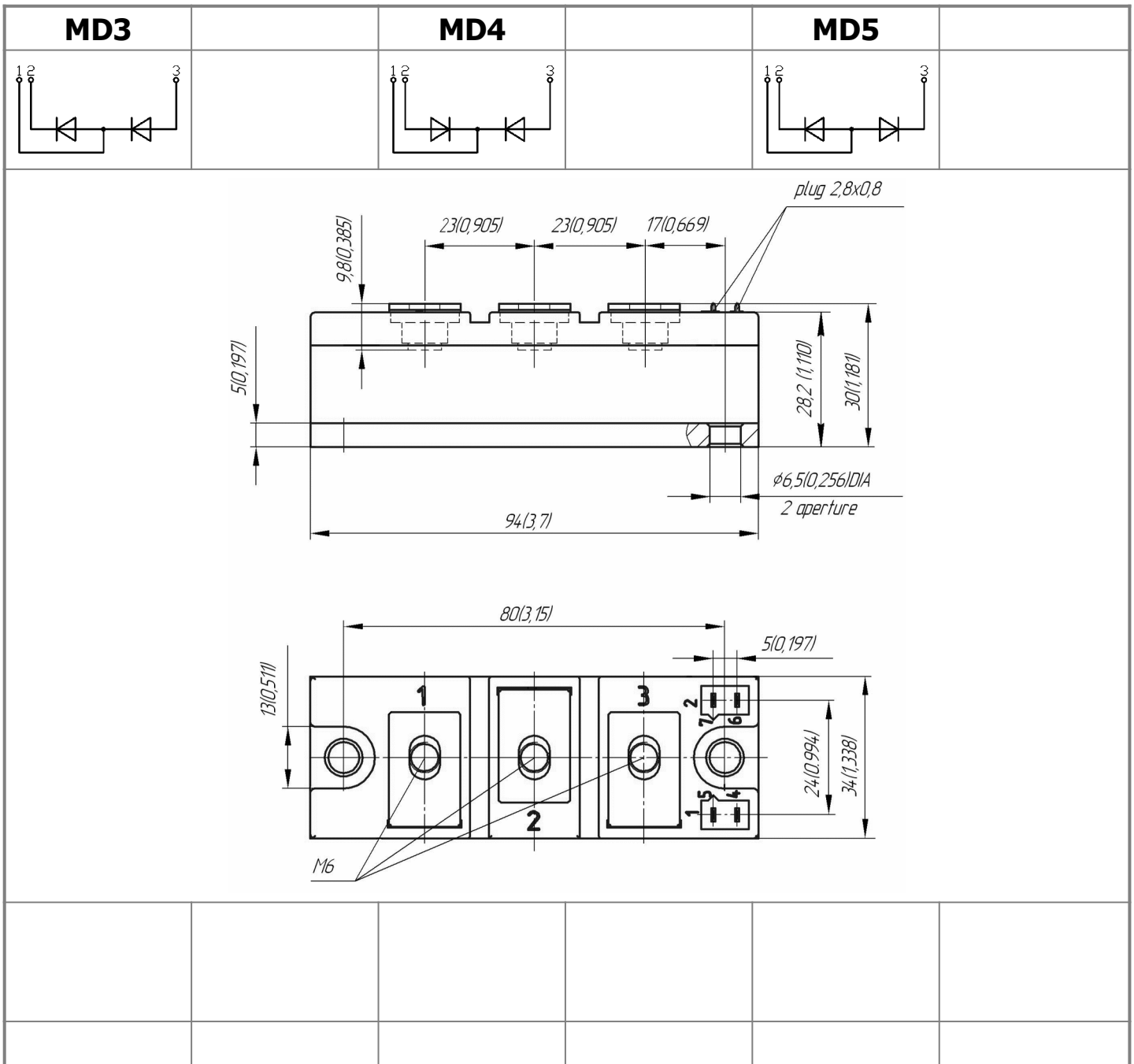




**Double Diode Module
For Phase Control
MDx-250-18-F**

Electrically isolated base plate
Industrial standard package
Simplified mechanical design, rapid assembly
Pressure contact

| | | | | | | | | |
|---------------------------------|------------|------|------|-----------|---------------|------|------|------|
| Average forward current | | | | I_{FAV} | 250 A | | | |
| Repetitive peak reverse voltage | | | | V_{RRM} | 1000 ÷ 1800 V | | | |
| V_{RRM}, V | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1800 |
| Voltage code | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 18 |
| $T_j, ^\circ C$ | - 40 ÷ 150 | | | | | | | |




All dimensions in millimeters (inches)

