

SNUBBERLESS TRIACS

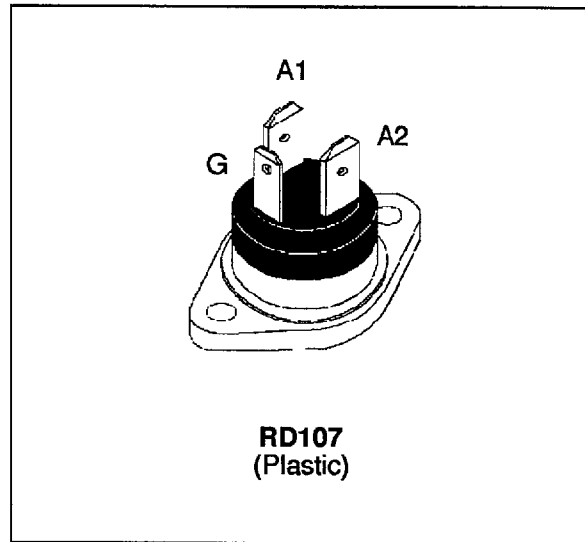
FEATURES

- $I_{T(RMS)} = 40A$
- HIGH COMMUTATION : $(di/dt)_c \geq 22A/ms$
- INSULATING VOLTAGE = $2500V_{(RMS)}$
(UL RECOGNIZED : E81734)

DESCRIPTION

The T4016xKS series of isolated triacs uses a high performance MESA GLASS technology.

The SNUBBERLESSTM concept offer suppression of RC network and it is suitable for application such as phase control and static switching on inductive or resistive load.



ABSOLUTE RATINGS (limiting values)

| Symbol | Parameter | Value | Unit |
|--------------------|---|--------------------------------|------------|
| $I_{T(RMS)}$ | RMS on-state current (360° conduction angle) | $T_c = 75^\circ C$ 40 | A |
| I_{TSM} | Non repetitive surge peak on-state current (T_j initial = $25^\circ C$) | $t_p = 8.3$ ms | 330 |
| | | $t_p = 10$ ms | 300 |
| I^2t | I^2t Value for fusing | $t_p = 10$ ms | 450 |
| di/dt | Critical rate of rise of on-state current $I_G = 50$ mA $di_G/dt = 0.1$ A/ μs . | Repetitive F = 50 Hz | 20 |
| | | Non Repetitive | 100 |
| T_{stg} T_j | Storage and operating junction temperature range | - 40 to + 125 - 40 to + 125 | $^\circ C$ |
| TI | Maximum lead temperature for soldering during 10s | 260 | $^\circ C$ |

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

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THERMAL RESISTANCES

| Symbol | Parameter | Value | Unit |
|----------|---|-------|------|
| Rth(j-c) | Junction to case for D.C | 1.2 | °C/W |
| Rth(j-c) | Junction to case for A.C 360° conduction angle (F=50Hz) | 0.9 | °C/W |

GATE CHARACTERISTICS (maximum values)

$P_G (AV) = 1W$ $P_{GM} = 10W$ ($t_p = 20 \mu s$) $I_{GM} = 4A$ ($t_p = 20 \mu s$)

