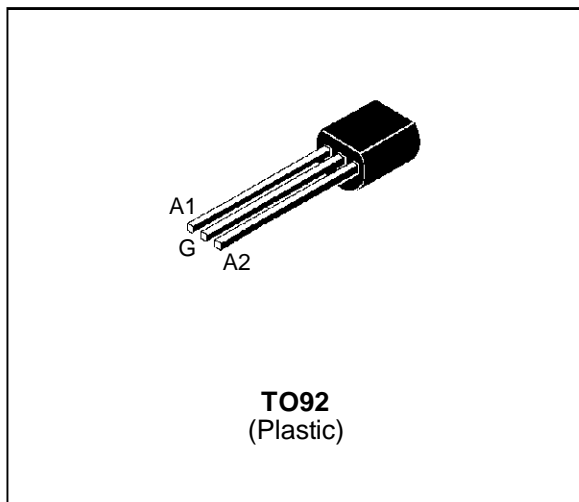


SENSITIVE GATE TRIACS
FEATURES

- $I_{T(RMS)} = 0.8A$
- $V_{DRM} = 400V$ to $800V$
- $I_{GT} \leq 3mA$ to $\leq 25mA$

DESCRIPTION

The Z01xxxA series of triacs uses a high performance TOP GLASS PNP technology. These parts are intended for general purpose applications where gate high sensitivity is required.


ABSOLUTE RATINGS (limiting values)

| Symbol | Parameter | Value | Unit |
|--------------------|--|---|------------------|
| $I_{T(RMS)}$ | RMS on-state current (360° conduction angle) | $T_I = 70\text{ }^\circ\text{C}$ 0.8 | A |
| I_{TSM} | Non repetitive surge peak on-state current (T_j initial = 25°C) | $t_p = 8.3\text{ ms}$ | 8.5 |
| | | $t_p = 10\text{ ms}$ | 8 |
| I^2t | I^2t Value for fusing | $t_p = 10\text{ ms}$ 0.32 | A^2s |
| di/dt | Critical rate of rise of on-state current $I_G = 50\text{ mA}$ $di_G/dt = 0.1\text{ A}/\mu\text{s}$. | Repetitive $F = 50\text{ Hz}$ | 10 |
| | | Non Repetitive | 50 |
| T_{stg} T_j | Storage and operating junction temperature range | - 40, + 150 - 40, + 125 | $^\circ\text{C}$ |
| T_I | Maximum lead temperature for soldering during 10s at 2mm from case | 260 | $^\circ\text{C}$ |

| Symbol | Parameter | Voltage | | | | Unit |
|------------------------|--|---------|-----|-----|-----|------|
| | | D | M | S | N | |
| V_{DRM} V_{RRM} | Repetitive peak off-state voltage $T_j = 125^\circ\text{C}$ | 400 | 600 | 700 | 800 | V |

Z01xxxA

THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|----------|--|-------|------|
| Rth(j-a) | Junction to ambient | 150 | °C/W |
| Rth(j-l) | Junction to leads for D.C | 80 | °C/W |
| Rth(j-l) | Junction to leads for A.C 360° conduction angle (F=50Hz) | 60 | °C/W |

GATE CHARACTERISTICS (maximum values)

$P_G (AV) = 0.1 \text{ W}$ $P_{GM} = 2 \text{ W}$ ($t_p = 20 \mu\text{s}$) $I_{GM} = 1 \text{ A}$ ($t_p = 20 \mu\text{s}$)

