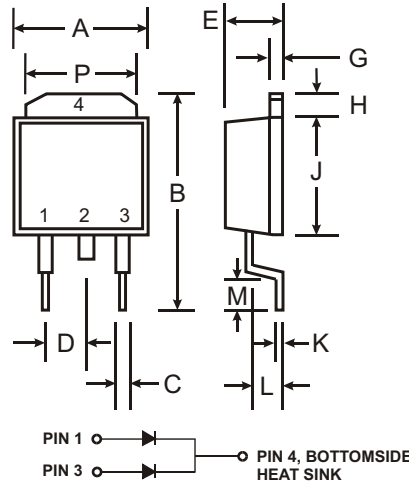


### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- Very Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, OR'ing, and Polarity Protection Applications
- Plastic Material: UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: DPAK Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking: See Sheet 2
- Weight: 0.4 grams (approx.)
- Ordering Information: See Below



| DPAK                 |             |     |
|----------------------|-------------|-----|
| Dim                  | Min         | Max |
| A                    | 6.3         | 6.7 |
| B                    | —           | 10  |
| C                    | 0.3         | 0.8 |
| D                    | 2.3 Nominal |     |
| E                    | 2.1         | 2.5 |
| G                    | 0.4         | 0.6 |
| H                    | 1.2         | 1.6 |
| J                    | 5.3         | 5.7 |
| K                    | 0.5 Nominal |     |
| L                    | 1.3         | 1.8 |
| M                    | 1.0         | —   |
| P                    | 5.1         | 5.5 |
| All Dimensions in mm |             |     |

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

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

| Characteristic  | Symbol   | Value       | Unit |
|---|--|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage  | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 35          | V    |
| RMS Reverse Voltage   | V <sub>R(RMS)</sub>                                    | 25          | V    |
| Average Rectified Output Current<br>(See Figure 4)  | I <sub>o</sub>   | 5<br>10     | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load<br>Per Package (JEDEC Method) | I <sub>FSM</sub>                                       | 75          | A    |
| Typical Thermal Resistance Junction to Case Bottom Side Per Leg<br>(Note 1)   | R <sub>θJC</sub>                                       | 2.43        | °C/W |
| Voltage Rate of Change @ V <sub>R</sub> = 35V, T <sub>j</sub> = 25°C  | dv/dt  | 10,000      | V/μs |
| Operating Temperature Range   | T <sub>j</sub>   | -55 to +125 | °C   |
| Storage Temperature Range   | T <sub>STG</sub>                                       | -55 to +125 | °C   |

Notes: 1. Device mounted on PC board with 14mm<sup>2</sup> (.013mm thick) copper pad areas.

### Ordering Information (Note 2)

| Device        | Packaging | Shipping         |
|---------------|-----------|------------------|
| MBRD1035CTL-T | DPAK      | 2500/Tape & Reel |

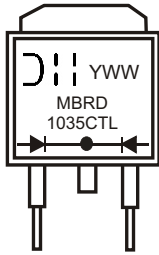
Notes: 2. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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

