

#### Description

Glass passivated, sensitive gate thyristors in a plastic envelope, intended for use in general purpose switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

|                                                                                   |             |                                                                                             |  |
|-----------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------|--|
| Symbol                                                                            |             | Simplified outline                                                                          |  |
|  |             | <br>TO-251 |  |
| Pin                                                                               | Description |                                                                                             |  |
| 1                                                                                 | Cathode     |                                                                                             |  |
| 2                                                                                 | anode       |                                                                                             |  |
| 3                                                                                 | gate        |                                                                                             |  |
| TAB                                                                               | anode       |                                                                                             |  |

#### Applications:

- ◆ Motor control
- ◆ Industrial and domestic lighting
- ◆ Heating
- ◆ Static switching

#### Features

- ◆ Blocking voltage to 600 V
- ◆ On-state RMS current to 5 A
- ◆ Ultra low gate trigger current

| SYMBOL      | PARAMETER                             | Value | Unit |
|-------------|---------------------------------------|-------|------|
| $V_{DRM}$   | Repetitive peak off-state voltages    | 600   | V    |
| $I_T (RMS)$ | RMS on-state current (full sine wave) | 7.8   | A    |
| $I_{TAV}$   | Average On-state Current              | 5     | A    |

| SYMBOL        | PARAMETER               | CONDITIONS | Value | TYP | MAX | UNIT |
|---------------|-------------------------|------------|-------|-----|-----|------|
| $R_{th(j-c)}$ | Junction to case        |            | -     | -   | 3.0 | °C/W |
| $R_{th(j-l)}$ | Junction to lead for DC |            | -     | -   | -   | °C/W |

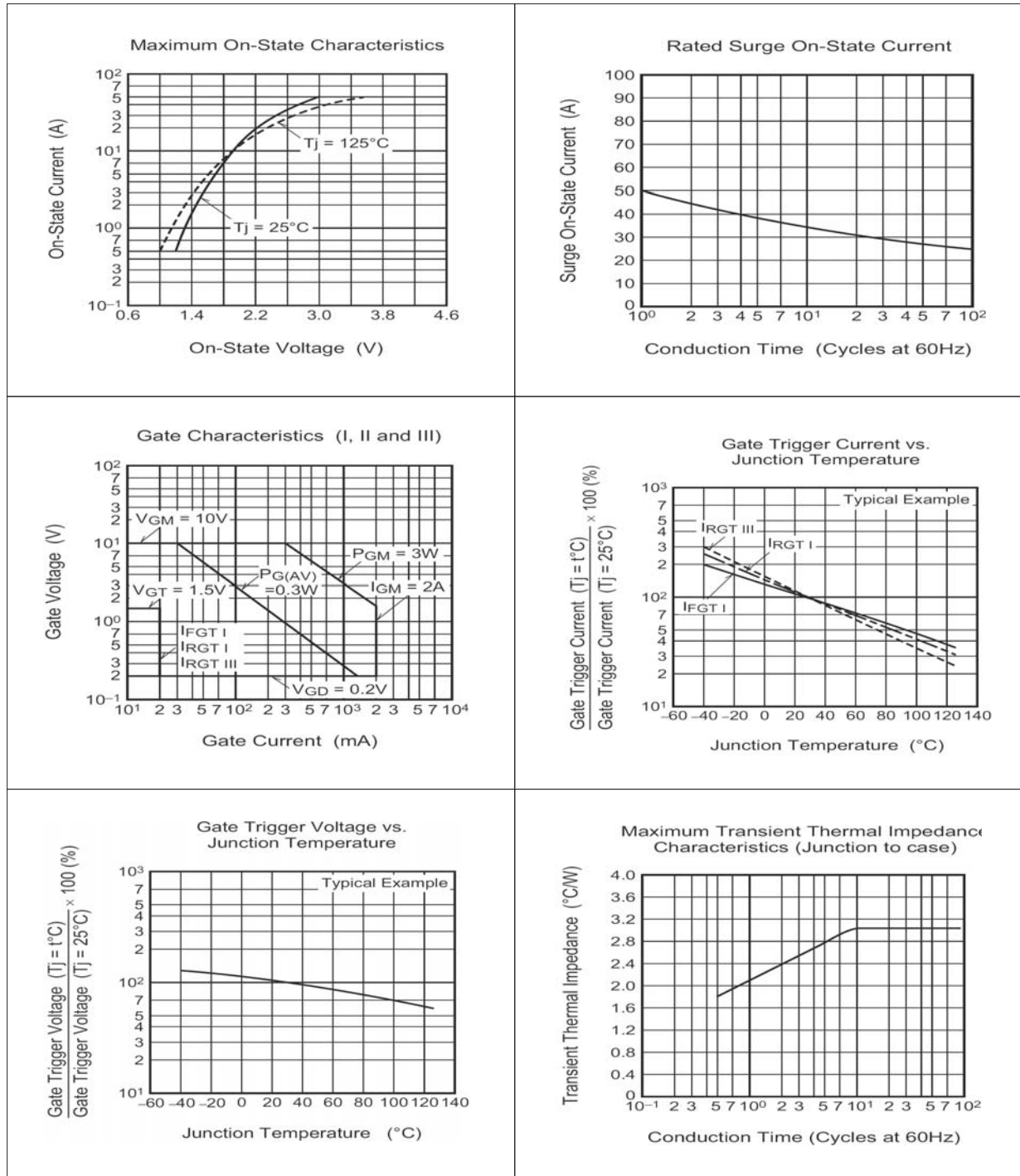
Limiting values in accordance with the Maximum system(IEC 134)