ELECTRICAL CHARACTERISTICS

| Symbol | Test Conditions | | Quadrant | | Sensitivity | | | | Unit |
|--------------------------------------|--|------------------------|-------------|-----|-------------|----|-----|-----|------|
| | | | | | 03 | 07 | 09 | 10 | |
| I _{GT} | V _D =12V (DC) R _L =140Ω | T _j = 25°C | I-II-III | MAX | 3 | 5 | 10 | 25 | mA |
| | | | IV | MAX | 5 | 7 | 10 | 25 | |
| V _{GT} | V _D =12V (DC) R _L =140Ω | T _j = 25°C | I-II-III-IV | MAX | 1.5 | | | | V |
| V _{GD} | V _D =V _{DRM} R _L =3.3kΩ | T _j = 125°C | I-II-III-IV | MIN | 0.2 | | | | V |
| t _{gt} | V _D =V _{DRM} I _G = 40mA I _T = 1.1A dI _G /dt = 0.5A/μs | T _j = 25°C | I-II-III-IV | TYP | 2 | | | | μs |
| I _H * | I _T = 50 mA Gate open | T _j = 25°C | | MAX | 7 | 10 | 10 | 25 | mA |
| I _L | I _G = 1.2 I _{GT} | T _j = 25°C | I-III-IV | TYP | 7 | 10 | 10 | 25 | mA |
| | | | II | TYP | 14 | 20 | 20 | 50 | |
| V _{TM} * | I _{TM} = 1.1A t _p = 380μs | T _j = 25°C | | MAX | 1.5 | | | | V |
| I _{DRM} I _{RDM} | V _D = V _{DRM} V _R = V _{RDM} | T _j = 25°C | | MAX | 10 | | | | μA |
| | | T _j = 110°C | | MAX | 200 | | | | |
| dV/dt * | V _D =67%V _{DRM} Gate open | T _j = 110°C | | MIN | 10 | 20 | 50 | 100 | V/μs |
| | | | | TYP | 20 | 50 | 150 | 400 | |
| (dV/dt) _c * | (dI/dt) _c = 0.35 A/ms | T _j = 110°C | | MIN | | | 2 | 5 | V/μs |
| | | | | TYP | 1 | 1 | | | |

* For either polarity of electrode A₂ voltage with reference to electrode A₁

ORDERING INFORMATION

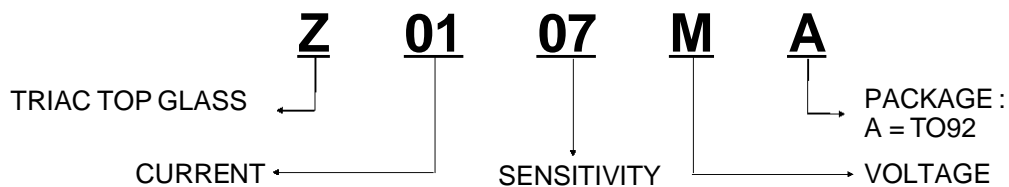


Fig.1 : Maximum RMS power dissipation versus RMS on-state current.

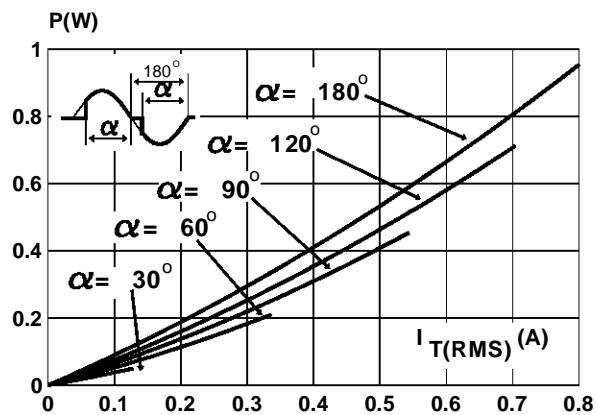


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperature (Tamb and Tlead).

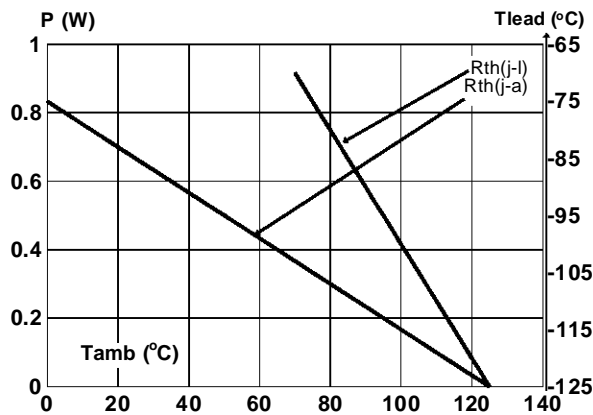


Fig.3 : RMS on-state current versus case temperature.

