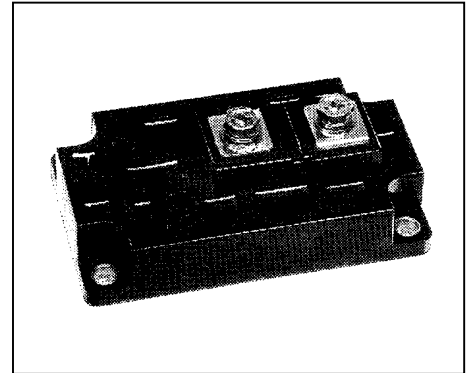
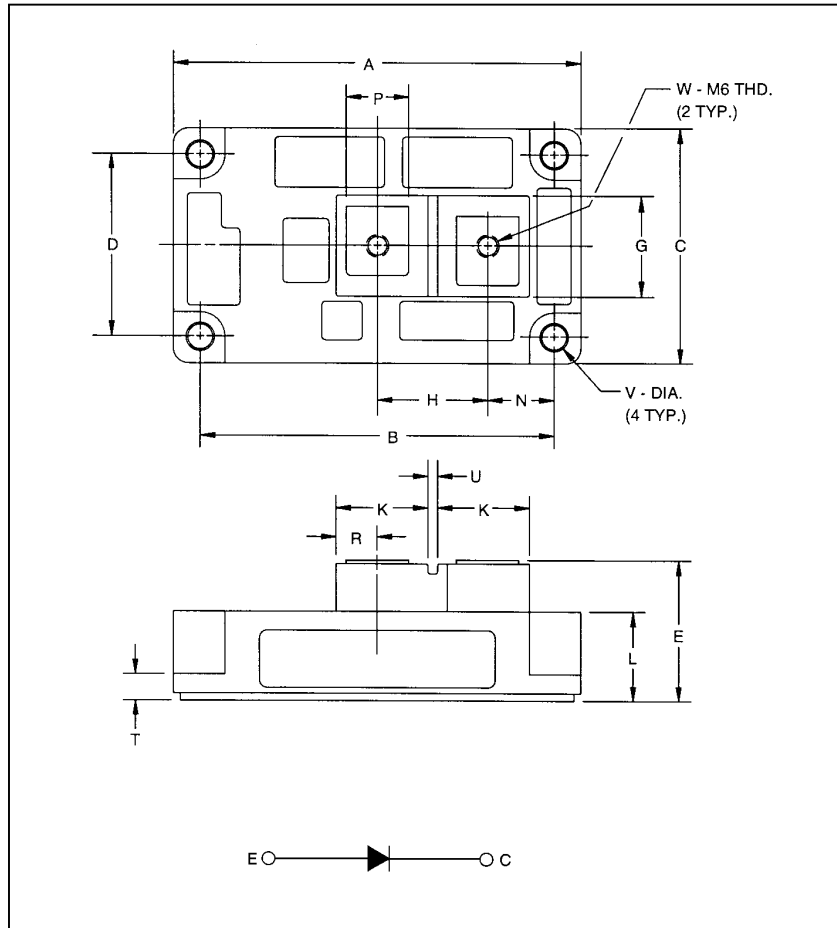




### Description:

Powerex Single Fast Recovery Diode Module features fast switching is specially designed for customer applications. The modules are isolated for easy mounting with other components on a common heatsink.

### Features:

- Fast Recovery Time
- Isolated Mounting
- Metal Baseplate
- Low Thermal Impedance
- 3000 V isolating voltage

### Applications:

- Switching Power Supplies
- Inverters
- Choppers
- Welding Power Supplies
- Free Wheeling Diode
- High Frequency Rectifiers

| Dim | Inches     | Millimeters |
|-----|------------|-------------|
| A   | 4.21       | 107.0       |
| B   | 3.661±0.01 | 93.0±0.25   |
| C   | 2.44       | 62.0        |
| D   | 1.89±0.01  | 48.0±0.25   |
| E   | 1.42 Max.  | 36.0 Max.   |
| G   | 1.18       | 30.0        |
| H   | 1.14       | 29.0        |
| K   | 0.94       | 24.0        |

| Dim | Inches    | Millimeters |
|-----|-----------|-------------|
| L   | 0.93      | 23.5        |
| N   | 0.69      | 17.5        |
| P   | 0.63      | 16.0        |
| R   | 0.43      | 11.0        |
| U   | 0.12      | 3.0         |
| V   | 0.26 Dia. | 6.5 Dia.    |
| W   | M6 Metric | M6          |

