

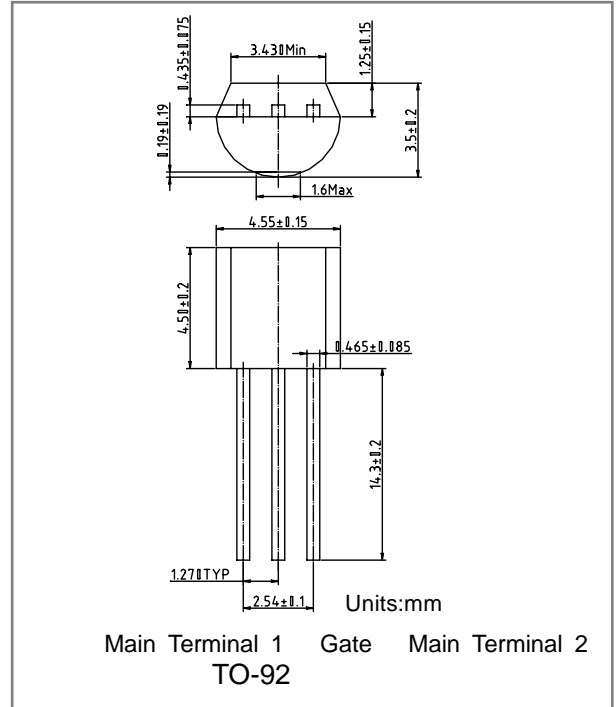
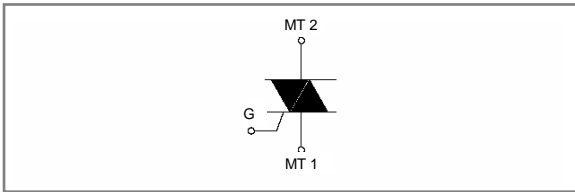
## 0.8A TRIACS

### MAIN FEATURES:

| Symbol            | Value | Unit |
|-------------------|-------|------|
| $I_{T(RMS)}$      | 0.8   | A    |
| $V_{DRM}/V_{RRM}$ | 600   | V    |
| $I_{GT(Q1)}$      | 5     | mA   |

### DESCRIPTION

The Z0607 is suitable for low power AC switching applications, such as fan speed, small light controllers... Thanks to low gate triggering current, it can be directly driven by microcontrollers.



### ABSOLUTE MAXIMUM RATINGS

| Symbol       | Parameter  |                    | Value            | Unit             |
|--------------|--|--------------------|------------------|------------------|
| $I_{T(RMS)}$ | RMS on-state current (full sine wave)  |                    | $T_I=50$<br>0.8  | A                |
| $I_{TSM}$    | Non repetitive surge peak on-state current (full cycle, $T_j$ initial=25 )   | F=50Hz    t=20ms   | 9                | A                |
|              |  | F=60Hz    t=16.7ms | 9.5              |                  |
| $I^2t$       | $I^2t$ Value for fusing  | tp=10ms            | 0.45             | A <sup>2</sup> s |
| di/dt        | Critical rate of rise of on-state current<br>$I_G=2 \cdot I_{GT}$ , tr 100ns | F=120Hz $T_j=110$  | 20               | A/μs             |
| $I_{GM}$     | Peak gate current  | tp=20 μs $T_j=110$ | 1                | A                |
| $P_{G(AV)}$  | Average gate power dissipation   |                    | $T_j=110$<br>0.1 | W                |
| $T_{sig}$    | Storage junction temperature range   |                    | -40 to +150      |                  |
| $T_j$        | Operating junction temperature range   |                    | -40 to +110      |                  |

**ELECTRICAL CHARACTERISTICS** (T<sub>j</sub> = 25°C, unless otherwise specified)

| Symbol                   | Test condition  | Quadrant |      | Value | Unit |
|--------------------------|---|----------|------|-------|------|
| I <sub>GT</sub> (1)      | V <sub>D</sub> =12V R <sub>L</sub> =30                                    | - -      | MAX. | 5     | mA   |
|                          |   | IV       |      | 7     |      |
| V <sub>GT</sub>          |   | ALL      | MAX. | 1.3   | V    |
| V <sub>GD</sub>          | V <sub>D</sub> =V <sub>DRM</sub> R <sub>L</sub> =3.3K T <sub>j</sub> =110 | ALL      | MIN. | 0.2   | V    |
| I <sub>H</sub> (2)       | I <sub>T</sub> =200mA   |          | MAX. | 5     | mA   |
| I <sub>L</sub>           | I <sub>G</sub> =1.2I <sub>GT</sub>  | - -      | MAX. | 10    | mA   |
|                          |   |          |      | 20    |      |
| dV/dt(2)                 | V <sub>D</sub> =67%V <sub>DRM</sub> gate open T <sub>j</sub> =110         |          | MIN. | 10    | V/μs |
| (dV/dt) <sub>c</sub> (2) | (dV/dt) <sub>c</sub> =0.35A/ms T <sub>j</sub> =110                        |          | MIN. | 1.5   | V/μs |

