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Power SEmiconductors Italian COrporation

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# WATER COOLED A.C. SWITCH

# 2-2WI-600

Repetitive voltage up to **1600 V**  
Maximum continuous RMS current **730 A**  
Surge current **5.6 kA**

## FINAL SPECIFICATION

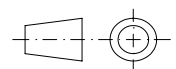
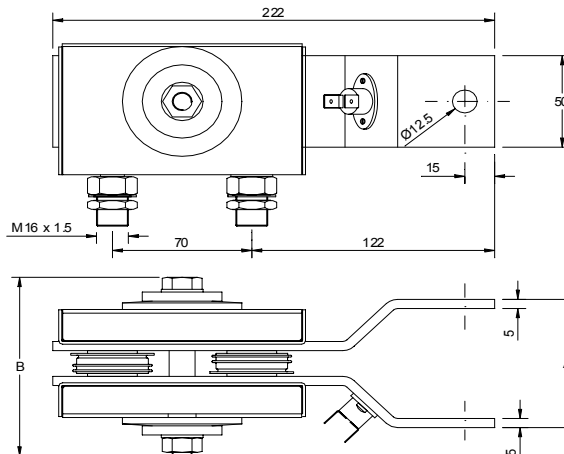
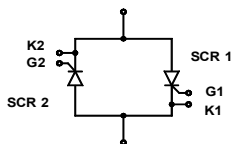
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| Symbol  | Characteristic                                   | Conditions  | T <sub>J</sub> [°C] | Value    | Unit             |
|---|--|---|---------------------|----------|------------------|
| <b>BLOCKING</b>                                     |  |   |                     |          |                  |
| V <sub>DRM</sub> /V <sub>RRM</sub>                  | Repetitive peak voltage                          |   | 125                 | 1600     | V                |
| V <sub>DSM</sub> /V <sub>RSM</sub>                  | Non-repetitive peak voltage                      |   | 125                 | 1700     | V                |
| I <sub>DRM</sub> /I <sub>RRM</sub>                  | Repetitive peak current                          |   | 125                 | 30       | mA               |
| <b>CONDUCTING</b>                                   |  |   |                     |          |                  |
| I <sub>T(RMS)</sub>                                 | Maximum continuous RMS current                   | 50 Hz, Q = 4 l/min, water temperature = 40°C            |                     | 730      | A                |
| I <sub>TSM</sub>                                    | Surge on-state current                           | Max peak one cycle sine wave, 10 ms.                    | 125                 | 5.6      | kA               |
| I <sup>2</sup> t                                    | I <sup>2</sup> t                                 | Without reverse voltage reapplied                       |                     | 157 x1E3 | A <sup>2</sup> s |
| V <sub>TM</sub>                                     | Max peak on-state voltage                        | ITM = 1032 A  | 125                 | 1.70     | V                |
| V <sub>T(TO)</sub>                                  | Threshold voltage                                |   | 125                 | 1.00     | V                |
| r <sub>T</sub>                                      | On-state slope resistance                        |   | 125                 | 0.680    | mΩ               |
| <b>SWITCHING</b>                                    |  |   |                     |          |                  |
| di/dt   | Critical rate of rise of on-state current, min.  | From 75% V <sub>DRM</sub> up to 1650 A, gate 10 V - 5 Ω | 125                 | 200      | A/μs             |
| dv/dt   | Critical rate of rise of off-state voltage, min. | Linear ramp up to 70% of V <sub>DRM</sub>               | 125                 | 500      | V/μs             |
| <b>GATE</b>   |  |   |                     |          |                  |
| V <sub>GT</sub>                                     | Gate trigger voltage                             | VD=5 V  | 25                  | 3.5      | V                |
| I <sub>GT</sub>                                     | Gate trigger current                             | VD=5 V  | 25                  | 200      | mA               |
| P <sub>GM</sub>                                     | Max peak gate power                              | Pulse width 100 μs                                      | 25                  | 75       | W                |
| <b>MECHANICAL</b>                                   |  |   |                     |          |                  |
| R <sub>th(j-w)</sub>                                | Thermal impedance, DC                            | Junction to water (double side cooled)                  |                     | 0.25     | °C/W             |
| V <sub>ins(RMS)</sub>                               | Insulation voltage rms                           | 1 min   | 25                  | 2.5      | kV               |
| Press   | Max water pressure                               |   |                     | 10       | bar              |
| T <sub>J max</sub>                                  | Max operating junction temperature               |   |                     | 125      | °C               |
| Weight  |  |   |                     | 5050     | g                |
| Thermal switch open 63°C, closed 50°C. 10 A - 250 V |  |   |                     |          |                  |

OUTLINE **W0**

DEVICES TYPE: AT505

|   |    |
|---|----|
| A | 98 |
| B | 70 |



ORDERING INFORMATION : 2-2WI-600 S 16

standard specification

VDRM&VRRM/100