ELECTRICAL CHARACTERISTICS

| Symbol | Test Conditions | | Quadrant | | Sensitivity | Unit |
|--------------------------------------|--|------------------------|----------|-----|-------------|------|
| | | | | | 16 | |
| I _{GT} | V _D =12V (DC) R _L =33Ω | T _j = 25°C | I-II-III | MIN | 2 | mA |
| | | | | MAX | 50 | |
| V _{GT} | V _D =12V (DC) R _L =33Ω | T _j = 25°C | I-II-III | MAX | 1.5 | V |
| V _{GD} | V _D =V _{DRM} R _L =3.3kΩ | T _j = 125°C | I-II-III | MIN | 0.2 | V |
| t _{gt} | V _D =V _{DRM} I _T = 56A I _G = 500mA dI _G /dt = 3A/μs | T _j = 25°C | I-II-III | TYP | 2 | μs |
| I _H * | I _T = 250mA Gate open | T _j = 25°C | | MAX | 50 | |
| I _L | I _G = 1.2 I _{GT} | T _j = 25°C | I-III | TYP | 50 | mA |
| | | | II | TYP | 100 | |
| V _{TM} * | I _{TM} = 56A t _p = 380μs | T _j = 25°C | | MAX | 1.7 | V |
| I _{DRM} I _{RRM} | V _D = V _{DRM} V _R = V _{RRM} | T _j = 25°C | | MAX | 10 | μA |
| | | T _j = 125°C | | MAX | 3 | mA |
| dV/dt * | V _D =67%V _{DRM} Gate open | T _j = 125°C | | MIN | 750 | V/μs |
| (dI/dt) _c * | Without snubber | T _j = 125°C | | MIN | 22 | A/ms |
| | | | | TYP | 44 | |

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

ORDERING INFORMATION

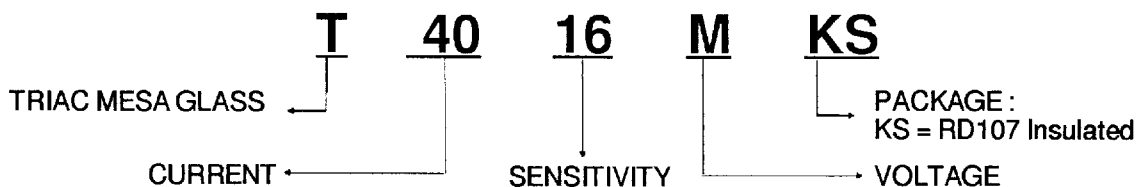


Fig.1 : Maximum power dissipation versus RMS on-state current.

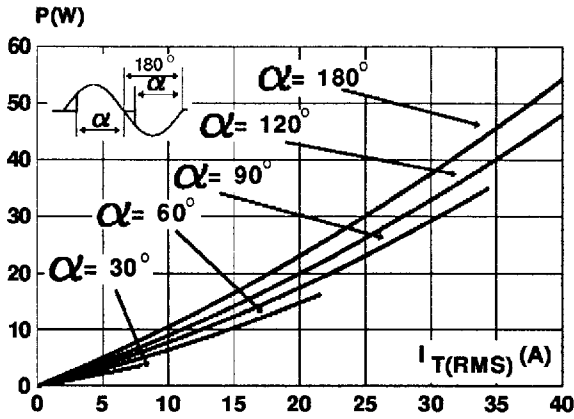


Fig.2 : Correlation between maximum power dissipation and maximum allowable temperature (T_{amb} and T_{case}) for different thermal resistances heatsink + contact.

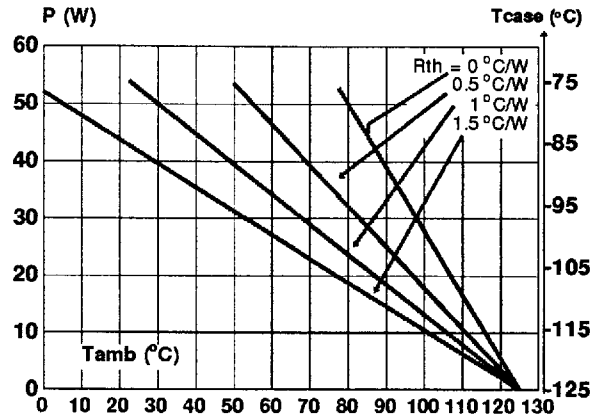


Fig.3 : RMS on-state current versus case temperature.

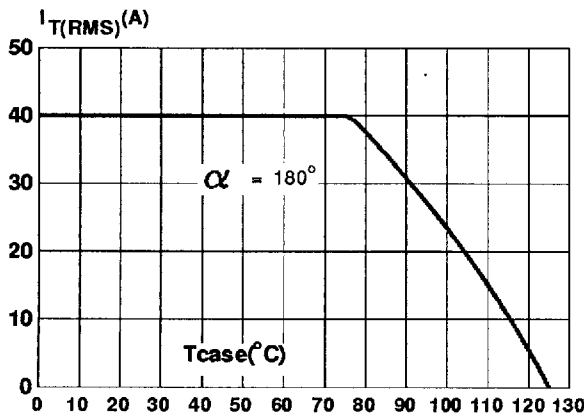


Fig.4 : Relative variation of thermal impedance junction to case versus pulse duration.