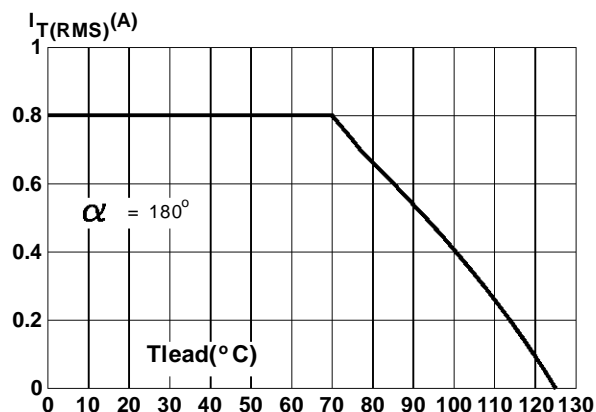


Fig.4 : Relative variation of thermal impedance junction to ambient versus pulse duration.

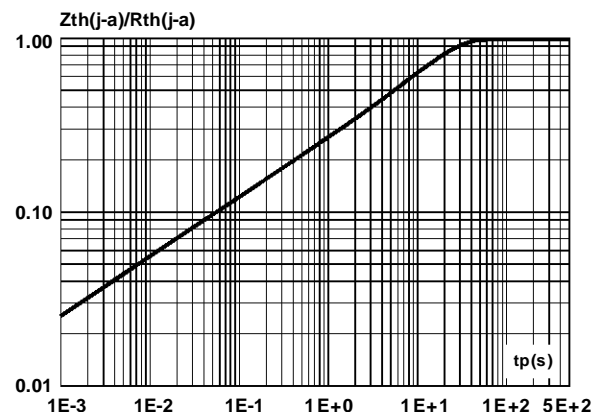


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

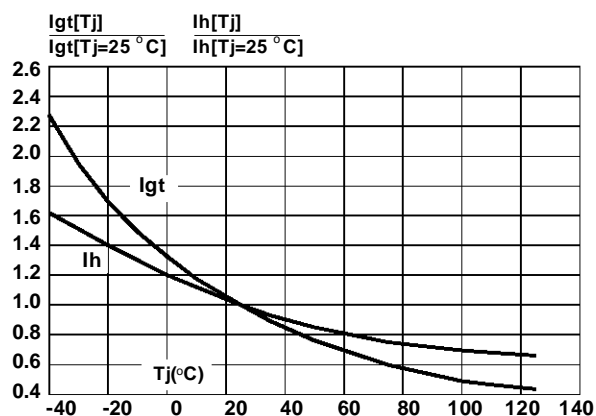
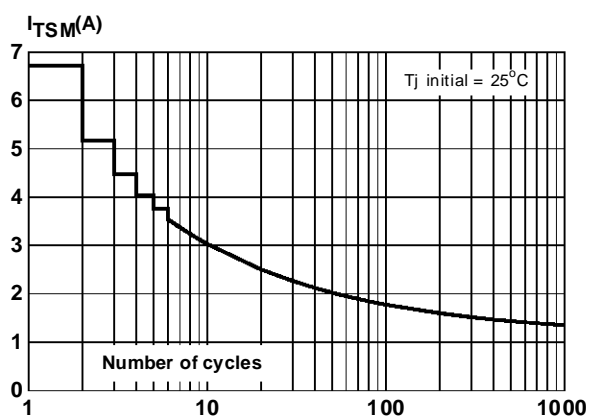


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.



Z01xxxA

Fig.7 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t_p \leq 10\text{ms}$, and corresponding value of I^2t .

