



**Key Parameters**

|                     |          |
|---------------------|----------|
| $V_{DRM} / V_{RRM}$ | = 2200V  |
| $I_{T(AV)}$         | = 215A   |
| $I_{TSM}$           | = 10000A |
| $V_{T(TO)}$         | = 0.95V  |
| $r_T$               | = 0.92mΩ |

**Features**

- Full blocking capability over wide temperature range
- Heat transfer through aluminium oxide ceramic isolated metal baseplate
- Pressure contacts technology for high reliability
- UL Recognized, file no. E505556


**Applications**

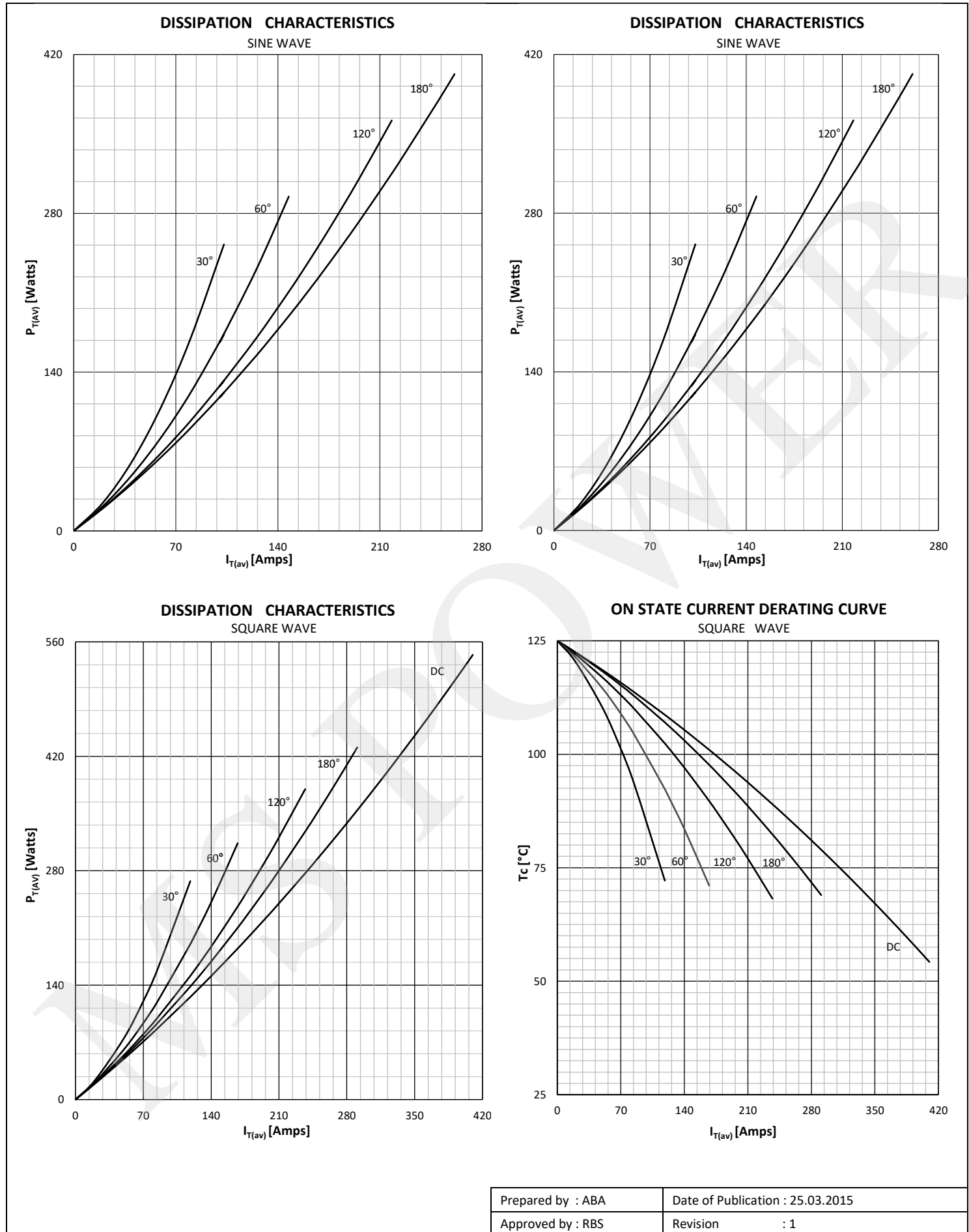
- Power Supplies
- DC motor control
- Controlled Rectifiers
- AC switch