| SYMBOL       | PARAMETER                       | CONDITIONS                                                             | MIN | Value | UNIT             |
|--------------|---------------------------------|------------------------------------------------------------------------|-----|-------|------------------|
| $V_{RRM}$    | Repetitive peak reverse voltage |                                                                        | -   | 600   | V                |
| $I_{T(RMS)}$ | RMS on-state current            |                                                                        | -   | 5     | A                |
| $I_{FGM}$    | Peak gate forward current       |                                                                        | -   | 0.3   | A                |
| $I^2t$       | $I^2t$ for fusing               | Value corresponding to 1cycle of half wave 60Hz,surge on-state current | -   | 33    | A <sup>2</sup> s |
| $I_{TSM}$    | Surge on-state current          | 60Hz sine half wave 1 full cycle,peak value,non-repetitive             | -   | 90    | A                |
|              |                                 |                                                                        | -   | -     | A                |
| $P_{G(AV)}$  | Average gate power dissipation  |                                                                        | -   | 0.1   | W                |
| $T_j$        | Junction temperature            |                                                                        | -40 | 125   | °C               |
| $T_{stg}$    | Storage temperature             |                                                                        | -40 | 125   | °C               |
| $P_{GM}$     | Peak gate power dissipation     |                                                                        | -   | 0.5   | W                |

