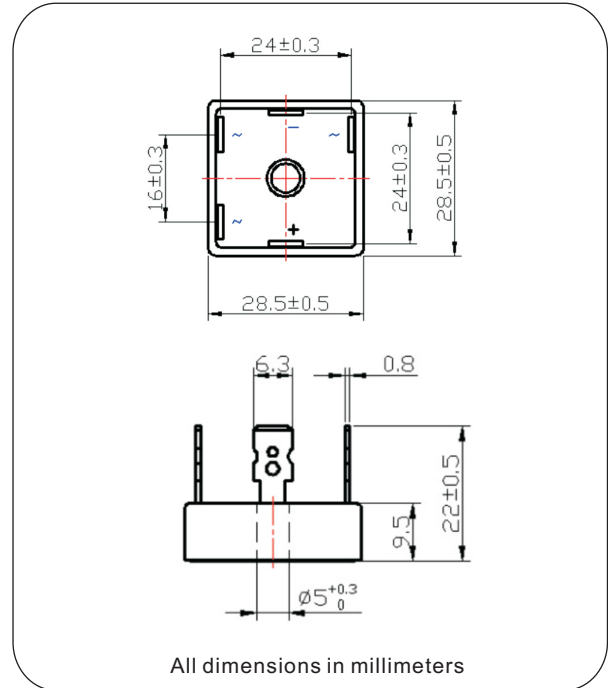


## Glass Passivated Triple-Phase Bridge Rectifier, 35A

### MTP3506A1 Thru MTP3516A1

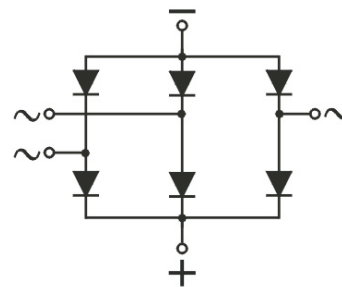


#### FEATURES

- UL recognition file number E320098
- Universal 3-way terminals: snap-on, wire wrap-around, or PCB mounting
- Typical IR less than 1.0  $\mu\text{A}$
- High surge current capability
- Low thermal resistance
- Solder dip 260°C, 40s
- Compliant to RoHS
- Glass passivated chips

#### TYPICAL APPLICATIONS

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



#### MECHANICAL DATA

**Case:** GBPC

Epoxy meets UL 94 V-O flammability rating

**Terminals:** Gold plated on faston lugs or gold plated on wire leads, solderable per J-STD-002 and JESD22-B102.

**Polarity:** As marked

**Mounting Torque:** 20 inches-lbs.max.

**Weight:** 21g (0.74 ozs)

#### PRIMARY CHARACTERISTICS

|                      |                 |
|----------------------|-----------------|
| $I_{F(AV)}$          | 35A             |
| $V_{RRM}$            | 600V to 1600V   |
| $I_{FSM}$            | 450A            |
| $I_R$                | 5 $\mu\text{A}$ |
| $V_F$                | 1.2V            |
| $T_{J \text{ max.}}$ | 150°C           |

| MAJOR RATINGS AND CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |                |            |     |      |      |      |                  |
|--|----------------|------------|-----|------|------|------|------------------|
| PARAMETER  | SYMBOL         | MTP35..A1  |     |      |      |      | UNIT             |
|  |                | 06         | 08  | 10   | 12   | 16   |                  |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$      | 600        | 800 | 1000 | 1200 | 1600 | V                |
| Maximum RMS voltage  | $V_{RMS}$      | 420        | 560 | 700  | 840  | 1120 | V                |
| Maximum DC blocking voltage  | $V_{DC}$       | 600        | 800 | 1000 | 1200 | 1600 | V                |
| Maximum average forward rectified output current (Fig. 1)                            | $I_{F(AV)}$    | 35         |     |      |      |      | A                |
| Peak forward surge current single sine-wave superimposed on rated load               | $I_{FSM}$      | 450        |     |      |      |      | A                |
| Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing     | $I^2t$         | 840        |     |      |      |      | A <sup>2</sup> s |
| RMS isolation voltage from case to leads   | $V_{ISO}$      | 2500       |     |      |      |      | V                |
| Operating junction storage temperature range   | $T_J, T_{STG}$ | -55 to 150 |     |      |      |      | °C               |

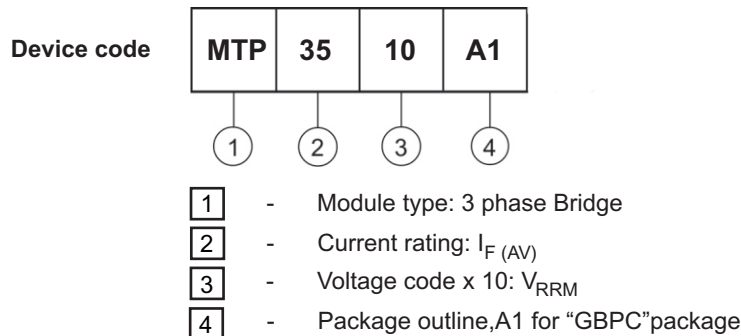
| ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |                           |        |           |    |    |    |    |               |
|---|---------------------------|--------|-----------|----|----|----|----|---------------|
| PARAMETER   | TEST CONDITIONS           | SYMBOL | MTP35..A1 |    |    |    |    | UNIT          |
|   |                           |        | 06        | 08 | 10 | 12 | 16 |               |
| Maximum instantaneous forward drop per diode                                  | $I_F = 17.5\text{A}$      | $V_F$  | 1.2       |    |    |    |    | V             |
| Maximum reverse DC current at rated DC blocking voltage per diode             | $T_A = 25^\circ\text{C}$  | $I_R$  | 5         |    |    |    |    | $\mu\text{A}$ |
|   | $T_A = 150^\circ\text{C}$ |        | 1000      |    |    |    |    |               |
| Typical junction capacitance per diode  | 4V, 1MHz                  | $C_J$  | 300       |    |    |    |    | pF            |

| THERMAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |                       |           |    |    |    |    |      |
|--|-----------------------|-----------|----|----|----|----|------|
| PARAMETER  | SYMBOL                | MTP35..A1 |    |    |    |    | UNIT |
|  |                       | 06        | 08 | 10 | 12 | 16 |      |
| Typical thermal resistance   | $R_{\theta JC}^{(1)}$ | 0.9       |    |    |    |    | °C/W |

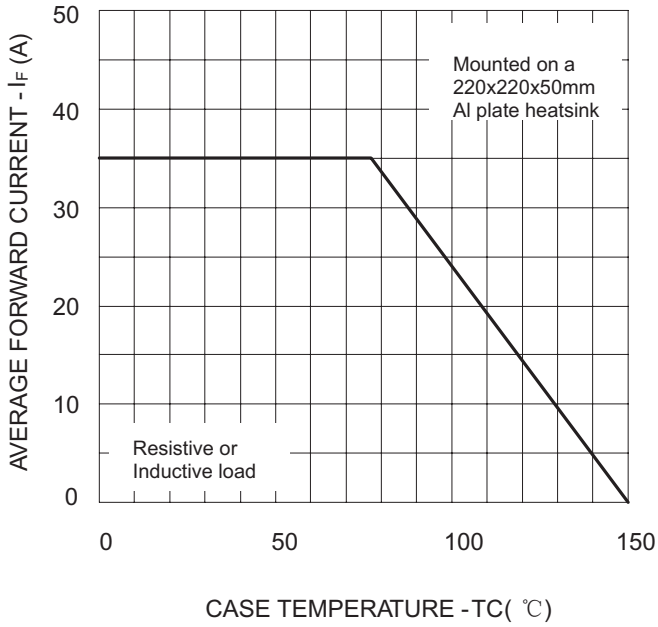
Notes

- (1) With heatsink
- (2) Bolt down on heatsink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #10 screw

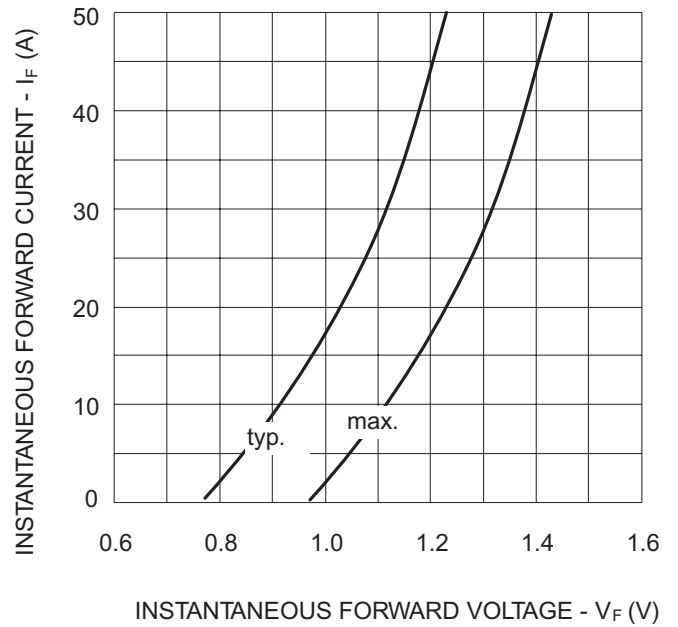
ORDERING INFORMATION TABLE



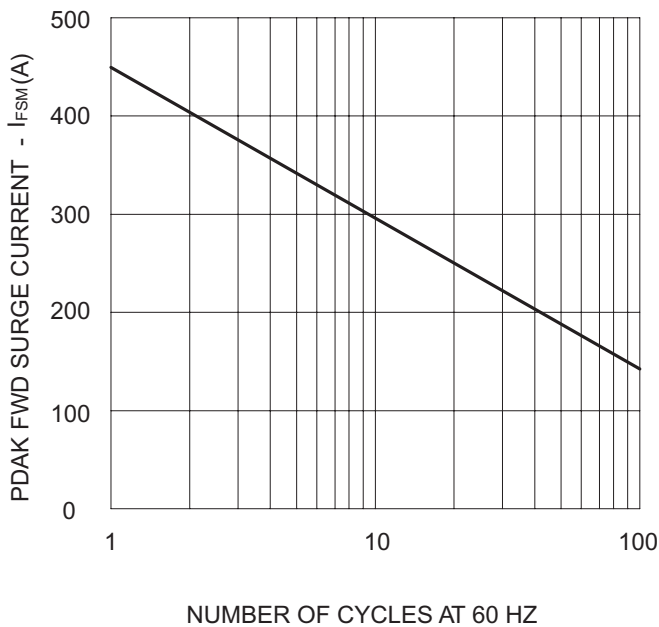
**Fig.1 Forward Current Derating Curve**



**Fig.2 Typical Forward Characteristics**



**Fig.3 Max Non-Repetitive Peak Surge Current**



**Fig.4 Transient thermal impedance**