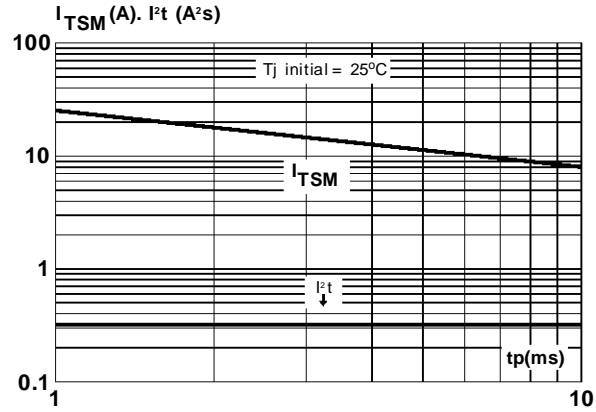
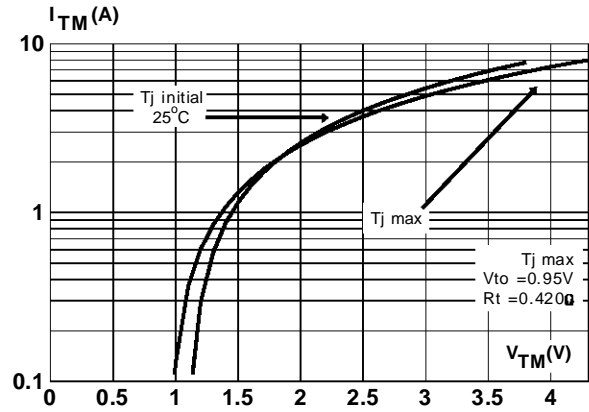
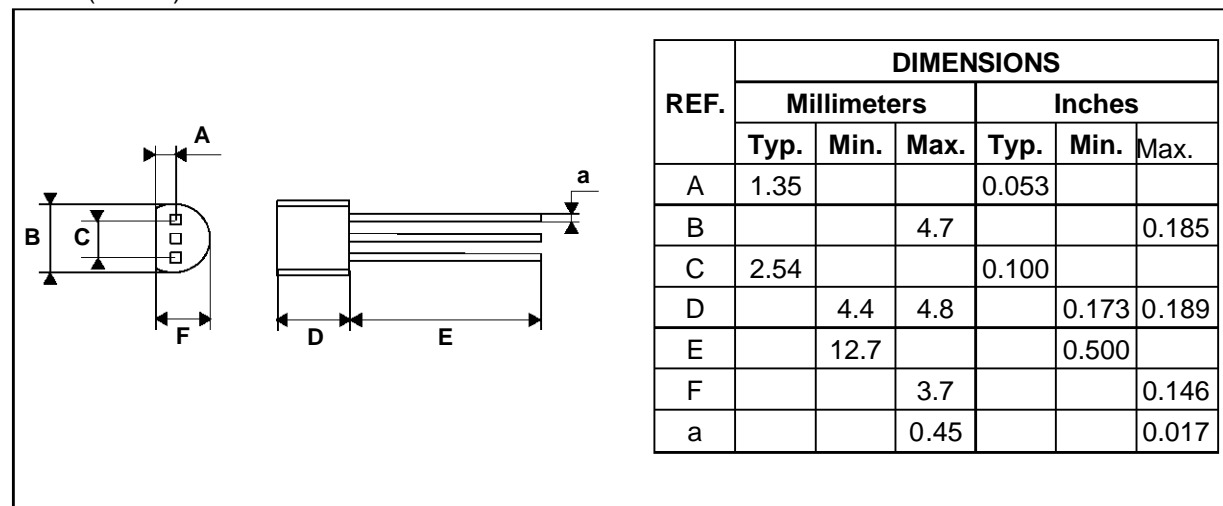


Fig.8 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA

TO92 (Plastic)



Marking : type number

Weight : 0.2 g

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