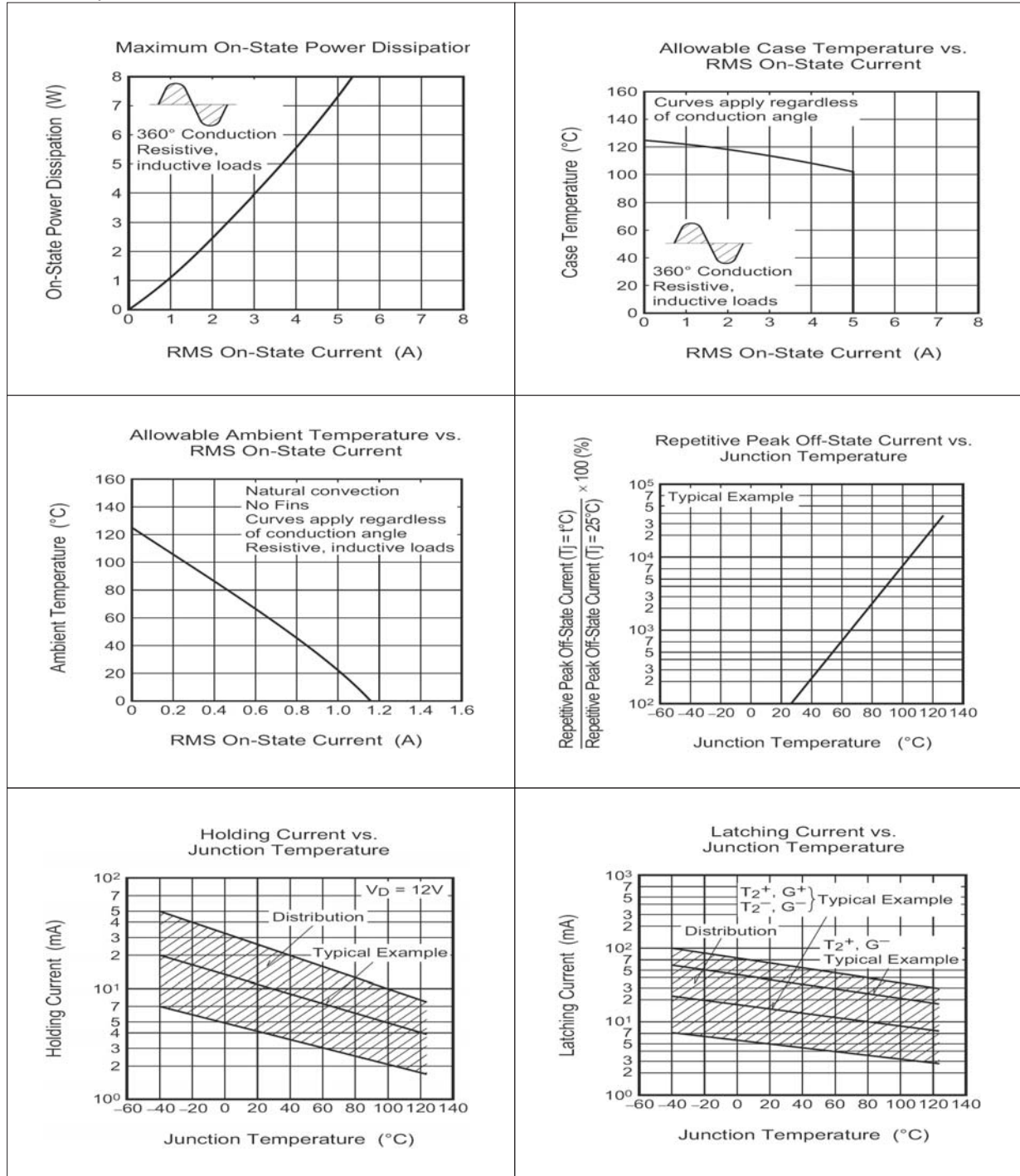
$T_j=25^{\circ}\text{C}$  unless otherwise stated

| SYMBOL                 | PARAMETER                         | CONDITIONS                                                         | MIN | TYP | MAX | UNIT          |
|------------------------|-----------------------------------|--------------------------------------------------------------------|-----|-----|-----|---------------|
| Static characteristics |                                   |                                                                    |     |     |     |               |
| $I_{GT}$               | Gate trigger current              | $T_a=25^{\circ}\text{C}, V_D=6\text{V}, I_T=0.1\text{A}$           | 1   | -   | 200 | $\mu\text{A}$ |
| $V_{GT}$               | Gate trigger voltage              | $T_a=25^{\circ}\text{C}, V_D=6\text{V}, I_T=0.1\text{A}$           | -   | -   | 0.8 | V             |
| $V_{GD}$               | Gate non-trigger voltage          | $T_j=125^{\circ}\text{C}, V_D=1/2V_{DRM}, R_{GK}=1\text{K}\Omega$  | 0.1 | -   | -   | V             |
| $V_{TM}$               | On-state voltage                  | $T_a=25^{\circ}\text{C}, I_{TM}=0.6\text{A}$ , instantaneous value | -   | -   | 1.8 | V             |
| $I_H$                  | Holding current                   | $T_j=25^{\circ}\text{C}, V_D=12\text{V}, R_{GK}=1\text{K}\Omega$   | -   | -   | 3.5 | mA            |
| $I_{DRM}$              | Repetitive peak off-state current | $T_j=125^{\circ}\text{C}, V_{DRM}$ applied, $R_{GK}=220\Omega$     | -   | -   | 2.0 | mA            |
| $I_{RRM}$              | Repetitive peak reverse current   | $T_j=125^{\circ}\text{C}, V_{RRM}$ applied                         | -   | -   | 2.0 |               |

