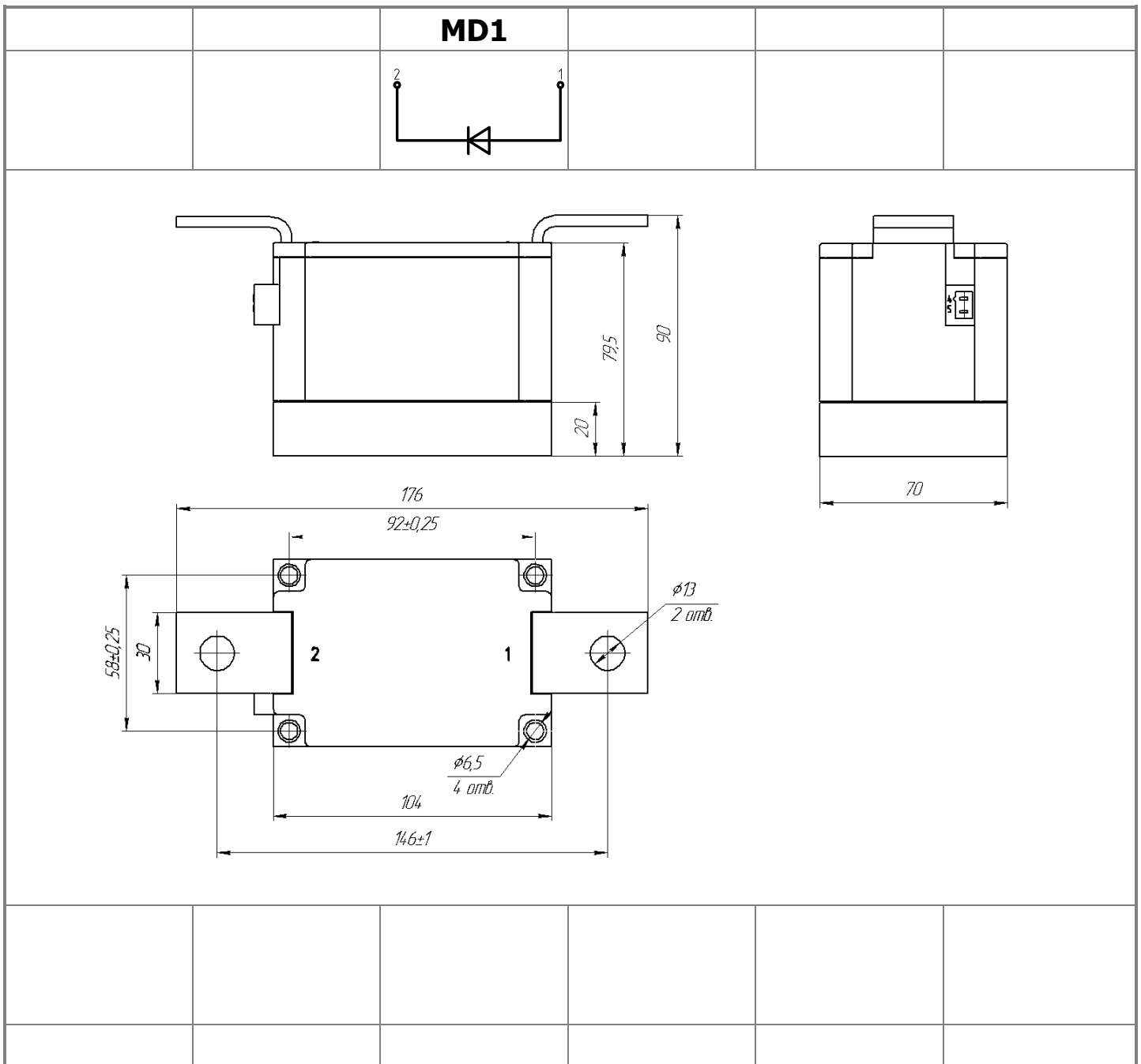




**Single Diode Module
For Phase Control
MD1-1280-22-E**

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

| | | | |
|---------------------------------|------------|-----------|---------------|
| Average forward current | | I_{FAV} | 1280 A |
| Repetitive peak reverse voltage | | V_{RRM} | 2000 ÷ 2200 V |
| V_{RRM}, V | 2000 | | 2200 |
| Voltage code | 20 | | 22 |
| $T_{ij}, ^\circ C$ | - 40 ÷ 160 | | |




