

## Thyristor-Diode Module, 305 Amps

**Features**

- Improved glass passivation for high reliability
- Exceptional stability at high temperatures
- High di/dt and dv/dt capabilities
- Low thermal resistance



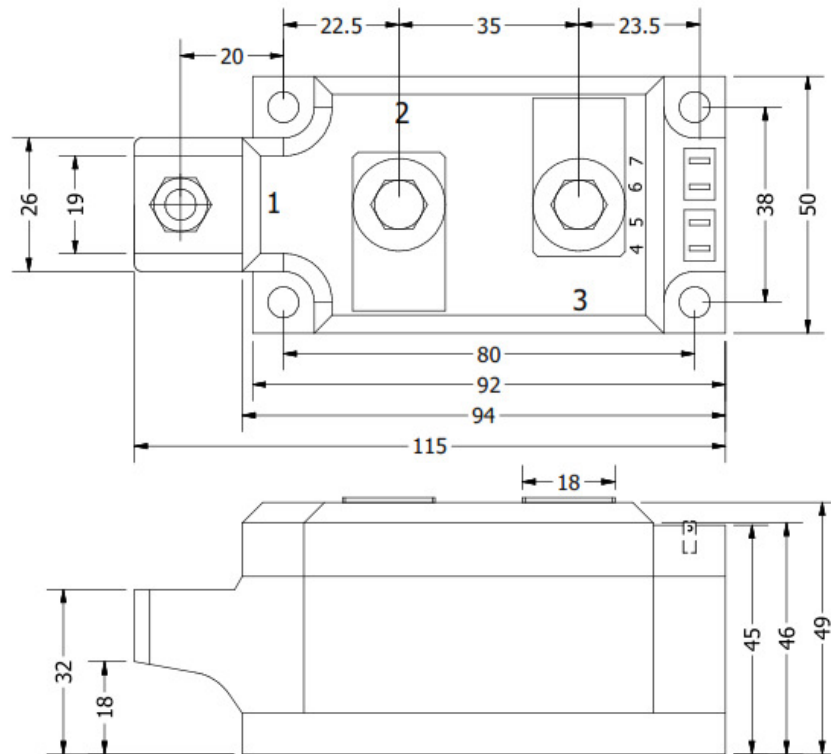
| Voltage Ratings ( $T_A = 25^\circ\text{C}$ , unless otherwise noted) |              |  |  |  |  |
|--|--------------|--|--|--|--|
| Type number  | Voltage Code | $V_{RRM}$ , Maximum repetitive peak reverse voltage<br>(V) | $V_{RSM}$ , Maximum non-repetitive peak reverse voltage<br>(V) | $V_{DRM}$ , Maximum repetitive peak off-state voltage<br>(V) | $I_{RRM}$ , Maximum reverse leakage current @ $T_{JMAX}$<br>(mA) |
| NTD330   | 60           | 600  | 700  | 600  | max. 80  |
|  | 80           | 800  | 900  | 800  |  |
|  | 100          | 1000   | 1100   | 1000   |  |
|  | 120          | 1200   | 1300   | 1200   |  |
|  | 140          | 1400   | 1500   | 1400   |  |
|  | 160          | 1600   | 1700   | 1600   |  |
|  | 180          | 1800   | 1900   | 1800   |  |

| Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |              |           |                        |
|---|--------------|-----------|------------------------|
| Parameter   | Symbol       | Values    | Units                  |
| Maximum average forward current @ $T_J = 85^\circ\text{C}$                    | $I_{T(AV)}$  | 305       | A                      |
| Maximum average RMS forward current   | $I_{T(RMS)}$ | 480       | A                      |
| Maximum non-repetitive surge current  | $I_{TSM}$    | 9500      | A                      |
| Maximum $I^2t$ for fusing   | $I^2t$       | 451250    | $\text{A}^2\text{s}$   |
| Forward voltage drop  | $V_{TM}$     | max. 1.4  | V                      |
| Critical rate of rise of on-state current                                     | di/dt        | max. 250  | $\text{A}/\mu\text{s}$ |
| Critical rate of rise of off-state voltage                                    | dv/dt        | max. 1000 | $\text{V}/\mu\text{s}$ |
| Gate current required to trigger  | $I_{GT}$     | min. 200  | mA                     |
| Gate voltage required to trigger  | $V_{GT}$     | min. 3    | V                      |
| Maximum holding current   | $I_H$        | 150       | mA                     |
| Maximum latching current  | $I_L$        | 300       | mA                     |
| Isolation voltage   | $V_{ISO}$    | 3000      | V                      |

| Thermal & Mechanical Specifications ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |              |              |                           |
|--|--------------|--------------|---------------------------|
| Parameter  | Symbol       | Values       | Units                     |
| Operating junction temperature range   | $T_J$        | -40 to +130  | $^\circ\text{C}$          |
| Storage temperature  | $T_{stg}$    | -40 to +130  | $^\circ\text{C}$          |
| Thermal resistance, junction to case   | $R_{th(jc)}$ | 0.11         | $^\circ\text{C}/\text{W}$ |
| Mounting torque  | F            | to heatsink  | $5 \pm 15\%$              |
|  |              | to terminals | $8 \pm 15\%$              |
| Weight   | W            | 620          | g                         |

## Package Outline

(All dimensions in mm)



## Circuit Configuration

| Circuit Description                 | Configuration Code | Circuit Drawing |
|-------------------------------------|--------------------|-----------------|
| Series Connection (doubler circuit) | N                  |                 |
| Common Anode                        | A                  |                 |



## Ordering Table

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| <i>NTD</i> | <i>330</i> | <i>N</i> | <i>160</i> |
|------------|------------|----------|------------|
| 1          | 2          | 3        | 4          |

1 – Power Module

- > DD = Diode-Diode
- > TD = Thyristor-Diode
- > TT = Thyristor-Thyristor

2 – Current Rating =  $I_{T(AV)}$

3 – Circuit Configuration (see Table)

4 – Voltage Code (see Voltage Ratings table)