**Ordering Information**

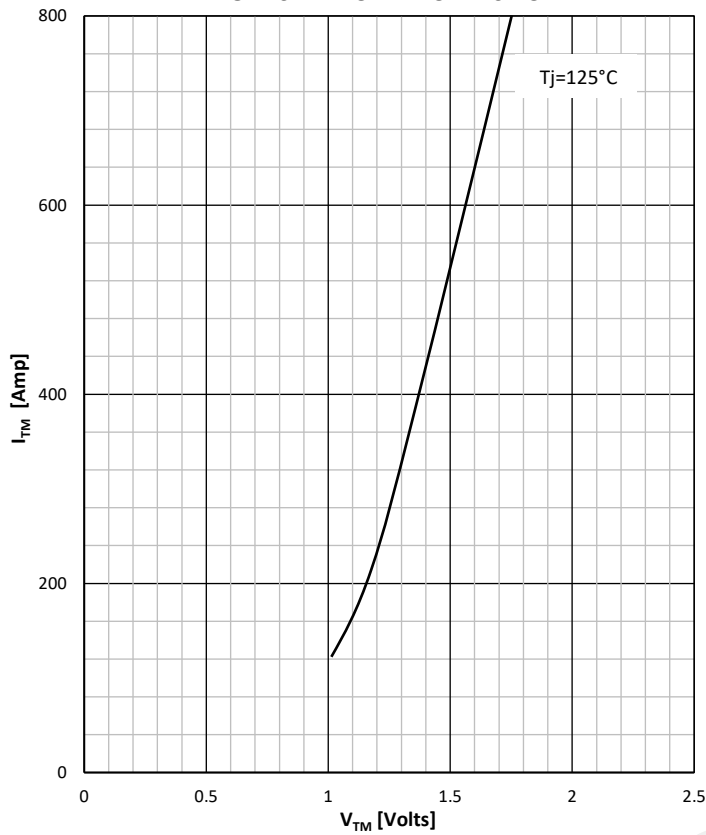
|  |                             |              |   |  |
|--|-----------------------------|--------------|---|--|
| <b>MS</b>  | <b>TD</b>                   | <b>215</b>   | <b>K</b>                                      | <b>22</b>                                      |
| Fixed code   | TD- Thyristor- Diode Module | Current Code | Technology<br>K = Pressure Contact Technology | Voltage Code<br>Code X 100 = $V_{DRM}/V_{RRM}$ |
| Order Code MS TD215K22 : 2200V $V_{DRM}, V_{RRM}$ , Thyristor-Diode Module |                             |              |   |  |