**Absolute Maximum Ratings,  $T_J=25^\circ\text{C}$  unless otherwise specified**

| Characteristics                              | Conditions                                                         | Symbol      | QRS1450001      | Units                  |
|----------------------------------------------|--------------------------------------------------------------------|-------------|-----------------|------------------------|
| Repetitive Peak Reverse Blocking Voltage     | -                                                                  | $V_{RRM}$   | 1400            | Volts                  |
| Non-Repetitive Peak Reverse Blocking Voltage | -                                                                  | $V_{RSM}$   | $V_{RRM} + 100$ | Volts                  |
| Average Forward Current                      | 180° Conduction, $T_c=25^\circ\text{C}$                            | $I_{F(AV)}$ | 500             | Amperes                |
| Peak Half Cycle Non-Repetitive Surge Current | $t = 8.3\text{mS}$ , 100% $V_{RRM}$ Reapplied                      | $I_{FSM}$   | 3330            | Amperes                |
| $I^2t$ for Fusing for One Cycle              | $t = 8.3\text{mS}$ , 100% $V_{RRM}$ Reapplied                      | $I^2t$      | 46200           | $\text{A}^2\text{sec}$ |
| Operating Junction Temperature               | -                                                                  | $T_J$       | -40 to 150      | $^\circ\text{C}$       |
| Storage Temperature                          | -                                                                  | $T_{STG}$   | -40 to 125      | $^\circ\text{C}$       |
| Maximum Mounting Torque, M6 Mounting Screw   | -                                                                  | -           | 26              | In.-lb.                |
| Maximum Terminal Torque, M6 Terminal Screw   | -                                                                  | -           | 26              | In.-lb.                |
| Module Weight (Typical)                      | -                                                                  | -           | 400             | Grams                  |
| V Isolation                                  | 60 Hz, circuit to base, all terminals shorted, $t = 1 \text{ sec}$ | $V_{RMS}$   | 3000            | Volts                  |

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

| Characteristics              | Symbol    | Test Conditions                                           | Min. | Typ. | Max. | Units         |
|------------------------------|-----------|-----------------------------------------------------------|------|------|------|---------------|
| Peak Reverse Leakage Current | $I_{RRM}$ | Rated $V_{RRM}$                                           | -    | -    | 4    | mA            |
| Peak On-State Voltage        | $V_{FM}$  | $I_F=500\text{A}$                                         | -    | 3.1  | 3.8  | Volts         |
| Reverse Recovery Time        | $t_{rr}$  | $I_F = 500\text{A}$ , $di/dt = -1000\text{A}/\mu\text{s}$ | -    | -    | 300  | ns            |
| Reverse Recovery Charge      | $Q_{rr}$  | $I_F = 500\text{A}$ , $di/dt = -1000\text{A}/\mu\text{s}$ | -    | 5    | -    | $\mu\text{C}$ |

**Thermal Characteristics,  $T_J=25^\circ\text{C}$  unless otherwise specified**

| Characteristics                                | Symbol          |            | Min. | Typ. | Max.  | Units                        |
|------------------------------------------------|-----------------|------------|------|------|-------|------------------------------|
| Thermal Resistance, Junction to Case           | $R_{\theta JC}$ | Per Diode  | -    | -    | 0.075 | $^\circ\text{C}/\text{Watt}$ |
| Thermal Resistance, Case to Sink<br>Lubricated | $R_{\theta CS}$ | Per Module | -    | -    | 0.04  | $^\circ\text{C}/\text{Watt}$ |