

## X04xxxF

### THERMAL RESISTANCES

| Symbol   | Parameter               | Value | Unit |
|----------|-------------------------|-------|------|
| Rth(j-a) | Junction to ambient     | 100   | °C/W |
| Rth(j-c) | Junction to case for DC | 7.5   | °C/W |

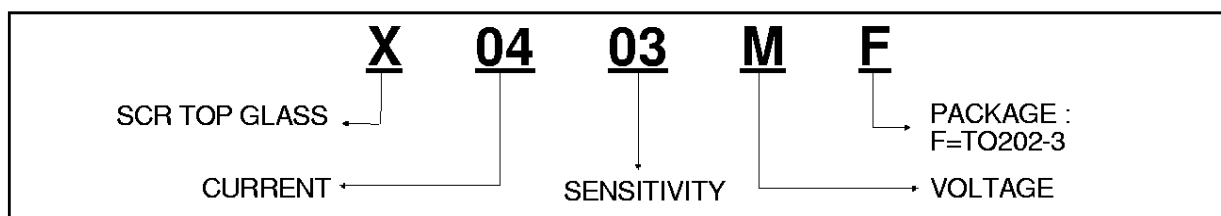
### GATE CHARACTERISTICS

$P_{G(AV)} = 0.2 \text{ W max.}$      $P_{GM} = 3 \text{ W max. (tp = 20 } \mu\text{s)}$      $I_{GM} = 1.2 \text{ A max. (tp = 20 } \mu\text{s)}$   
 $V_{GD} = 0.1 \text{ V min. (V}_D = V_{DRM} \text{ R}_L = 3.3 \text{ k}\Omega \text{ R}_{GK} = 1 \text{ k}\Omega \text{ T}_j = 125^\circ\text{C)}$

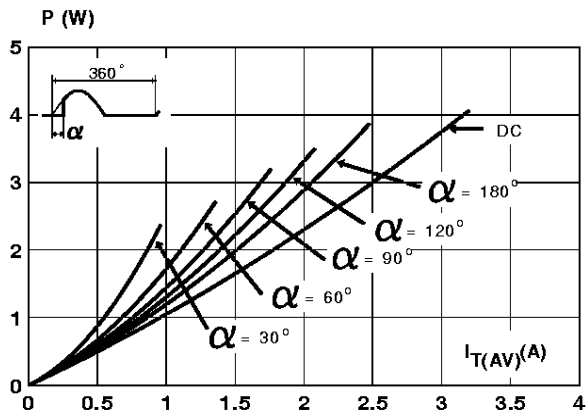
### ELECTRICAL CHARACTERISTICS

| Symbol                               | Test Conditions   |                        |     | Sensitivity |     |    | Unit |
|--------------------------------------|---|------------------------|-----|-------------|-----|----|------|
|                                      |   |                        |     | 02          | 03  | 05 |      |
| I <sub>GT</sub>                      | V <sub>D</sub> =12V (DC) R <sub>L</sub> =140Ω   | T <sub>j</sub> = 25°C  | MIN |             | 20  | 20 | μA   |
|                                      |   |                        | MAX | 200         | 200 | 50 |      |
| V <sub>GT</sub>                      | V <sub>D</sub> =12V (DC) R <sub>L</sub> =140Ω   | T <sub>j</sub> = 25°C  | MAX | 0.8         |     |    | V    |
| V <sub>RGM</sub>                     | I <sub>RG</sub> =10μA   | T <sub>j</sub> = 25°C  | MIN | 8           |     |    | V    |
| I <sub>H</sub>                       | I <sub>T</sub> = 50mA R <sub>GK</sub> = 1 KΩ  | T <sub>j</sub> = 25°C  | MAX | 5           |     |    | mA   |
| I <sub>L</sub>                       | I <sub>G</sub> =1mA R <sub>GK</sub> = 1 KΩ  | T <sub>j</sub> = 25°C  | MAX | 6           |     |    | mA   |
| V <sub>TM</sub>                      | I <sub>TM</sub> = 8A tp= 380μs  | T <sub>j</sub> = 25°C  | MAX | 1.8         |     |    | V    |
| I <sub>DRM</sub><br>I <sub>RRM</sub> | V <sub>D</sub> = V <sub>DRM</sub> R <sub>GK</sub> = 1 KΩ<br>V <sub>R</sub> = V <sub>RRM</sub> | T <sub>j</sub> = 25°C  | MAX | 5           |     |    | μA   |
|                                      |   | T <sub>j</sub> = 110°C | MAX | 200         |     |    |      |
| dV/dt                                | V <sub>D</sub> =67%V <sub>DRM</sub> R <sub>GK</sub> = 1 KΩ                                    | T <sub>j</sub> = 110°C | MIN | 10          | 15  | 15 | V/μs |

