

(Advance data)

## Dual Diode Modules MD#630-30N2-36N2

### Absolute Maximum Ratings

| $V_{RRM}$<br>$V_{DRM}$<br>[V] |          |          |          |
|-------------------------------|----------|----------|----------|
|                               | MDD      | MDA      | MDK      |
| 3000                          | 630-30N2 | 630-30N2 | 630-30N2 |
| 3600                          | 630-36N2 | 630-36N2 | 630-36N2 |

|           | VOLTAGE RATINGS                                   | MAXIMUM LIMITS | UNITS |
|-----------|---|----------------|-------|
| $V_{RRM}$ | Repetitive peak reverse voltage <sup>1)</sup>     | 3000 - 3600    | V     |
| $V_{RSM}$ | Non-repetitive peak reverse voltage <sup>1)</sup> | 3100- 3700     | V     |

|                    | OTHER RATINGS  | MAXIMUM LIMITS    | UNITS                |
|--------------------|--|-------------------|----------------------|
| $I_{F(AV)M}$       | Maximum average on-state current, $T_C = 85^\circ\text{C}$ <sup>2)</sup>         | 632               | A                    |
| $I_{F(AV)M}$       | Maximum average on-state current. $T_C = 100^\circ\text{C}$ <sup>2)</sup>        | 528               | A                    |
| $I_{F(RMS)M}$      | Nominal RMS on-state current, $T_C = 55^\circ\text{C}$ <sup>2)</sup>             | 1273              | A                    |
| $I_{F(d.c.)}$      | D.C. on-state current, $T_C = 55^\circ\text{C}$                                  | 1087              | A                    |
| $I_{FSM}$          | Peak non-repetitive surge $t_p = 10$ ms, $V_{RM} = 60\%V_{RRM}$ <sup>3)</sup>    | 11.8              | kA                   |
| $I_{FSM2}$         | Peak non-repetitive surge $t_p = 10$ ms, $V_{RM} \leq 10\text{V}$ <sup>3)</sup>  | 13                | kA                   |
| $I^2t$             | $I^2t$ capacity for fusing $t_p = 10$ ms, $V_{RM} = 60\%V_{RRM}$ <sup>3)</sup>   | $695 \times 10^3$ | $\text{A}^2\text{s}$ |
| $I^2t$             | $I^2t$ capacity for fusing $t_p = 10$ ms, $V_{RM} \leq 10\text{V}$ <sup>3)</sup> | $845 \times 10^3$ | $\text{A}^2\text{s}$ |
| $V_{ISOL}$         | Isolation Voltage, 1min <sup>4)</sup>  | 3000              | V                    |
|                    | Isolation Voltage, 1sec <sup>4)</sup>  | 3600              | V                    |
| $T_{vj\text{ op}}$ | Operating temperature range  | -40 to +150       | $^\circ\text{C}$     |
| $T_{\text{stg}}$   | Storage temperature range  | -40 to +150       | $^\circ\text{C}$     |

**Notes:**

- 1) De-rating factor of 0.13% per  $^\circ\text{C}$  is applicable for  $T_{vj}$  below  $25^\circ\text{C}$ .
- 2) Single phase; 50 Hz,  $180^\circ$  half-sinewave.
- 3) Half-sinewave,  $150^\circ\text{C}$   $T_{vj}$  initial.
- 4) AC RMS voltage, 50 Hz