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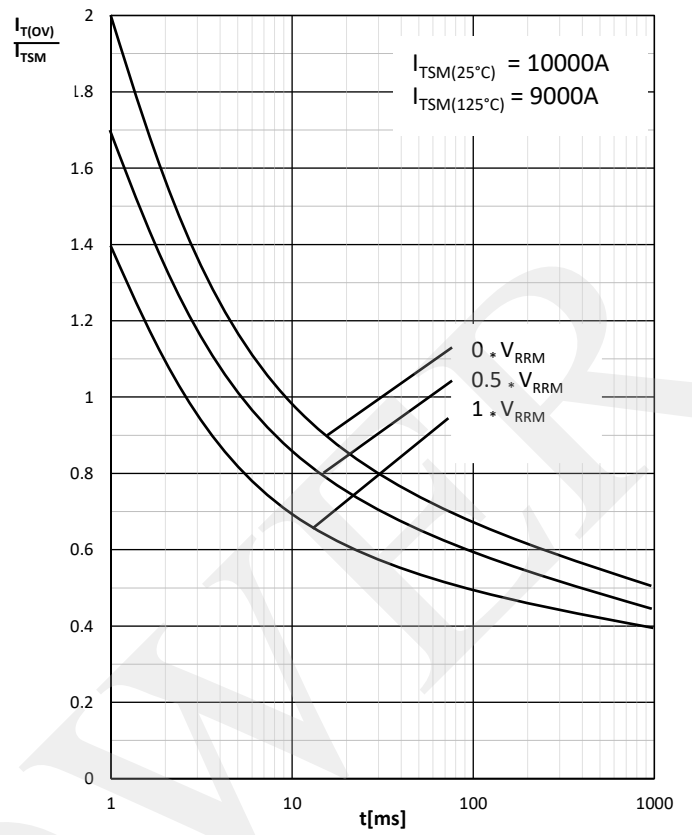
| Symbol   | Characteristic                             | Conditions   | T <sub>j</sub><br>[°C] | Value                            | Unit             |
|--|--|--|------------------------|----------------------------------|------------------|
| <b>BLOCKING</b>  |  |  |                        |                                  |                  |
| V <sub>RRM</sub>   | Repetitive peak reverse voltage            |  | 125                    | 2000 - 2200                      | V                |
| V <sub>RSM</sub>   | Non-repetitive peak reverse voltage        |  | 125                    | 2100 - 2300                      | V                |
| V <sub>DRM</sub>   | Repetitive peak off-state voltage          |  | 125                    | 2000 - 2200                      | V                |
| I <sub>RRM</sub>   | Repetitive peak reverse current            | V = V <sub>RRM</sub>                                   | 125                    | 50                               | mA               |
| I <sub>DRM</sub>   | Repetitive peak off-state current          | V = V <sub>DRM</sub>                                   | 125                    | 50                               | mA               |
| <b>CONDUCTING</b>  |  |  |                        |                                  |                  |
| I <sub>T(AV)</sub>   | Mean on state current                      | 180° sin ,50 Hz, T <sub>c</sub> =85°C                  |                        | 215                              | A                |
| I <sub>RMS</sub>   | RMS on-state current                       |  |                        | 410                              | A                |
| I <sub>TSM</sub>   | Surge on-state current                     | Sine wave, 10 ms<br>Without reverse voltage            | 25                     | 10000                            | A                |
|  |  |  | 125                    | 9000                             | A                |
| I <sup>2</sup> t   | I <sup>2</sup> t                           | Sine wave, 10 ms<br>Without reverse voltage            | 25                     | 500000                           | A <sup>2</sup> s |
|  |  |  | 125                    | 405000                           | A <sup>2</sup> s |
| V <sub>T</sub>   | On-state voltage                           | On-state current = 800A                                | 125                    | 1.75                             | V                |
| V <sub>T(TO)</sub>   | Threshold voltage                          |  | 125                    | 0.95                             | V                |
| r <sub>T</sub>   | On-state slope resistance                  |  | 125                    | 0.92                             | mΩ               |
| <b>SWITCHING</b>   |  |  |                        |                                  |                  |
| di/dt  | Critical rate of rise of on-state current  | f=50Hz, I <sub>GM</sub> =1A, di <sub>G</sub> /dt=1A/μs | 125                    | 100                              | A/μs             |
| dv/dt  | Critical rate of rise of off-state voltage | V <sub>DR</sub> = 67%V <sub>DRM</sub>                  | 125                    | 1000                             | V/μs             |
| <b>GATE</b>  |  |  |                        |                                  |                  |
| I <sub>gt</sub>  | Gate trigger current                       | V <sub>D</sub> =6V                                     | 25                     | 200                              | mA               |
| V <sub>gt</sub>  | Gate trigger voltage                       | V <sub>D</sub> =6V                                     | 25                     | 3.0                              | V                |
| I <sub>H</sub>   | Holding current                            | V <sub>D</sub> =6V, gate open circuit                  | 25                     | 600                              | mA               |
| I <sub>L</sub>   | Latching current                           | V <sub>D</sub> =6V                                     | 25                     | 1000                             | mA               |
| <b>MOUNTING</b>  |  |  |                        |                                  |                  |
| R <sub>th(j-c)</sub>   | Thermal impedance, sin 180°                | Junction to case, per arm<br>per module                |                        | 0.130<br>0.065                   | °C/W             |
| R <sub>th(j-c)</sub>   | Thermal impedance, rec120°                 | Junction to case, per arm<br>per module                |                        | 0.150<br>0.075                   | °C/W             |
| R <sub>th(c-h)</sub>   | Thermal impedance                          | Case to heatsink, per arm<br>per module                |                        | 0.04<br>0.02                     | °C/W             |
| T <sub>j</sub>   | Max. junction temperature                  |  |                        | 125                              | °C               |
| T <sub>stg</sub>   | Storage temperature                        |  |                        | -40 .... 150                     | °C               |
| V <sub>ISOL</sub>  | Insulation test voltage,RMS                | F=50Hz, 1min   |                        | 3.0                              | KV               |
| M1   | Mounting torque                            |  |                        | 5 ± 15%                          | Nm               |
| M2   | Terminal connection torque                 |  |                        | 12 ± 15%                         | Nm               |
| W  | Weight (Approx.)                           |  |                        | 650                              | gm               |
|  | File No.                                   |  |                        | E505556                          |                  |
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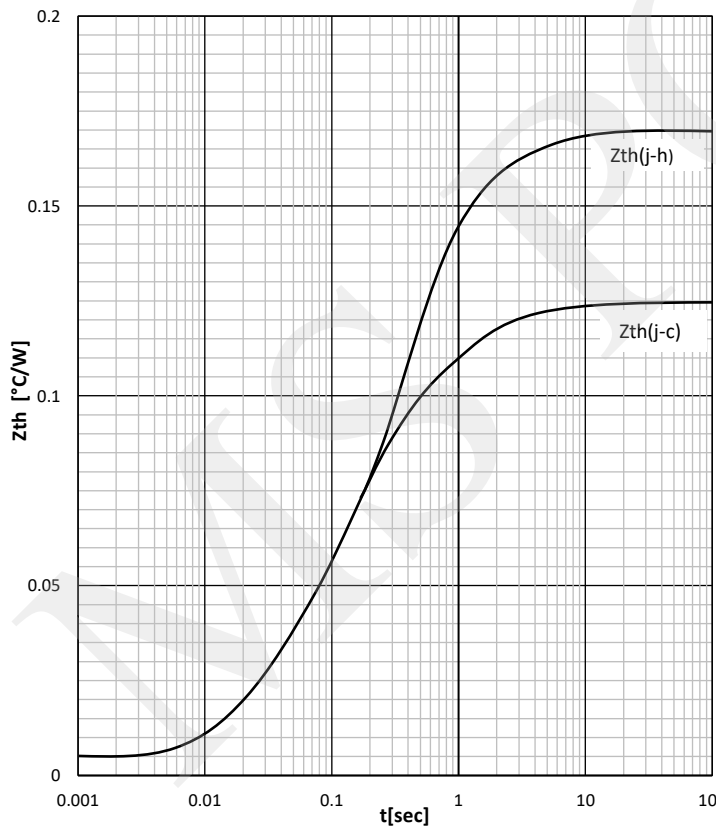
ON -STATE CHARACTERISTIC



