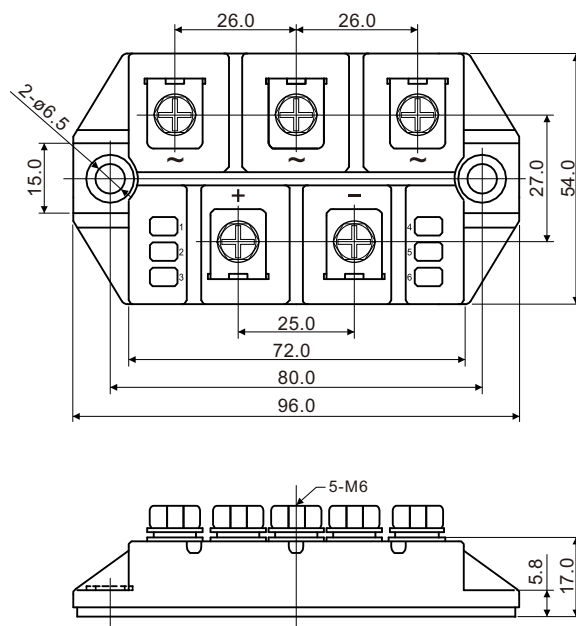


## Glass Passivated Three-Phase Bridge Rectifier, 150A

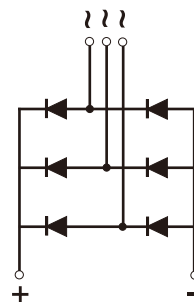
### MTP15008I Thru MTP15018I



All dimensions in millimeters

#### FEATURES

- UL recognition file number E320098
- Typical IR less than 2.0  $\mu$ A
- High surge current capability
- Low thermal resistance
- Compliant to RoHS
- Isolation voltage up to 2500V
- Glass passivated junctions



#### TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for big power supply, field supply for DC motor, industrial automation applications.

#### ADVANTAGE

- International standard package  
Epoxy meets UL 94 V-O flammability rating
- Small volume, light weight
- Weight: 220g (7.8 ozs)

#### PRIMARY CHARACTERISTICS

|                      |               |
|----------------------|---------------|
| $I_{F(AV)}$          | 150A          |
| $V_{RRM}$            | 800V to 1800V |
| $I_{FSM}$            | 1800A         |
| $I_R$                | 20 $\mu$ A    |
| $V_F$                | 1.40V         |
| $T_{J \text{ max.}}$ | 150°C         |

## Nell High Power Products

| MAJOR RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |             |            |      |      |      |      |                       |
|--------------------------------------------------------------------------------------|-------------|------------|------|------|------|------|-----------------------|
| PARAMETER                                                                            | SYMBOL      | MTP150..I  |      |      |      |      | UNIT                  |
|                                                                                      |             | 08         | 10   | 12   | 16   | 18   |                       |
| Maximum repetitive peak reverse voltage                                              | $V_{RRM}$   | 800        | 1000 | 1200 | 1600 | 1800 | V                     |
| Peak reverse non-repetitive voltage                                                  | $V_{RSM}$   | 900        | 1100 | 1300 | 1700 | 1900 | V                     |
| Maximum DC blocking voltage                                                          | $V_{DC}$    | 800        | 1000 | 1200 | 1600 | 1800 | V                     |
| Maximum average forward rectified output current                                     | $I_{F(AV)}$ | 150        |      |      |      |      | A                     |
| Peak forward surge current single sine-wave superimposed on rated load               | $I_{FSM}$   | 1800       |      |      |      |      | A                     |
| Rating (non-repetitive, for t greater than 1 ms and less than 10 ms) for fusing      | $I^2t$      | 16.2       |      |      |      |      | $\text{KA}^2\text{s}$ |
| RMS isolation voltage from case to leads                                             | $V_{ISO}$   | 2500       |      |      |      |      | V                     |
| Operating junction storage temperature range                                         | $T_J$       | -40 to 150 |      |      |      |      | $^\circ\text{C}$      |
| Storage temperature range                                                            | $T_{STG}$   | -40 to 125 |      |      |      |      | $^\circ\text{C}$      |

| ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |                           |        |           |    |    |    |    |
|-------------------------------------------------------------------------------|---------------------------|--------|-----------|----|----|----|----|
| PARAMETER                                                                     | TEST CONDITIONS           | SYMBOL | MTP150..I |    |    |    |    |
|                                                                               |                           |        | 08        | 10 | 12 | 16 | 18 |
| Maximum instantaneous forward drop per diode                                  | $I_F = 150\text{A}$       | $V_F$  | 1.40      |    |    |    |    |
| Maximum reverse DC current at rated DC blocking voltage per diode             | $T_A = 25^\circ\text{C}$  | $I_R$  | 20        |    |    |    |    |
|                                                                               | $T_A = 150^\circ\text{C}$ |        | 6         |    |    |    |    |

| THERMAL AND MECHANICAL ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |                                                                                                                                          |                       |           |    |    |    |    |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------|----|----|----|----|
| PARAMETER                                                                 | TEST CONDITIONS                                                                                                                          | SYMBOL                | MTP150..I |    |    |    |    |
|                                                                           |                                                                                                                                          |                       | 08        | 10 | 12 | 16 | 18 |
| Typical thermal resistance junction to case                               | Single-side heat dissipation, sine half wave                                                                                             | $R_{\theta JC^{(1)}}$ | 0.14      |    |    |    |    |
| Mounting torque $\pm 10\%$ to heatsink M6 to terminal M6                  | A mounting compound is recommended and the torque should be rechecked after a period of 3 hours to allow for the spread of the compound. |                       | 5         |    |    |    |    |
|                                                                           |                                                                                                                                          |                       | 5         |    |    |    |    |
| Approximate weight                                                        |                                                                                                                                          |                       | 220       |    |    |    |    |

Notes

(1) With heatsink, single side heat dissipation, half sine wave.