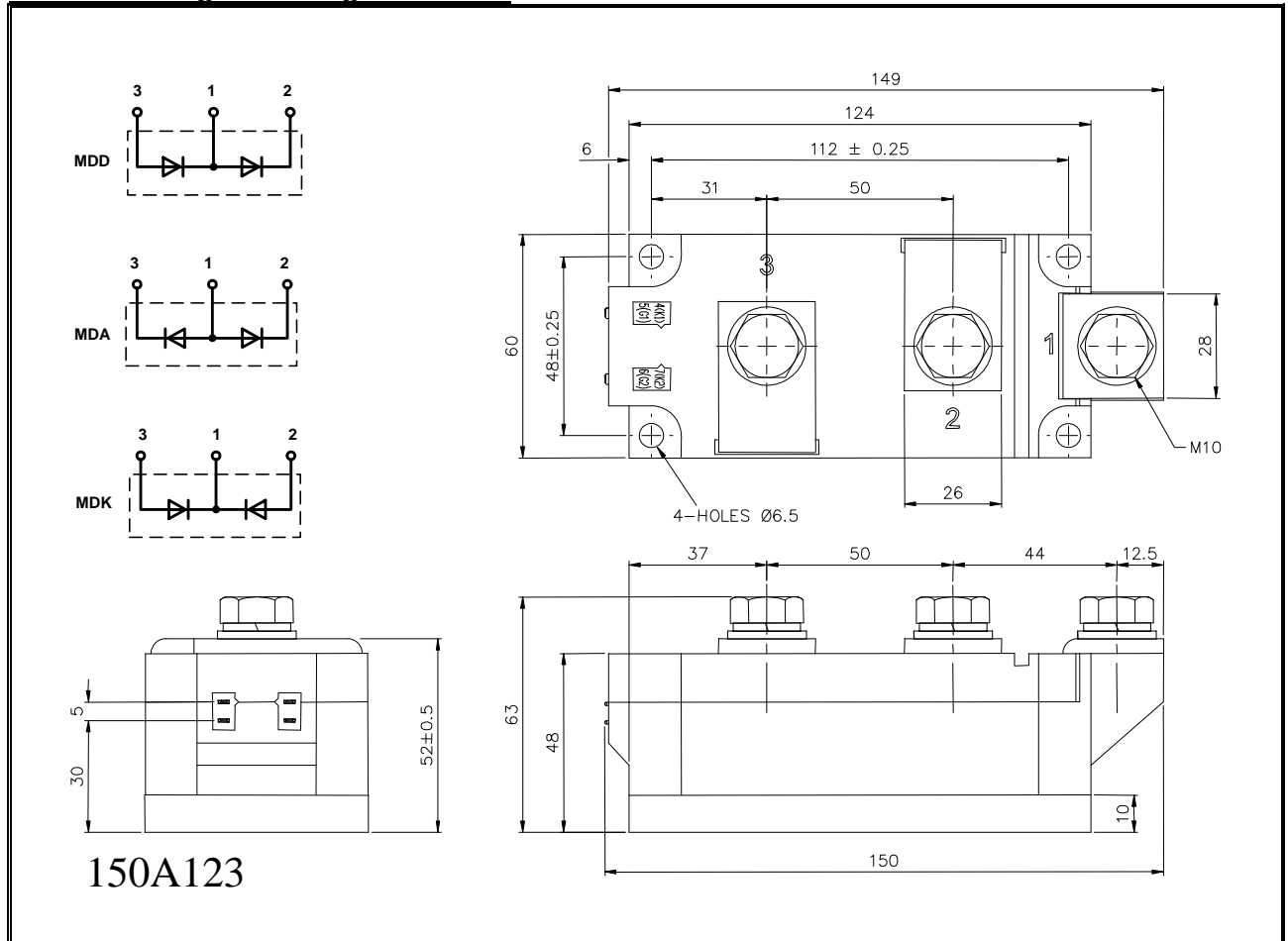
**Characteristics**

|            | PARAMETER                                   | MIN. | TYP. | MAX.  | TEST CONDITIONS <sup>1)</sup>                                     | UNITS      |
|------------|---|------|------|-------|---|------------|
| $V_{FM}$   | Maximum peak on-state voltage               | -    | -    | 1.4   | $I_{FM} = 1200A$  | V          |
| $V_{T0}$   | Threshold voltage                           | -    | -    | 0.80  |   | V          |
| $r_T$      | Slope resistance                            | -    | -    | 0.5   |   | m $\Omega$ |
| $I_{RRM}$  | Peak reverse current                        | -    | -    | 50    | Rated $V_{RRM}$   | mA         |
| $Q_{rr}$   | Recovered Charge                            | -    | tba  | -     |   | $\mu C$    |
| $Q_{ra}$   | Recovered Charge, 50% chord                 | -    | tba  | -     |   | $\mu C$    |
| $I_{rm}$   | Reverse recovery current                    | -    | tba  | -     | $I_{TM} = 1000 A, t_p = 1ms, di/dt = 10A/\mu s,$<br>$V_R = 100 V$ | A          |
| $t_{rr}$   | Reverse recovery time, 50% chord            | -    | tba  | -     |   | $\mu s$    |
| $R_{thJC}$ | Thermal resistance, junction to case        | -    | -    | 0.062 | Single Diode  | K/W        |
|            |   | -    | -    | 0.031 | Whole Module  | K/W        |
| $R_{thCH}$ | Thermal resistance, case to heatsink        | -    | -    | 0.02  | Single Diode  | K/W        |
|            |   | -    | -    | 0.01  | Whole Module  | K/W        |
| $F_1$      | Mounting force (to heatsink) <sup>2)</sup>  | 5.1  | -    | 6.9   |   | Nm         |
| $F_2$      | Mounting force (to terminals) <sup>2)</sup> | 10.8 | -    | 13.2  |   | Nm         |
| $W_t$      | Weight                                      | -    | 1.5  | -     |   | kg         |

**Notes:**

- 1) Unless otherwise indicated  $T_{vj} = 150^\circ C$ .
- 2) Screws must be lubricated.

Outline Drawing & Ordering Information



ORDERING INFORMATION

(Please quote 10 digit code as below)

|                 |                               |                 |  |                |                    |
|-----------------|-------------------------------|-----------------|--|----------------|--------------------|
| <b>M</b>        | <b>D#</b>                     | <b>630</b>      | <b>◆◆</b>                              | <b>N</b>       | <b>2</b>           |
| Fixed Type Code | Configuration code DD, DA, DK | Fixed Type Code | Voltage code $V_{RRM}/100$<br>30 or 36 | Standard Diode | Fixed Version Code |

Typical order code: MDA630-36N2- MDA configuration, 3600V  $V_{RRM}$

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