All dimensions in millimeters (inches)

MAXIMUM ALLOWABLE RATINGS

| Symbols and parameters | | Units | Values | Test conditions | |
|------------------------|--------------------------------------|-------------------|----------------------|--|--|
| ON-STATE | | | | | |
| I_{FAV} | Average forward current | A | 1280 | $T_c = 100\text{ °C}$; 180° half-sine wave; 50 Hz | |
| I_{FRMS} | RMS forward current | A | 2010 | | |
| I_{FSM} | Surge forward current | kA | 40.0 46.0 | $T_j = T_{j\max}$ $T_j = 25\text{ °C}$ | 180° half-sine wave; 50 Hz ($t_p = 10\text{ ms}$); single pulse; $V_R = 0\text{ V}$; |
| | | | 42.0 48.0 | $T_j = T_{j\max}$ $T_j = 25\text{ °C}$ | 180° half-sine wave; 60 Hz ($t_p = 8.3\text{ ms}$); single pulse; $V_R = 0\text{ V}$; |
| I^2t | Safety factor | $A^2s \cdot 10^3$ | 8000 10580 | $T_j = T_{j\max}$ $T_j = 25\text{ °C}$ | 180° half-sine wave; 50 Hz ($t_p = 10\text{ ms}$); single pulse; $V_R = 0\text{ V}$; |
| | | | 7320 9560 | $T_j = T_{j\max}$ $T_j = 25\text{ °C}$ | 180° half-sine wave; 60 Hz ($t_p = 8.3\text{ ms}$); single pulse; $V_R = 0\text{ V}$; |
| BLOCKING | | | | | |
| V_{RRM} | Repetitive peak reverse voltages | V | 2000÷2200 | $T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz; | |
| V_{RSM} | Non-repetitive peak reverse voltages | V | 2100÷2300 | $T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz; single pulse; | |
| V_R | Reverse continuous voltages | V | $0.75 \cdot V_{RRM}$ | $T_j = T_{j\max}$; | |
| THERMAL | | | | | |
| T_{stg} | Storage temperature | °C | - 40 ÷ 125 | | |
| T_j | Operating junction temperature | °C | - 40 ÷ 160 | | |
| 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 | 1.25 | $T_j = 25\text{ °C}$; $I_{FM} = 3140\text{ A}$ | |
| $V_{F(TO)}$ | Forward threshold voltage, max | V | 0.80 | $T_j = T_{j\max}$; $0.5 \pi I_{FAV} < I_T < 1.5 \pi I_{FAV}$ | |
| r_T | Forward slope resistance, max | $m\Omega$ | 0.100 | | |
| BLOCKING | | | | | |
| I_{RRM} | Repetitive peak reverse current, max | mA | 70 | $T_j = T_{j\max}$; $V_R = V_{RRM}$ | |
| THERMAL | | | | | |
| R_{thjc} | Thermal resistance, junction to case | | | 180° half-sine wave, 50 Hz | |
| | per module | °C/W | 0.0420 | | |
| R_{thch} | Thermal resistance, case to heatsink | | | | |
| | per module | °C/W | 0.0100 | | |
| INSULATION | | | | | |
| V_{ISOL} | Insulation test voltage | kV | 3.00 | Sine wave, 50 Hz; | t=1 min |
| | | | 3.60 | RMS | t=1 sec |
| MECHANICAL | | | | | |
| M_1 | Mounting torque (M6) ¹⁾ | Nm | 6.00 | Tolerance ± 15% | |
| M_2 | Terminal connection torque (M12) ¹⁾ | Nm | 18.00 | Tolerance ± 15% | |
| w | Weight | g | 2550 | | |

| PART NUMBERING GUIDE | | | | | | NOTES | | | | |
|--|---|-------------------------------|------|---|----|-------|---|---|---|----------------------------------|
| MD | 1 | - | 1280 | - | 22 | - | E | - | 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.E) 6. Ambient Conditions: N – Normal | | | | | | | | | | |
|  | | UL certified file-No. E255404 | | | | | | | | |

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