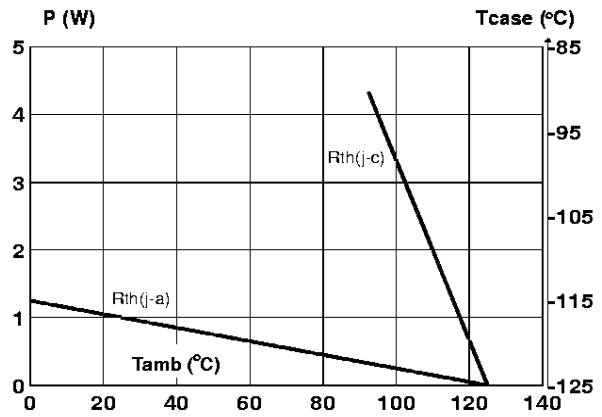
### ORDERING INFORMATION



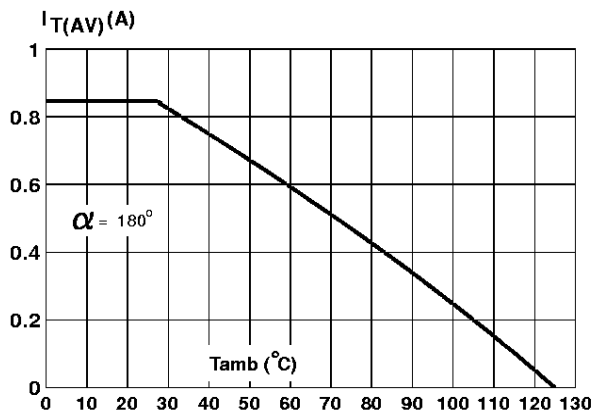
**Fig.1** : Maximum average power dissipation versus average on-state current.



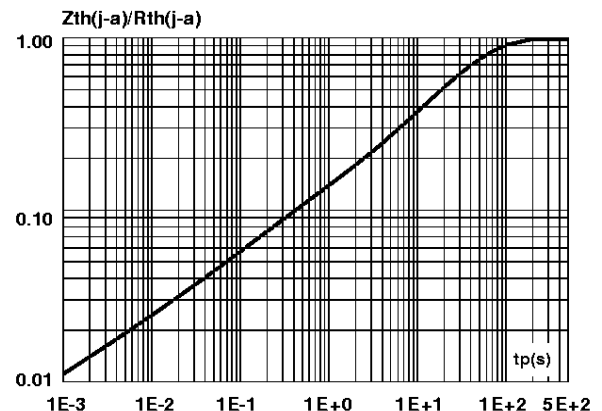
**Fig.2** : Correlation between maximum average power dissipation and maximum allowable temperature ( $T_{amb}$  and  $T_{case}$ ).



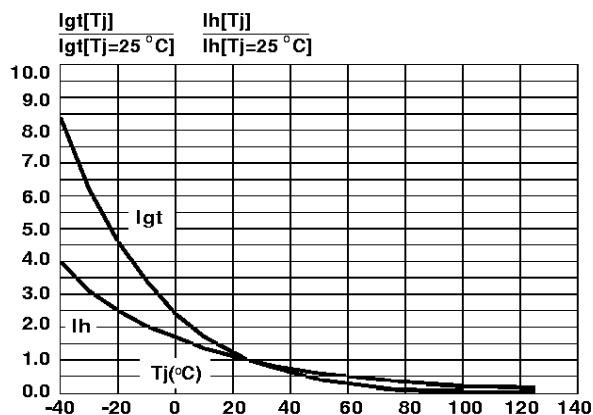
**Fig.3** : Average on-state current versus case temperature.



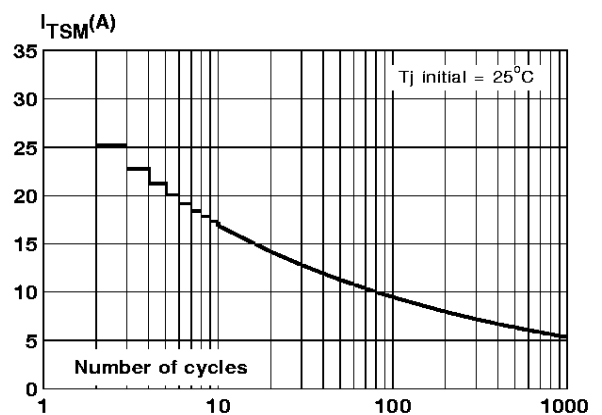
**Fig.4** : Relative variation of thermal impedance junction to ambient versus pulse duration.



