# Thyristor-Diode Module, 50 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°C, unless otherwise noted)

| Type number | Voltage Code | $V_{RRM}$, Maximum repetitive peak reverse voltage (V) | $V_{RSM}$, Maximum non-repetitive peak reverse voltage (V) | $V_{DRM}$, Maximum repetitive peak off-state voltage (V) | $I_{RRM}$, Maximum reverse leakage current @ $T_{JMAX}$ (mA) |
|---|---|---|---|---|---|
| NTD57 | 60 | 600 | 700 | 600 | max. 10 |
| | 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°C unless otherwise noted)

| Parameter | Symbol | Values | Units |
|---|---|---|---|
| Maximum average forward current @ $T_J$ = 85°C | $I_{T(AV)}$ | 50 | A |
| Maximum average RMS forward current | $I_{T(RMS)}$ | 79 | A |
| Maximum non-repetitive surge current | $I_{TSM}$ | 1500 | A |
| Maximum $I^2t$ for fusing | $I^2t$ | 11250 | $A^2s$ |
| Forward voltage drop | $V_{TM}$ | max. 1.6 | V |
| Critical rate of rise of on-state current | di/dt | max. 150 | A/µs |
| Critical rate of rise of off-state voltage | dv/dt | max. 1000 | V/µs |
| Gate current required to trigger | $I_{GT}$ | min. 150 | 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 |

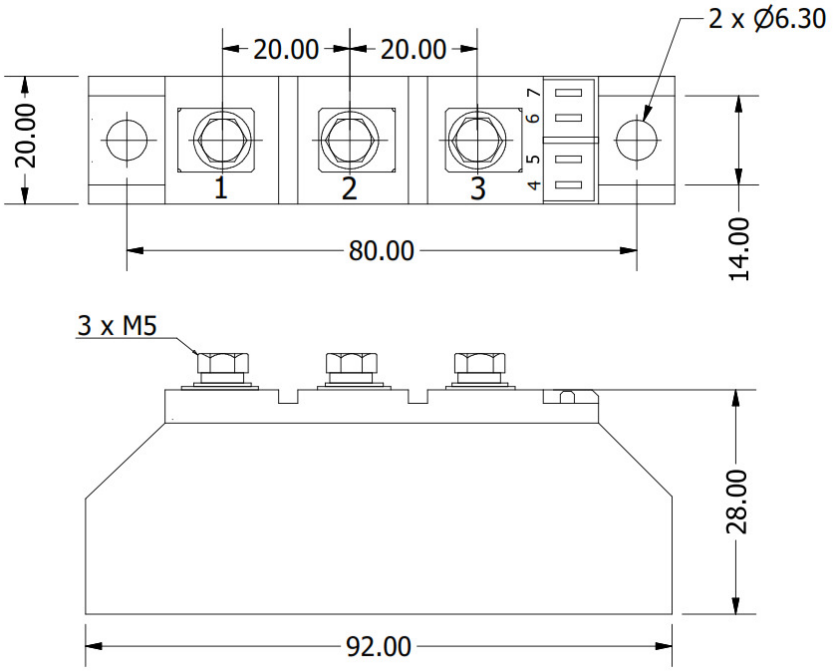
**Thermal & Mechanical Specifications** ($T_A$ = 25°C unless otherwise noted)

| Parameter | | Symbol | Values | Units |
|---|---|---|---|---|
| Operating junction temperature range | | $T_J$ | -40 to +125 | °C |
| Storage temperature | | $T_{stg}$ | -40 to +125 | °C |
| Thermal resistance, junction to case | | $R_{th(JC)}$ | 0.57 | °C/W |
| Mounting torque | to heatsink | F | 5 ± 15% | Nm |
| | to terminals | | 3 ± 15% | |
| Weight | | W | 100 | g |

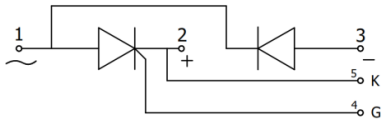
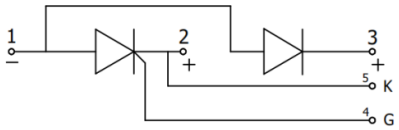

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## Package Outline

***(All dimensions in mm)***




## Circuit Configuration

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


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## Ordering Table

| *NTD* | *57* | *N* | *160* |
|---|---|---|---|
| **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)


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