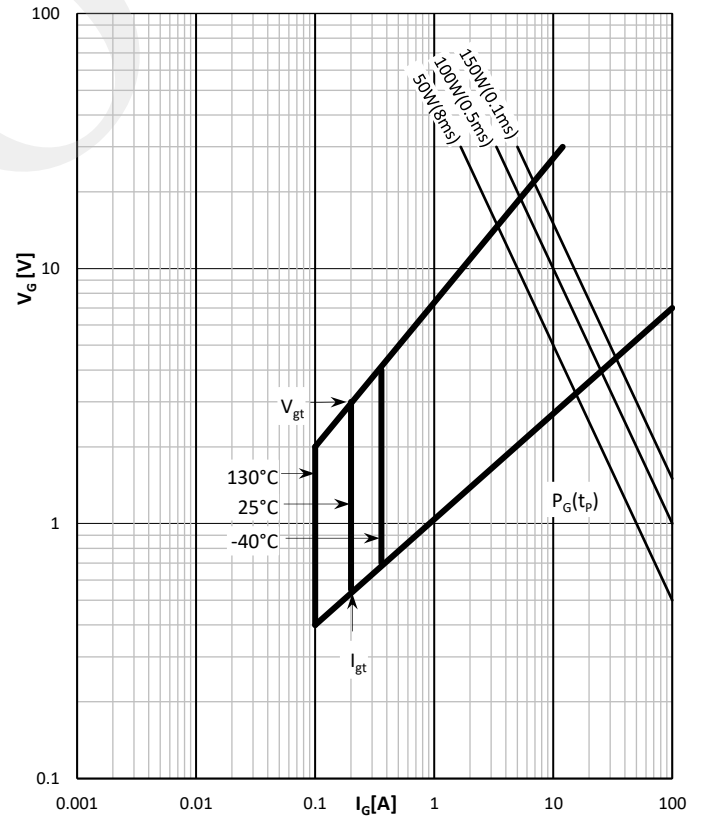
SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE, PER ARM

