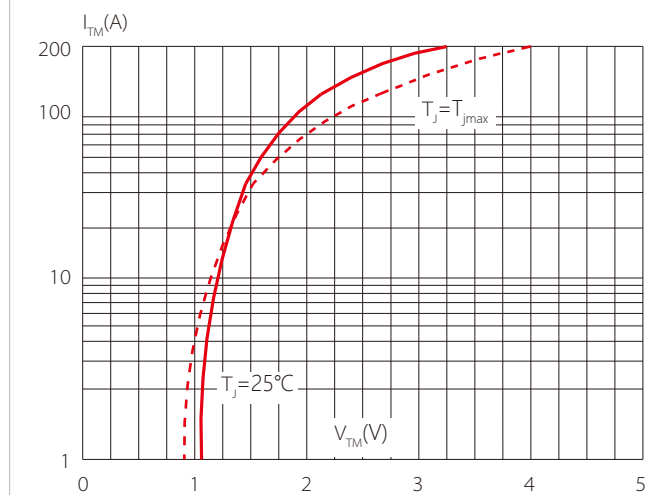


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20\text{ms}$ and corresponding value of I^2t ($dI/dt < 50\text{A}/\mu\text{s}$)

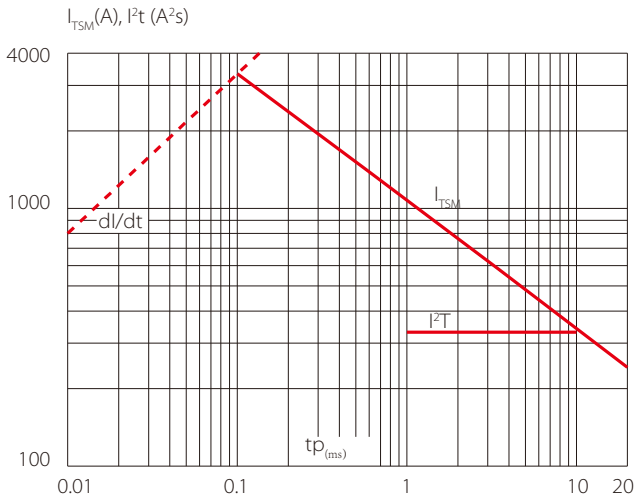


FIG.6 Relative variations of gate trigger current versus junction temperature

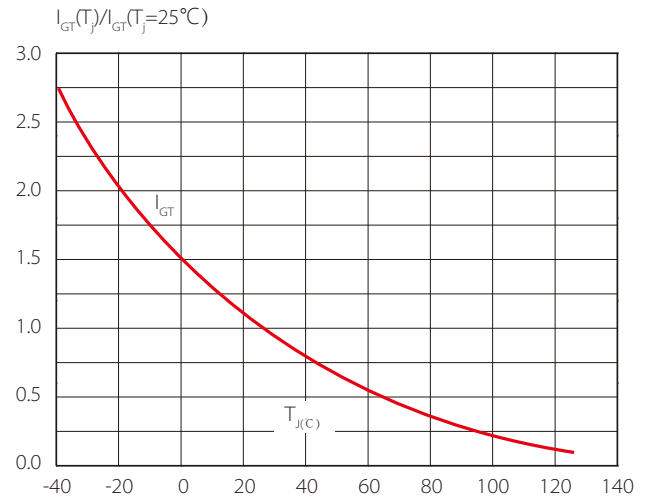


FIG.7 Relative variations of holding current versus junction temperature

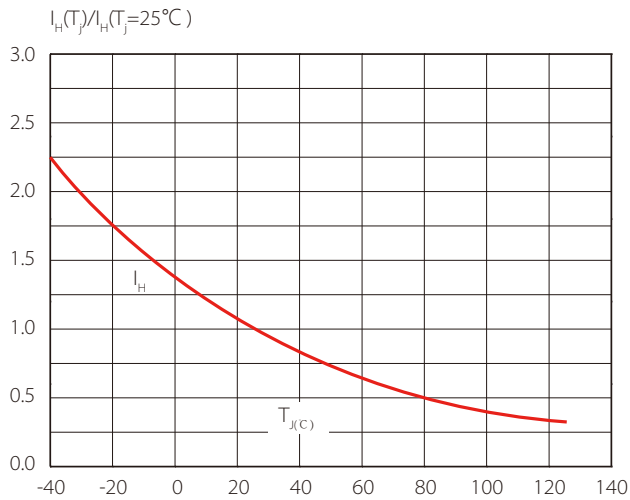
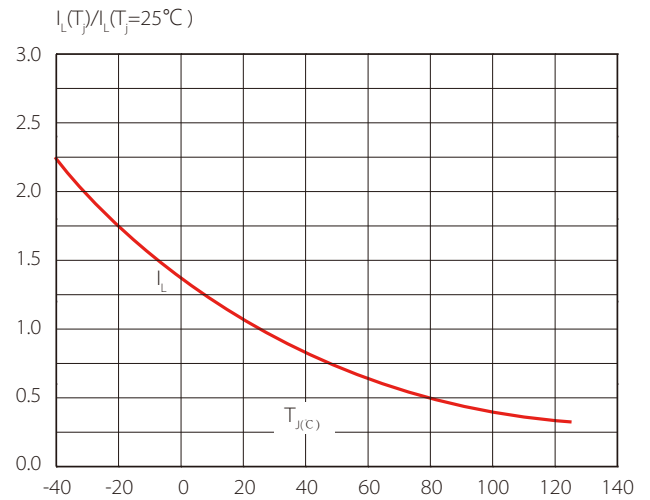
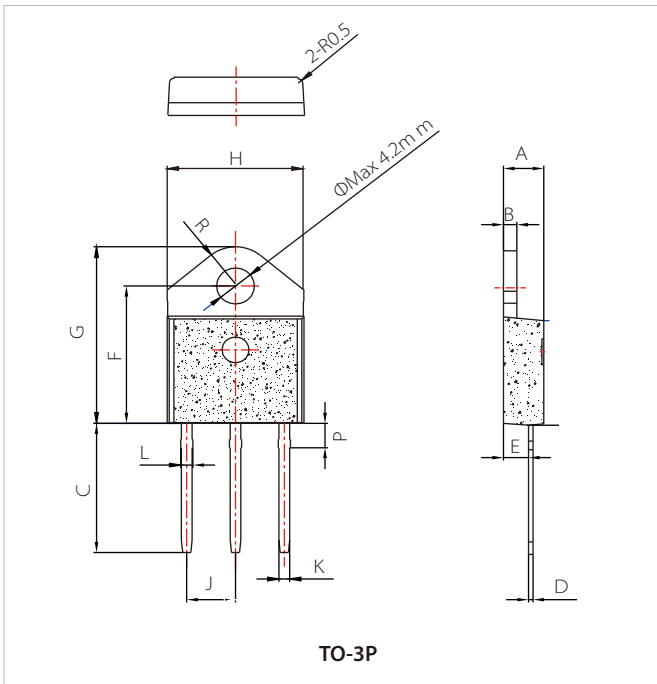


FIG.8 Relative variations of latching current versus junction temperature



PACKAGE MECHANICAL DATA



| Ref. | Dimensions | | | | | |
|------|-------------|------|-------|--------|-------|-------|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | 4.40 | | 4.60 | 0.173 | | 0.181 |
| B | 1.45 | | 1.55 | 0.057 | | 0.061 |
| C | 14.35 | | 15.60 | 0.565 | | 0.614 |
| D | 0.50 | | 0.70 | 0.020 | | 0.028 |
| E | 2.70 | | 2.90 | 0.106 | | 0.114 |
| F | 15.80 | | 16.50 | 0.622 | | 0.650 |
| G | 20.40 | | 21.10 | 0.803 | | 0.831 |
| H | 15.10 | | 15.50 | 0.594 | | 0.610 |
| J | 5.40 | | 5.65 | 0.213 | | 0.222 |
| K | 1.10 | | 1.40 | 0.043 | | 0.055 |
| L | 1.35 | | 1.50 | 0.053 | | 0.059 |
| P | 2.80 | | 3.00 | 0.110 | | 0.118 |
| R | | 4.35 | | | 0.171 | |

ORDERING INFORMATION

| Part Number | Package | Qty/pcs | | |
|----------------|---------|---------|-----------|--------|
| | | Tube | Inner Box | Carton |
| STZ25A80CW(BW) | TO-3P | 30 | 450 | 3600 |

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