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

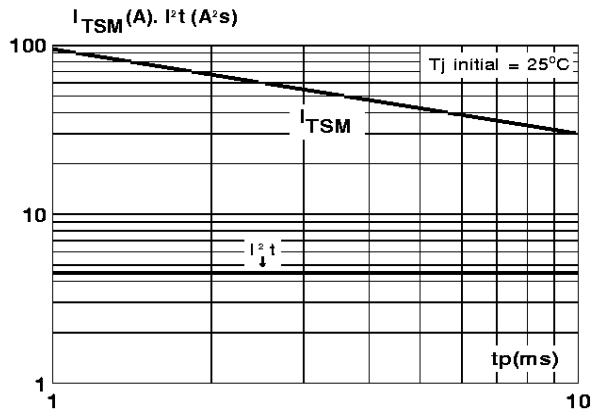


**Fig.6** : Non repetitive surge peak on-state current versus number of cycles.

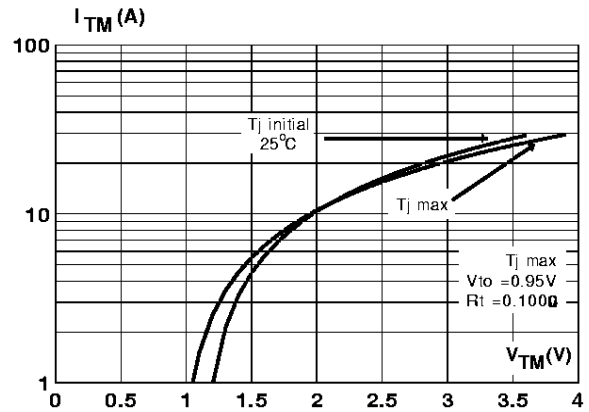


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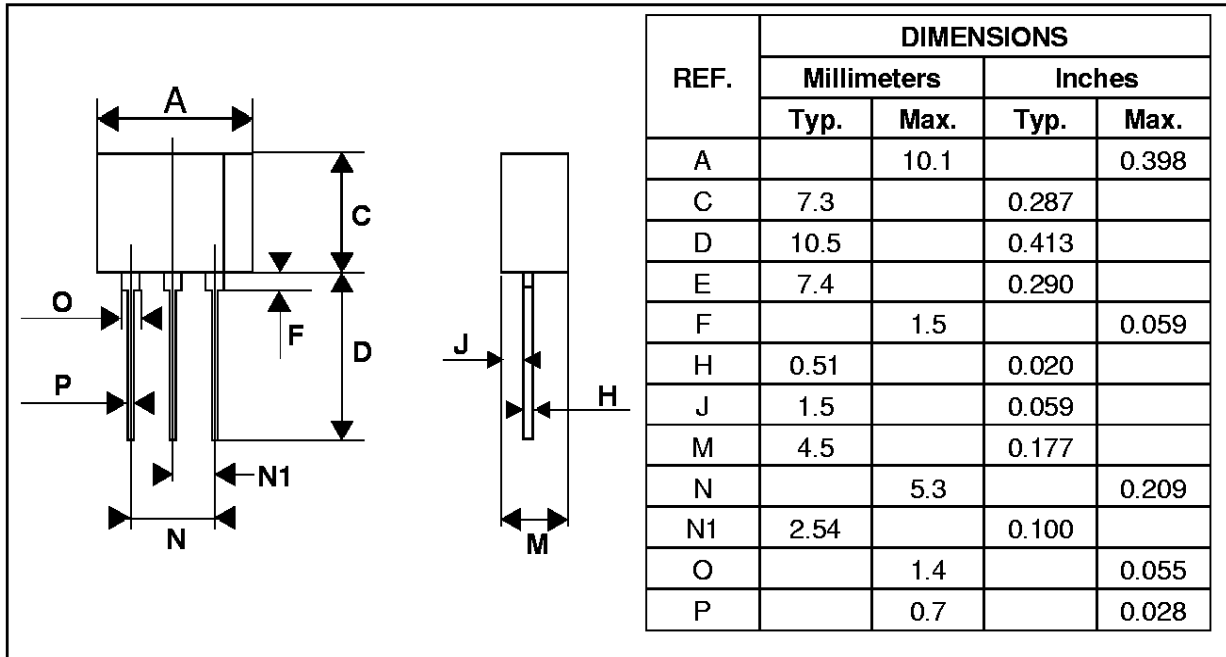
**Fig.7** : Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t_p \leq 10\text{ms}$ , and corresponding value of  $I^2t$ .



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



### PACKAGE MECHANICAL DATA TO202-3 (Plastic)



Marking : type number

Weight : 1 g

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