**STATIC CHARACTERISTICS**

| Symbol                               | Test condition                           |           |                     | Value               | Unit               |      |    |
|--------------------------------------|--|-----------|---------------------|---------------------|--------------------|------|----|
| V <sub>TM</sub> (2)                  | I <sub>TM</sub> =1.1A                    | tp=380 μs | T <sub>j</sub> =25  | MAX.                | 1.5                | V    |    |
| V <sub>IG</sub> (2)                  | Threshold voltage                        |           |                     | T <sub>j</sub> =110 | MAX.               | 0.95 | V  |
| R <sub>d</sub> (2)                   | Dynamic resistance                       |           |                     | T <sub>j</sub> =110 | MAX.               | 420  | m  |
| I <sub>DRM</sub><br>I <sub>RDM</sub> | V <sub>DRM</sub> =V <sub>RDM</sub> =600V |           |                     | MAX.                | T <sub>j</sub> =25 | 5    | μA |
|                                      |  |           | T <sub>j</sub> =110 |                     | 0.1                | mA   |    |

**Note 1:** minimum IGT is guaranteed at 5% of IGT max.

**Note 2:** for both polarities of Main Terminal 2 referenced to Main Terminal 1

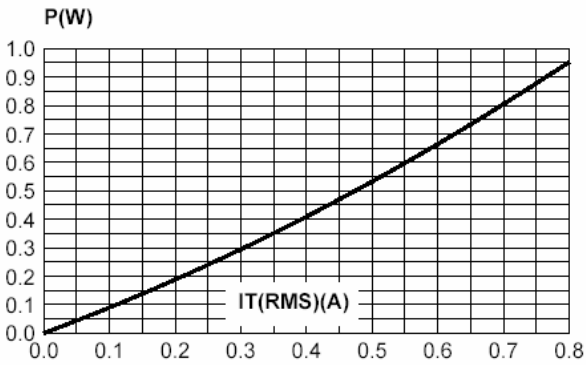
**THERMAL RESISTANCES**

| Symbol               | Parameter             | Value | Unit |
|----------------------|-----------------------|-------|------|
| R <sub>th(j-l)</sub> | Junction to lead (AC) | 60    | /W   |
| R <sub>th(j-a)</sub> | Junction to ambient   | 150   | /W   |

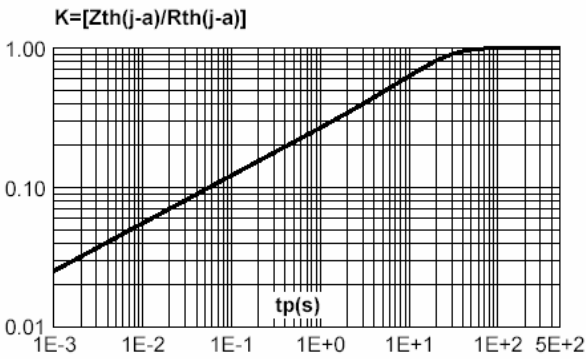
**PRODUCT SELECTOR**

| Part Number | Voltage | Sensitivity | Type     | Package |
|-------------|---------|-------------|----------|---------|
| Z0607       | 600V    | 5mA         | Standard | TO-92   |

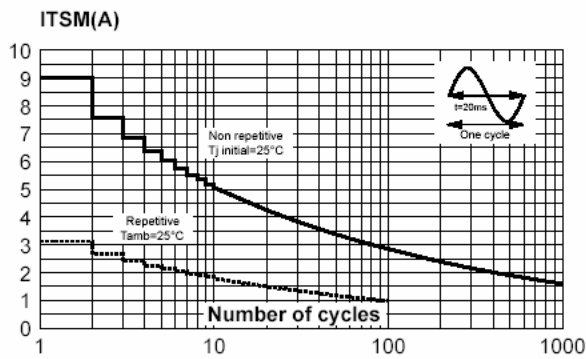
**Fig. 1:** Maximum power dissipation versus RMS on-state current (full cycle).



