



# THE DATASHEET OF DF1502M

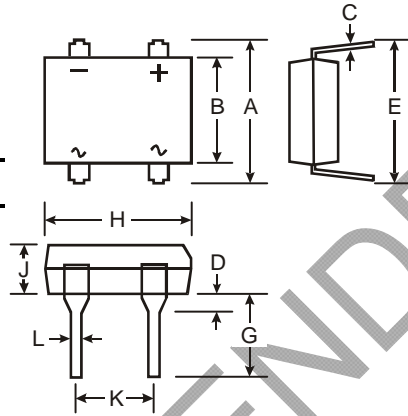


### Features

- Glass Passivated Die Construction
- Low Forward Voltage Drop, High Current Capability
- Surge Overload Rating to 50A Peak
- Designed for Printed Circuit Board Applications
- UL Listed Under Recognized Component Index, File Number E94661
- **Lead Free Finish, RoHS Compliant (Date Code 0532+)** (Note 3)

### Mechanical Data

- Case: DF-M
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Tin. Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Case
- Marking: Type Number
- Weight: 0.38 grams (approximate)



| DF-M                 |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 7.40 | 7.90 |
| B                    | 6.20 | 6.50 |
| C                    | 0.22 | 0.30 |
| D                    | 1.27 | 2.03 |
| E                    | 7.60 | 8.90 |
| G                    | 3.81 | 4.69 |
| H                    | 8.13 | 8.51 |
| J                    | 2.40 | 3.40 |
| K                    | 5.00 | 5.20 |
| L                    | 0.46 | 0.58 |
| All Dimensions in mm |      |      |

### Maximum Ratings and Electrical Characteristics

 @ $T_A = 25^\circ\text{C}$  unless otherwise specified

 Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic   | Symbol          | DF 15005M                   | DF 1501M | DF 1502M | DF 1504M | DF 1506M | DF 1508M | DF 1510M    | Unit |                      |
|--|-----------------|-----------------------------|----------|----------|----------|----------|----------|-------------|------|----------------------|
| Peak Repetitive Reverse Voltage  | $V_{RRM}$       |                             |          |          |          |          |          |             |      |                      |
| Working Peak Reverse Voltage   | $V_{RWM}$       | 50                          | 100      | 200      | 400      | 600      | 800      | 1000        | V    |                      |
| DC Blocking Voltage  | $V_R$           |                             |          |          |          |          |          |             |      |                      |
| RMS Reverse Voltage  | $V_{R(RMS)}$    | 35                          | 70       | 140      | 280      | 420      | 560      | 700         | V    |                      |
| Average Rectified Output Current   | $I_O$           | @ $T_A = 40^\circ\text{C}$  |          |          |          |          |          | 1.5         |      | A                    |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$       | @ $I_F = 1.5\text{A}$       |          |          |          |          |          | 50          |      | A                    |
| Forward Voltage (per element)  | $V_{FM}$        | @ $T_A = 25^\circ\text{C}$  |          |          |          |          |          | 1.1         |      | V                    |
| Peak Reverse Current   | $I_{RM}$        | @ $T_A = 125^\circ\text{C}$ |          |          |          |          |          | 10          |      | $\mu\text{A}$        |
| at Rated DC Blocking Voltage   |                 | @ $T_A = 125^\circ\text{C}$ |          |          |          |          |          | 500         |      |                      |
| $I^2t$ Rating for Fusing ( $t < 8.3\text{ms}$ )  | $I^2t$          | @ $T_A = 125^\circ\text{C}$ |          |          |          |          |          | 10.4        |      | $\text{A}^2\text{s}$ |
| Typical Total Capacitance (Note 2)   | $C_T$           | @ $T_A = 125^\circ\text{C}$ |          |          |          |          |          | 25          |      | $\mu\text{F}$        |
| Typical Thermal Resistance Junction to Ambient   | $R_{\theta JA}$ | @ $T_A = 125^\circ\text{C}$ |          |          |          |          |          | 40          |      | $^\circ\text{C/W}$   |
| Operating and Storage Temperature Range  | $T_j, T_{STG}$  | @ $T_A = 125^\circ\text{C}$ |          |          |          |          |          | -65 to +150 |      | $^\circ\text{C}$     |

- Notes:
1. Thermal resistance from junction to ambient mounted on PC board with 13 x 13mm (0.03mm thick) land areas.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  3. RoHS revision 13.2.2003. Glass and high temperature solder exemptions applied, see EU Directive Annex Notes 5 and 7.