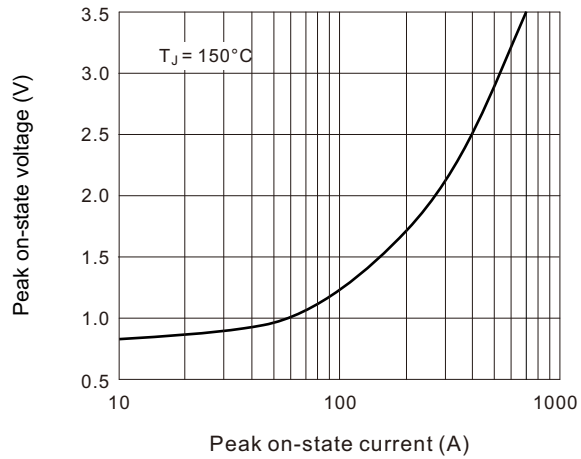
## Ordering Information Tabel

Device code

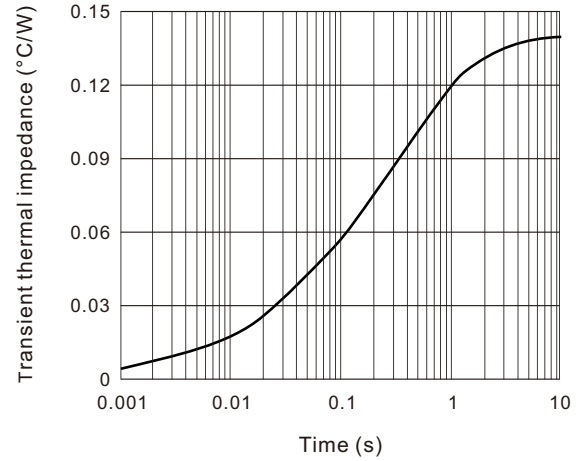
|     |     |    |   |
|-----|-----|----|---|
| MTP | 150 | 16 | I |
| ①   | ②   | ③  | ④ |

- |   |                                         |
|---|-----------------------------------------|
| 1 | - Module type: "MTP" for 3Φ Bridge      |
| 2 | - $I_{F(AV)}$ rating : "150" for 150A   |
| 3 | - Voltage code : code x 100 = $V_{RRM}$ |
| 4 | - Package outline : "I" type package.   |

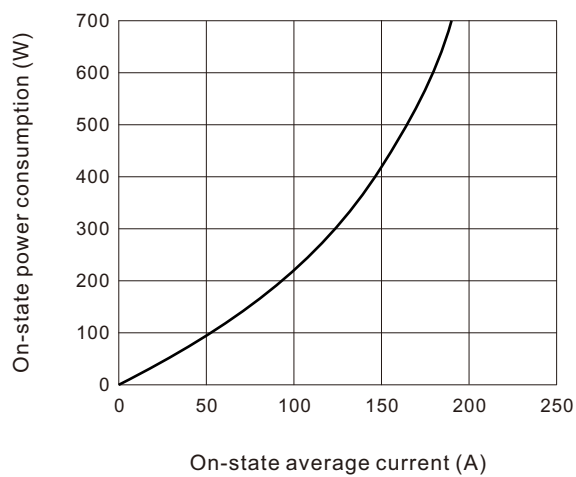
**Fig.1 Forward current vs. Forward voltage**



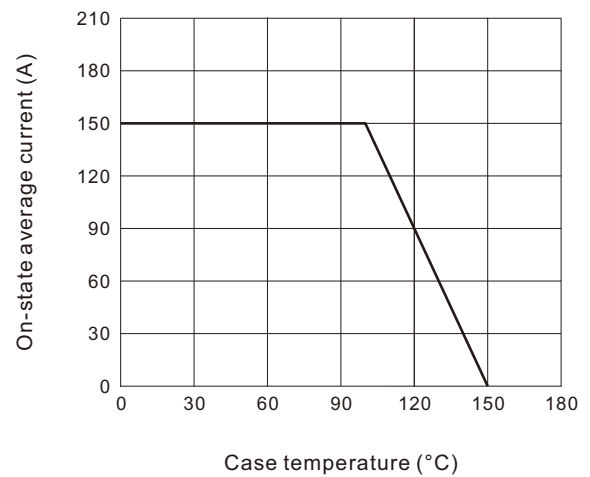
**Fig.2 Thermal Impedance (junction to case)**



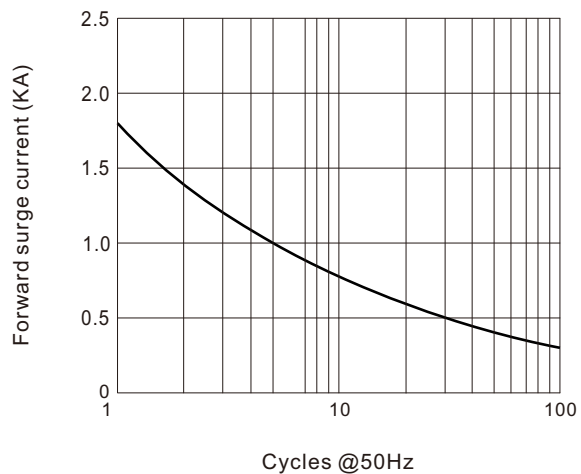
**Fig.3 Power consumption vs. Average current**



**Fig.4 Case temperature vs. on-state average current**



**Fig.5 Forward surge current vs Cycle**



**Fig.6  $I^2t$  characteristic**