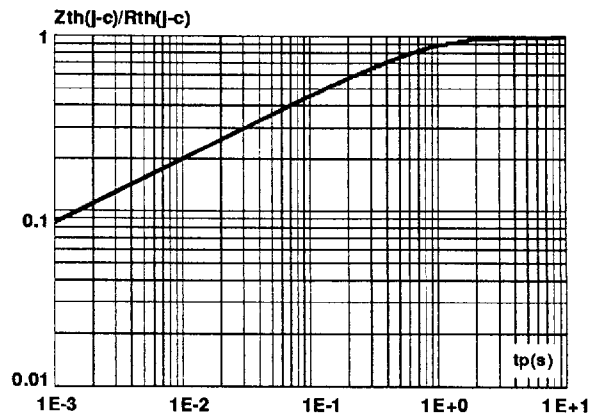


Fig.5 : Relative variation of gate trigger current and holding current versus junction temperature.

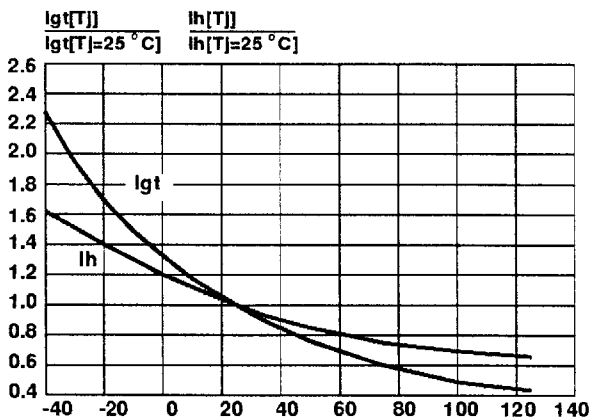
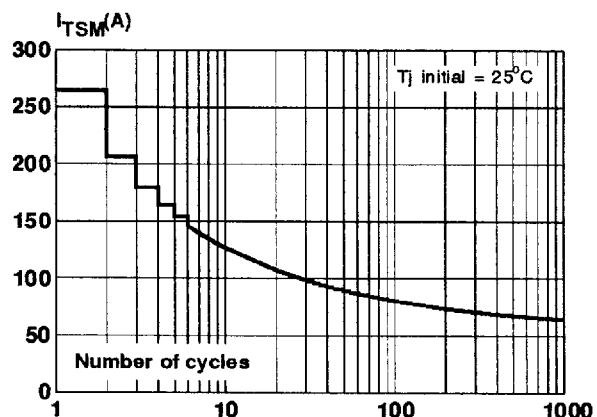


Fig.6 : Non repetitive surge peak on-state current versus number of cycles.



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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 .

