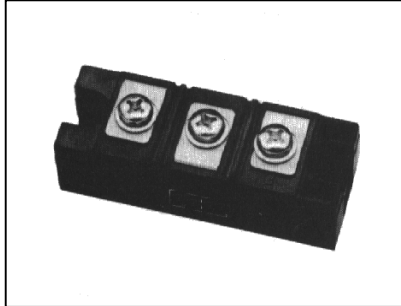
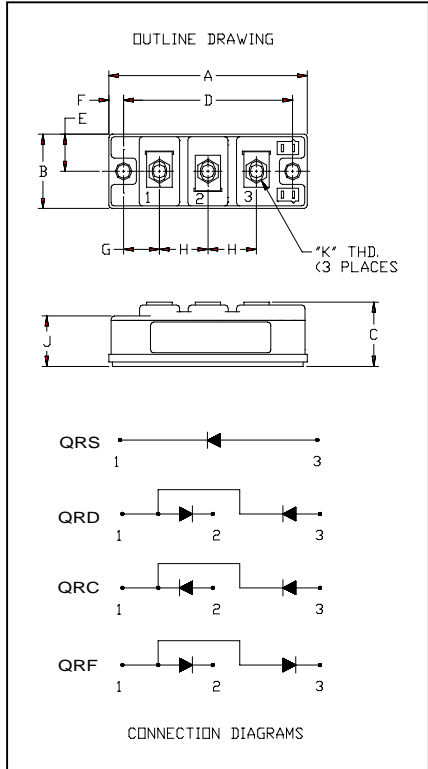


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

### Fast Recovery Diode Module 200 Amp/1400 Volts



### QR\_1420T30 Fast Recovery Diode Module 200 Amperes / 1400 Volts

#### Description:

Powerex Fast Recovery Diode Modules are designed for use in applications requiring fast switching. 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

| Dimensions | Inches | Millimeters |
|------------|--------|-------------|
| A          | 3.70   | 94          |
| B          | 1.34   | 34          |
| C          | 1.18   | 30          |
| D          | 3.15   | 80          |
| E          | 0.67   | 17          |
| F          | 0.28   | 6.99        |
| G          | 0.67   | 17.1        |
| H          | 0.91   | 23          |
| J          | 0.91   | 23          |
| K          | M6X1.0 | M6X1.0      |

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**Fast Recovery Diode Module**  
**200 Amp/1400 Volts****Absolute Maximum Ratings,  $T_J=25^\circ\text{C}$  unless otherwise specified**

| Characteristics                              | Conditions   | Symbol      | QRS1420T30      | Units                  |  |
|--|--|-------------|-----------------|------------------------|--|
|  |  |             | QRD1420T30      |                        |  |
|  |  |             | QRC1420T30      |                        |  |
|  |  |             | QRF1420T30      |                        |  |
| 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, $T_C=25^\circ\text{C}$                            | $I_{F(AV)}$ | 200             | Amperes                |  |
| Peak Half Cycle Non-Repetitive Surge Current | $t = 8.3\text{mS}$ , 100% $V_{RRM}$ Reapplied                      | $I_{FSM}$   | 1330            | Amperes                |  |
| $I^2t$ for Fusing for One Cycle              | $t = 8.3\text{mS}$ , 100% $V_{RRM}$ Reapplied                      | $I^2t$      | 7400            | $\text{A}^2\text{sec}$ |  |
| Operating Junction Temperature               | -  | $T_J$       | -40 to 150      | $^\circ\text{C}$       |  |
| Storage Temperature                          | -  | $T_{STG}$   | -40 to 150      | $^\circ\text{C}$       |  |
| Maximum Mounting Torque, M6 Mounting Screw   | -  | -           | 26              | In.-lb.                |  |
| Maximum Terminal Torque, M6 Terminal Screw   | -  | -           | 26              | In.-lb.                |  |
| Module Weight (Typical)                      | -  | -           | 220             | 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 | $I_{RRM}$ | $T_J = 150^\circ\text{C}$ , Rated $V_{RRM}$              | -    | -    | 1    | mA            |
| Peak On-State Voltage        | $V_{FM}$  | $I_F=200\text{A}$  | -    | -    | 3.8  | Volts         |
| Reverse Recovery Time        | $t_{rr}$  | $I_F = 200\text{A}$ , $di/dt = -400\text{A}/\mu\text{s}$ | -    | -    | 300  | ns            |
| Reverse Recovery Charge      | $Q_{rr}$  | $I_F = 200\text{A}$ , $di/dt = -400\text{A}/\mu\text{s}$ | -    | 2.0  | -    | $\mu\text{C}$ |

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

| Characteristics                             | Symbol          | Min. | Typ. | Max. | Units                        |
|---|-----------------|------|------|------|------------------------------|
| Thermal Resistance, Junction to Case        | $R_{\theta JC}$ | -    | -    | 0.18 | $^\circ\text{C}/\text{Watt}$ |
| Thermal Resistance, Case to Sink Lubricated | $R_{\theta CS}$ | -    | -    | 0.04 | $^\circ\text{C}/\text{Watt}$ |

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**Fast Recovery Diode Module  
200 Amp/1400 Volts**