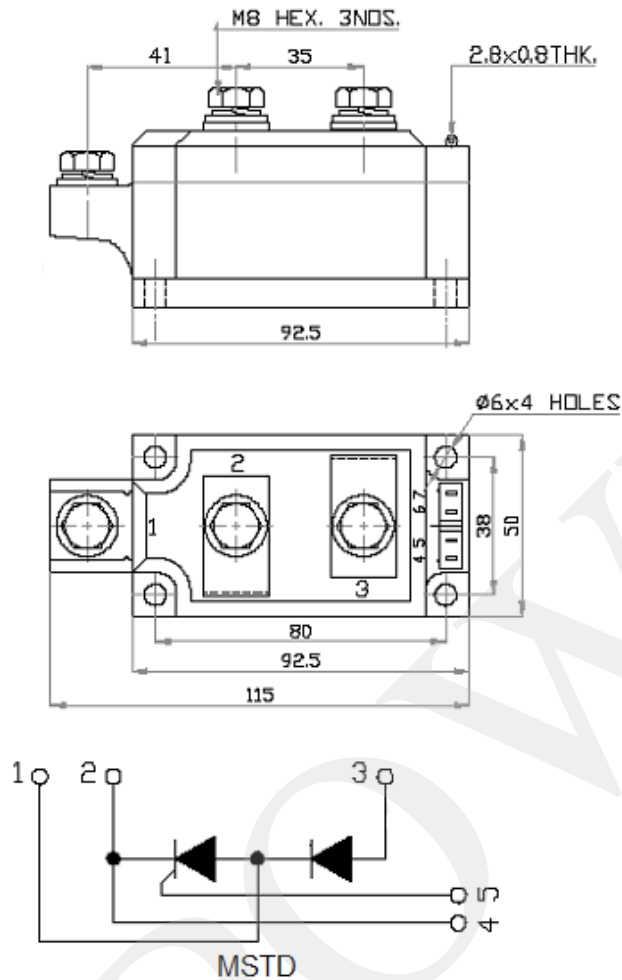


GATE TRIGGER CHARACTERISTICS



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## Outline



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