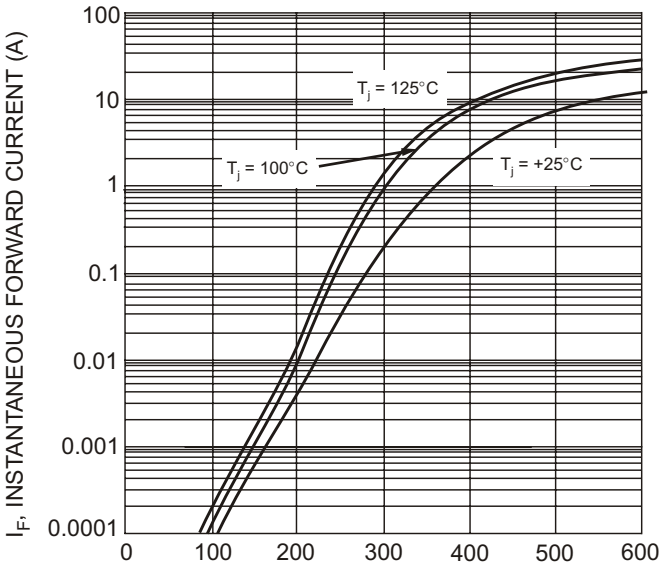
| Characteristic                     | Symbol      | Min | Typ  | Max                          | Unit                            | Test Condition   |
|------------------------------------|-------------|-----|------|------------------------------|---------------------------------|--|
| Reverse Breakdown Voltage (Note 3) | $V_{(BR)R}$ | 35  | —    | —                            | V                               | $I_R = 500\mu\text{A}$   |
| Forward Voltage (Note 3)           | $V_{FM}$    | —   | —    | 0.47<br>0.41<br>0.56<br>0.55 | V                               | $I_F = 5\text{A}, T_S = 25^\circ\text{C}$<br>$I_F = 5\text{A}, T_S = 100^\circ\text{C}$<br>$I_F = 10\text{A}, T_S = 25^\circ\text{C}$<br>$I_F = 10\text{A}, T_S = 100^\circ\text{C}$       |
| Peak Reverse Current (Note 3)      | $I_{RM}$    | —   | 0.04 | 2.0<br>30<br>200<br>5        | mA<br>mA<br>$\mu\text{A}$<br>mA | $V_R = 35\text{V}, T_j = 25^\circ\text{C}$<br>$V_R = 35\text{V}, T_j = 100^\circ\text{C}$<br>$V_R = 17.5\text{V}, T_j = 25^\circ\text{C}$<br>$V_R = 17.5\text{V}, T_j = 100^\circ\text{C}$ |
| Typical Junction Capacitance       | $C_j$       | —   | 340  | —                            | pF                              | $f = 1.0\text{MHz}, V_R = 4.0\text{V DC}$  |

- Notes:
1. Device mounted on PC board with  $14\text{mm}^2$  (.013mm thick) copper pad areas.
  2. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
  3. Short duration pulse test used to minimize self-heating effect.

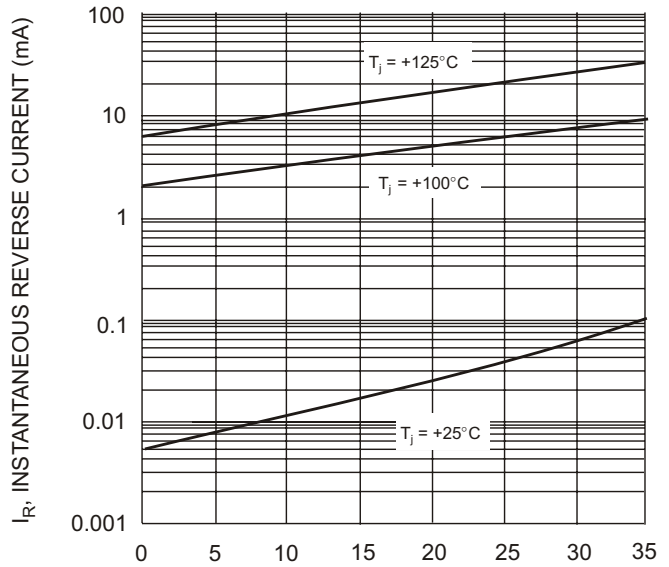
**Marking Information**



MBRD1035CTL = Product type marking code  
 D = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year ex: 2 for 2002  
 WW = Week code 01 to 52



$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (mV)  
 Fig. 1 Typical Forward Characteristics (Per Element)



$V_R$ , INSTANTANEOUS REVERSE VOLTAGE (V)  
 Fig. 2 Typical Reverse Characteristics (Per Element)