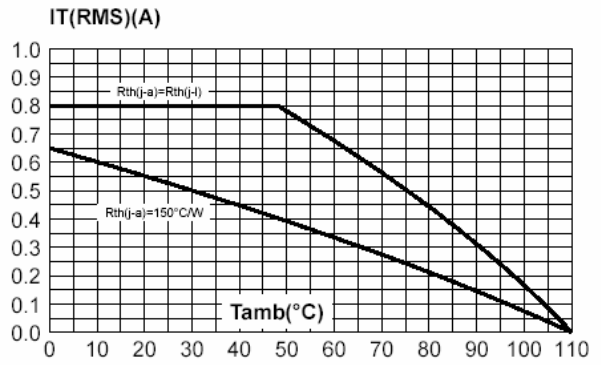
**Fig. 3:** Relative variation of thermal impedance junction to ambient versus pulse duration.



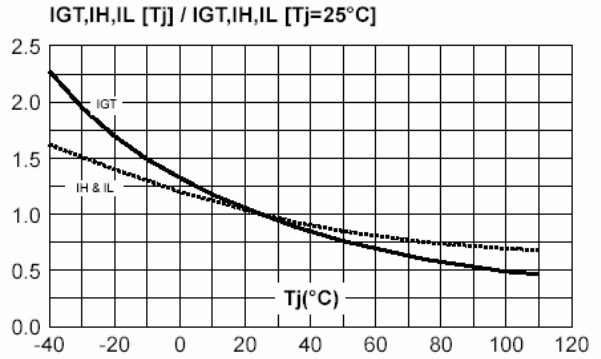
**Fig. 5:** Surge peak on-state current versus number of cycles.



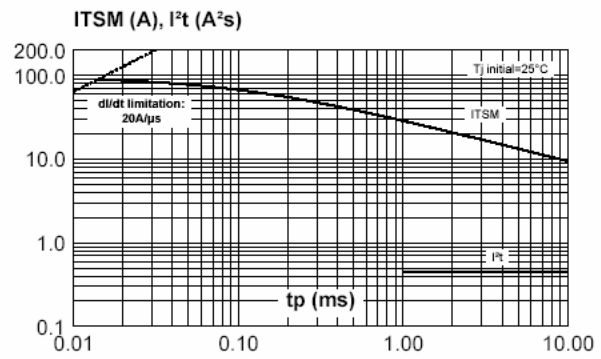
**Fig. 2:** RMS on-state current versus ambient temperature (full cycle).



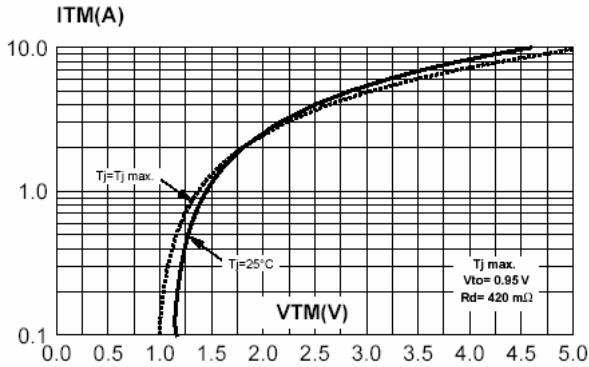
**Fig. 4:** Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).



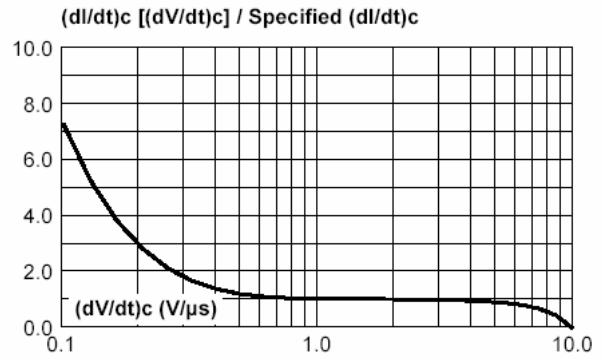
**Fig. 6:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $tp < 10\text{ms}$ , and corresponding value of  $I^2t$ .



**Fig. 7:** On-state characteristics (maximum values).



**Fig. 8:** Relative variation of critical rate of decrease of main current versus  $(dV/dt)_c$  (typical values).



**Fig. 9:** Relative variation of critical rate of decrease of main current versus junction temperature.