MAXIMUM ALLOWABLE RATINGS

| Symbols and parameters | | Units | Values | Test conditions | |
|------------------------|--------------------------------------|-------------------|---------------------|---|---|
| ON-STATE | | | | | |
| I_{FAV} | Average forward current | A | 250 | $T_c = 99\text{ }^\circ\text{C}$; | |
| I_{FRMS} | RMS forward current | A | 393 | 180° half-sine wave; 50 Hz | |
| I_{FSM} | Surge forward current | kA | 8.1 9.5 | $T_j = T_{j\text{ max}}$ $T_j = 25\text{ }^\circ\text{C}$ | 180° half-sine wave; $t_p = 10\text{ ms}$; single pulse; $V_R = 0\text{ V}$; |
| | | | 8.5 10.0 | $T_j = T_{j\text{ max}}$ $T_j = 25\text{ }^\circ\text{C}$ | 180° half-sine wave; $t_p = 8.3\text{ ms}$; single pulse; $V_R = 0\text{ V}$; |
| I^2t | Safety factor | $A^2s \cdot 10^3$ | 320 450 | $T_j = T_{j\text{ max}}$ $T_j = 25\text{ }^\circ\text{C}$ | 180° half-sine wave; $t_p = 10\text{ ms}$; single pulse; $V_R = 0\text{ V}$; |
| | | | 290 410 | $T_j = T_{j\text{ max}}$ $T_j = 25\text{ }^\circ\text{C}$ | 180° half-sine wave; $t_p = 8.3\text{ ms}$; single pulse; $V_R = 0\text{ V}$; |
| BLOCKING | | | | | |
| V_{RRM} | Repetitive peak reverse voltages | V | 1000÷1800 | $T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave; 50 Hz; | |
| V_{RSM} | Non-repetitive peak reverse voltages | V | 1100÷1900 | $T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave; single pulse; | |
| V_R | Reverse continuous voltages | V | $0.6 \cdot V_{RRM}$ | $T_j = T_{j\text{ max}}$; | |
| THERMAL | | | | | |
| T_{stg} | Storage temperature | $^\circ\text{C}$ | - 40 ÷ 50 | | |
| T_j | Operating junction temperature | $^\circ\text{C}$ | - 40 ÷ 150 | | |
| $T_{c\text{ op}}$ | Operating temperature | $^\circ\text{C}$ | - 40 ÷ 125 | | |
| MECHANICAL | | | | | |
| a | Acceleration under vibration | m/s^2 | 50 | | |

CHARACTERISTICS

| Symbols and parameters | | Units | Values | Conditions | |
|------------------------|---|--------------------|--------|--|---------------------|
| ON-STATE | | | | | |
| V_{FM} | Peak forward voltage, max | V | 1.30 | $T_j = 25\text{ }^\circ\text{C}$; $I_{FM} = 500\text{ A}$ | |
| $V_{F(TO)}$ | Forward threshold voltage, max | V | 0.75 | $T_j = T_{j\text{ max}}$; | |
| r_T | Forward slope resistance, max | $\text{m}\Omega$ | 0.640 | $0.5 \pi I_{FAV} < I_T < 1.5 \pi I_{FAV}$ | |
| BLOCKING | | | | | |
| I_{RRM} | Repetitive peak reverse current, max | mA | 20 | $T_j = T_{j\text{ max}}$; $V_R = V_{RRM}$ | |
| THERMAL | | | | | |
| R_{thjc} | Thermal resistance, junction to case | | | | |
| | per module | $^\circ\text{C/W}$ | 0.0900 | 180° half-sine wave, 50 Hz | |
| | per arm | $^\circ\text{C/W}$ | 0.1800 | | |
| | per module | $^\circ\text{C/W}$ | 0.0850 | DC | |
| per arm | $^\circ\text{C/W}$ | 0.1700 | | | |
| R_{thch} | Thermal resistance, case to heatsink | | | | |
| | per module | $^\circ\text{C/W}$ | 0.0300 | | |
| | per arm | $^\circ\text{C/W}$ | 0.0600 | | |
| INSULATION | | | | | |
| V_{ISOL} | Insulation test voltage | kV | 3.00 | Sine wave, 50 Hz; RMS | $t = 60\text{ sec}$ |
| | | | 3.60 | | $t = 1\text{ sec}$ |
| MECHANICAL | | | | | |
| M_1 | Mounting torque (M6) ¹⁾ | Nm | 6.00 | Tolerance $\pm 15\%$ | |
| M_2 | Terminal connection torque (M6) ¹⁾ | Nm | 6.00 | Tolerance $\pm 15\%$ | |
| w | Weight, max | g | 350 | | |

| PART NUMBERING GUIDE | | | | | | NOTES | | | | |
|--|---|-------------------------------|-----|---|----|-------|---|---|---|---|
| MD | 3 | - | 250 | - | 18 | - | F | - | N | ¹⁾ The screws must be lubricated |
| 1 | 2 | | 3 | | 4 | | 5 | | 6 | |
| 1. MD - Rectifier Diode 2. Circuit Schematic 3. Average Forward Current, A 4. Voltage Code 5. Package Type (M.F) 6. Ambient Conditions: N – Normal | | | | | | | | | | |
|  | | UL certified file-No. E255404 | | | | | | | | |

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