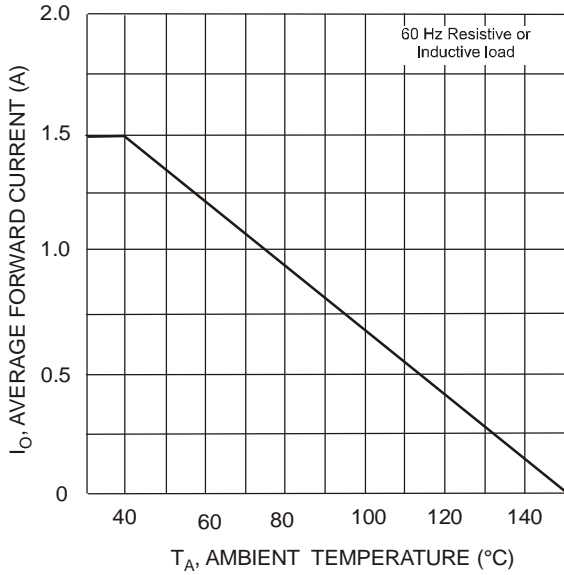


Fig. 1 Output Current Derating Curve

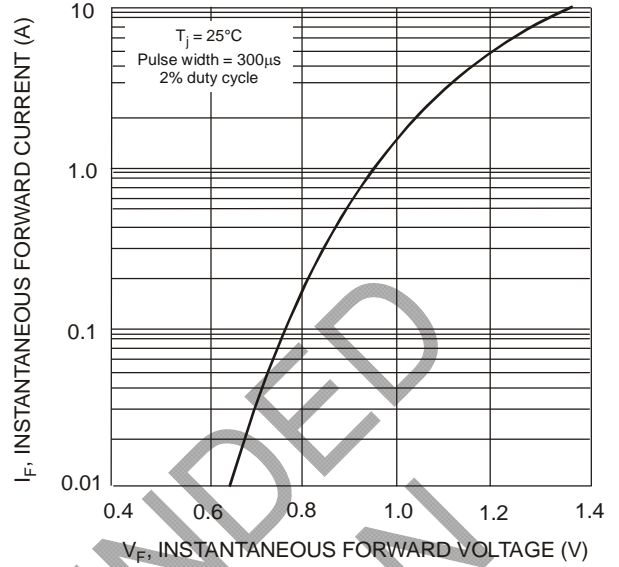


Fig. 2 Typical Forward Characteristics (per element)

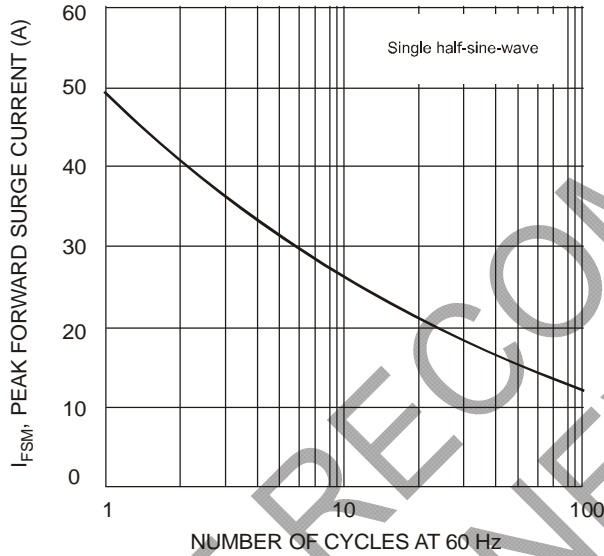


Fig. 3 Max Non-Repetitive Peak Forward Surge Current

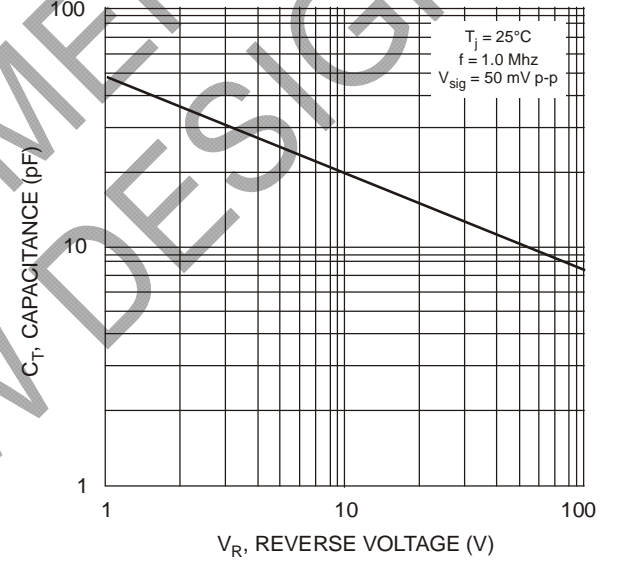


Fig. 4 Typical Total Capacitance (per element)

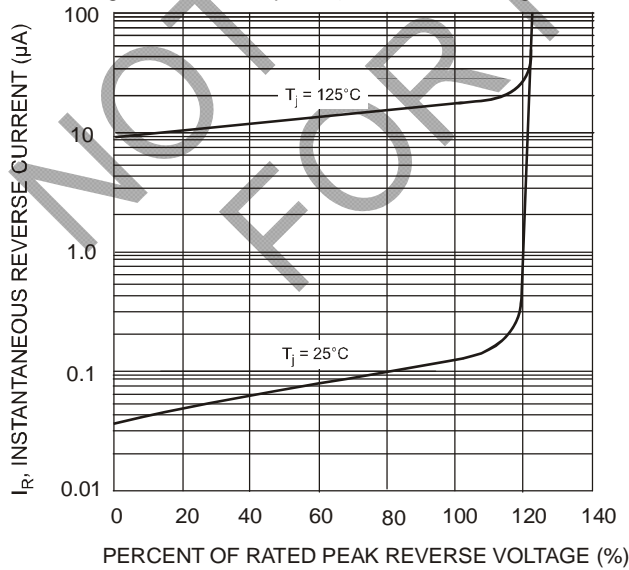


Fig. 5 Typical Reverse Characteristics (per element)

## Ordering Information (Note 4)

| Device  | Packaging | Shipping    |
|---------|-----------|-------------|
| DF15xxM | DF-M      | 50 per Tube |

Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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