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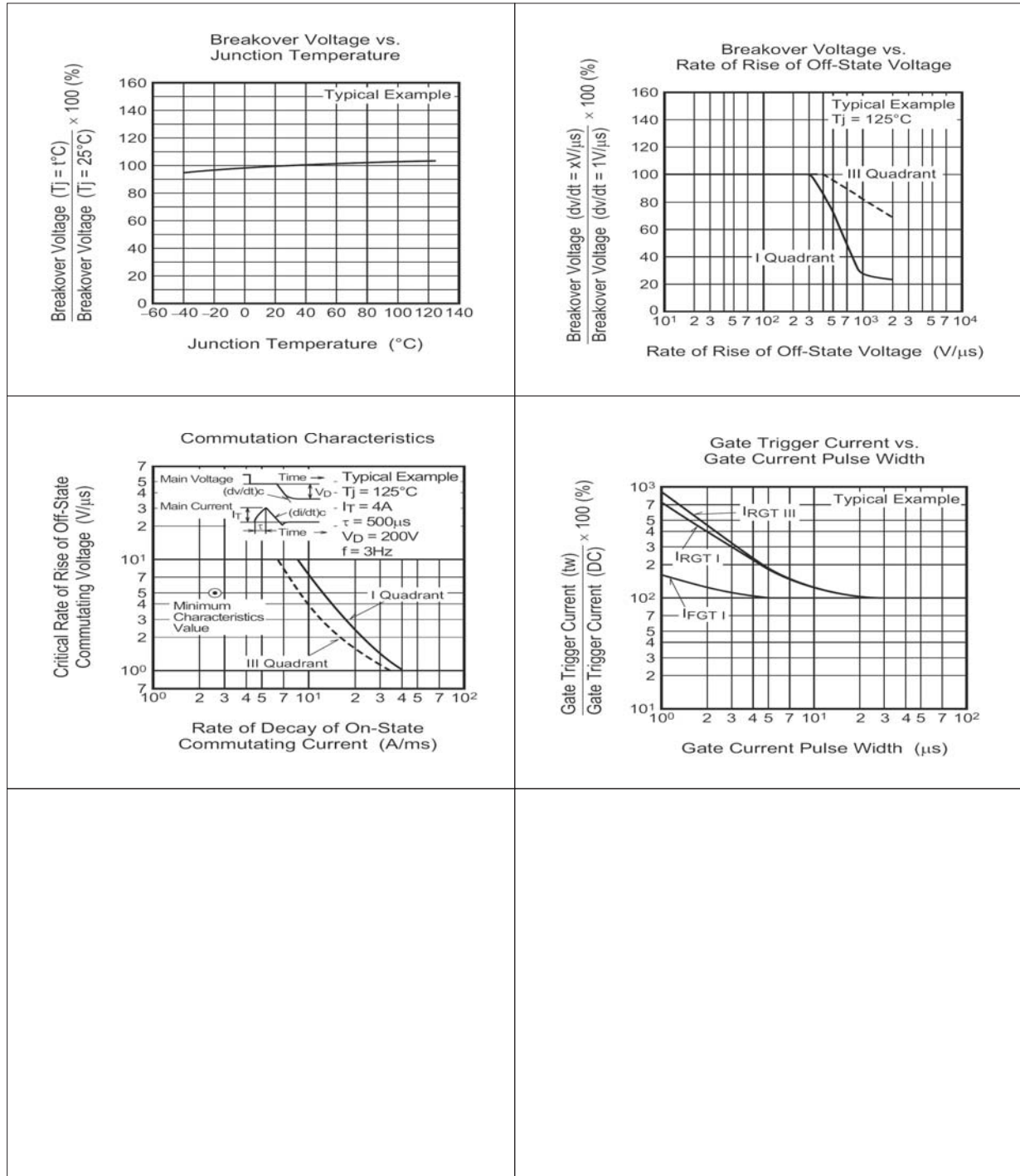


#### Description



### HAOPIN MICROELECTRONICS CO.,LTD.

#### Description





S848

SCRs

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HAOPIN MICROELECTRONICS CO.,LTD.

MECHANICAL DATA

Dimensions in mm

Net Mass:0.2 g

TO-92