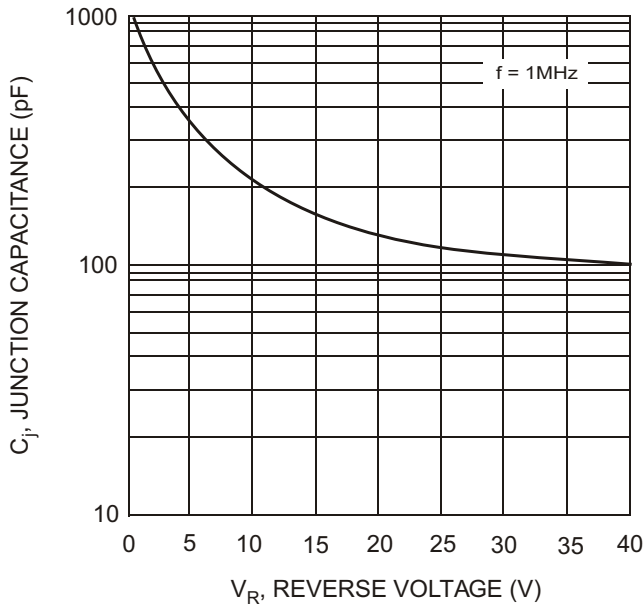


Fig. 3 Typical Junction Capacitance vs. Reverse Voltage (Per Element)

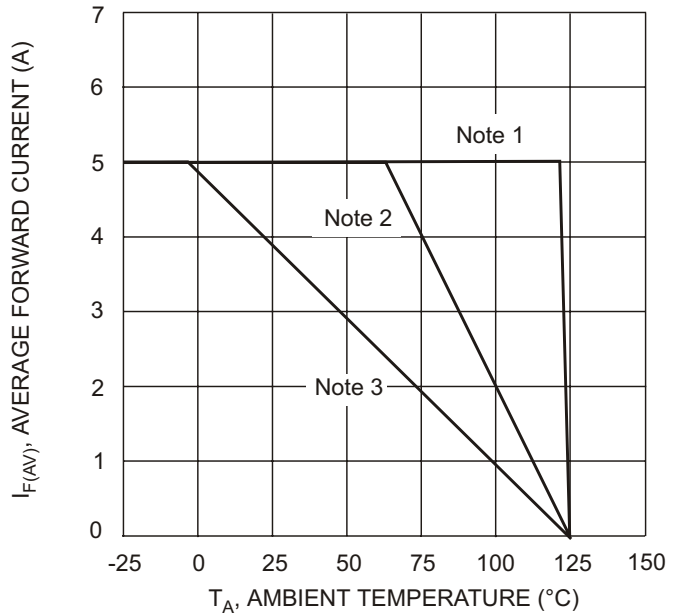


Fig. 4 DC Forward Current Derating (Per Element)

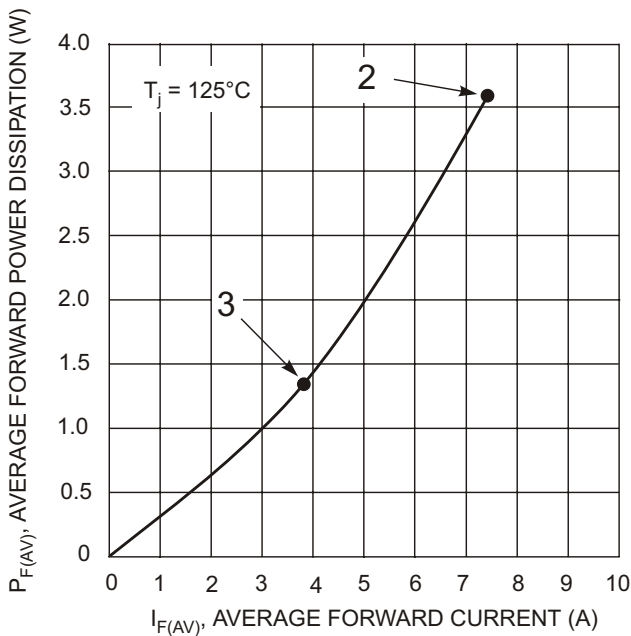


Fig. 5 Forward Power Dissipation (Per Element)

- Notes:
1.  $T_A = T_{SOLDERING\ POINT}$ ,  $R_{\theta JC} = 2.43^\circ C/W$ ,  $R_{\theta CA} = 0^\circ C/W$ .
  2. Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0".  $R_{\theta JA}$  in range of 15-30°C/W.
  3. Device mounted on FR-4 substrate, 2"x2", 2 oz. copper, single-sided, pad layout as per Diodes Inc. suggested pad layout document AP02001 which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.  $R_{\theta JA}$  in range of 60-75°C/W.