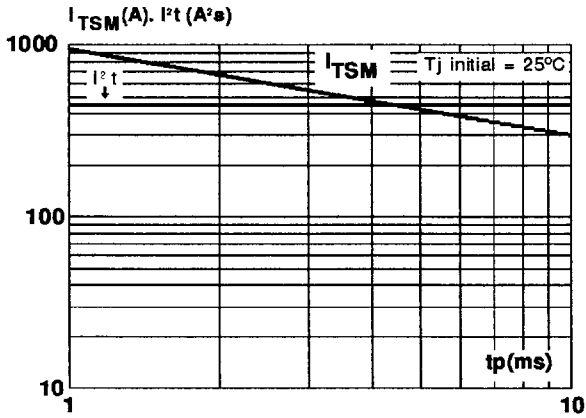
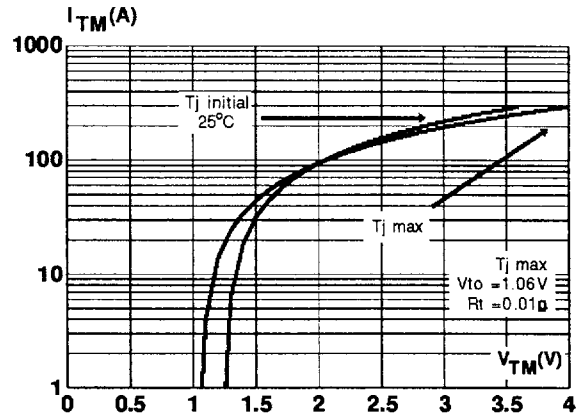
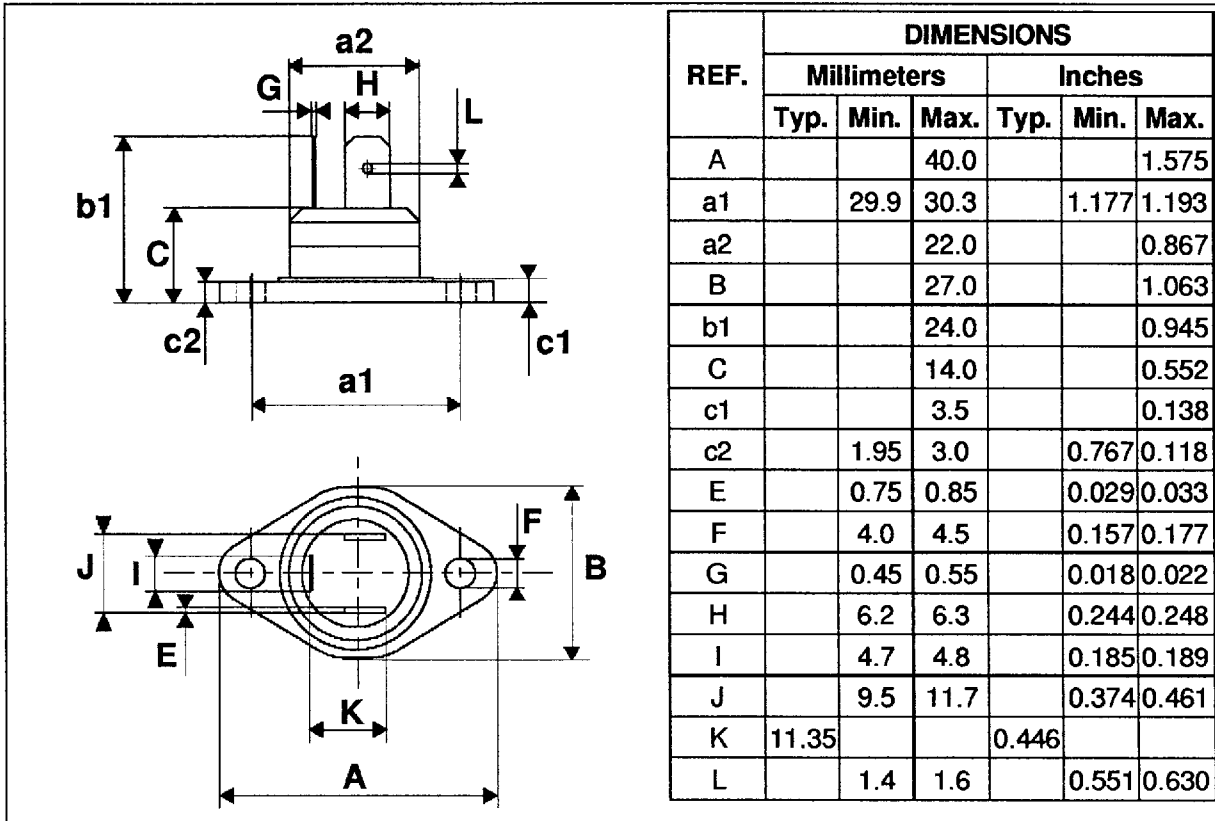


Fig.8 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA
RD 107(Plastic)



Marking : type number
Weight : 20g

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