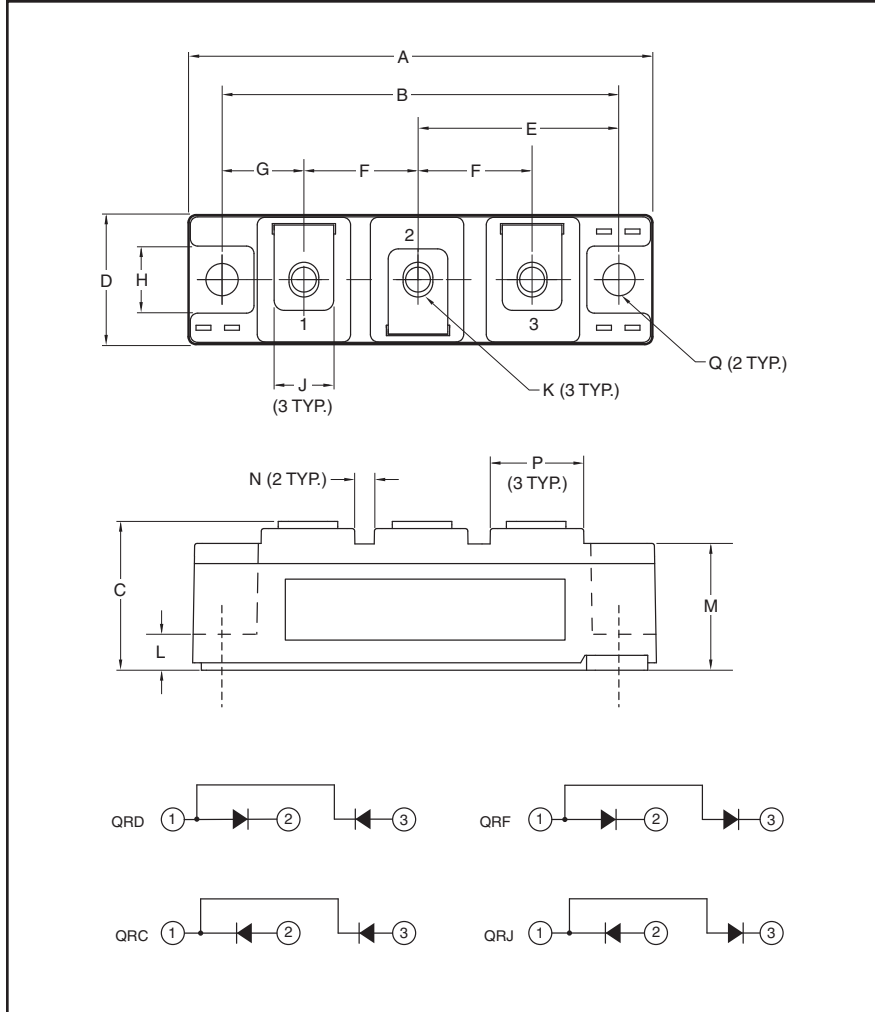


Super Fast Recovery Diode Modules 140 Amperes/600 Volts



Description:

Powerex Super Fast Recovery Dual Diode Modules are designed for use in applications requiring fast switching. The modules are isolated for easy mounting with other components on common heatsinks.

Features:

- Super Fast Recovery Time
- RoHS Compliant
- Isolated Mounting
- Metal Baseplate
- Low Thermal Impedance
- 2500V Isolating Voltage

Applications:

- Free Wheeling
- Welding and Plasma Cutting Machine

Outline Drawing and Circuit Diagram

| Dimensions | Millimeters |
|------------|-------------|
| A | 93.5 |
| B | 80 |
| C | 30 |
| D | 26 |
| E | 40.5 |
| F | 23 |
| G | 16.5 |
| H | 13 |

| Dimensions | Millimeters |
|------------|-------------|
| J | 12 |
| K | M5 |
| L | 7.5 |
| M | 25.4 |
| N | 4 |
| P | 19 |
| Q | 6.5 Dia. |

QR_0620R30
Super Fast Recovery Dual Diode Modules
 140 Amperes/600 Volts

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

| Ratings | Symbol | QRD0620R30 | Units |
|---|-------------|--|------------------------|
| | | QRC0620R30 QRF0620R30 QRJ0620R30 | |
| Repetitive Peak Reverse Blocking Voltage | V_{RRM} | 600 | Volts |
| Non-Repetitive Peak Reverse Blocking Voltage | V_{RSM} | $V_{RRM} + 100$ | Volts |
| DC Current, $T_C = 80\text{ }^\circ\text{C}$ (Resistive load) | $I_{F(DC)}$ | 140 | Amperes |
| Peak Half Cycle Non-repetitive Surge Current ($t = 8.3\text{mS}$, 100% V_{RRM} Reapplied) | I_{FSM} | TBD | Amperes |
| I^2t for Fusing for One Cycle ($t = 8.3\text{mS}$, 100% V_{RRM} Reapplied) | I^2t | TBD | A^2sec |
| 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 Mounting Torque, M5 Terminal Screw | — | 17 | in-lb |
| Module Weight (Typical) | — | 150 | Grams |
| V Isolation (60 Hz, Circuit to Base, All Terminals Shorted, $t = 60\text{ sec}$) | V_{RMS} | 2500 | Volts |

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

| Characteristics | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|-------------------------|-----------|--|------|------|------|---------------|
| Reverse Leakage Current | I_{RRM} | Rated V_{RRM} | — | — | 1.0 | mA |
| On-State Voltage | V_{FM} | $I_F = 100\text{A}$ | — | 1.6 | 2.3 | Volts |
| | | $I_F = 140\text{A}$ | — | 1.8 | 2.5 | Volts |
| Reverse Recovery Time | t_{rr} | $I_f = 100\text{A}$, $di/dt = \text{TBD}$ | — | — | 120 | ns |
| Reverse Recovery Charge | Q_{rr} | $I_f = 100\text{A}$, $di/dt = \text{TBD}$ | — | 4.2 | — | μC |

Thermal and Mechanical Characteristics, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

| Characteristics | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|---|-----------------|-----------------|------|------|-------|--------------------|
| Thermal Resistance, Junction to Case* | $R_{th(j-c)}$ Q | Per Diode | — | — | 0.205 | $^\circ\text{C/W}$ |
| Contact Thermal Resistance, Case to Sink (Lubricated)* | $R_{th(c-s)}$ | Per Module | — | — | 0.075 | $^\circ\text{C/W}$ |

 * T_C , T_f measured point is just under the chip.

QR_0620R30
Super Fast Recovery Dual Diode Modules
 140 Amperes/600 Volts

