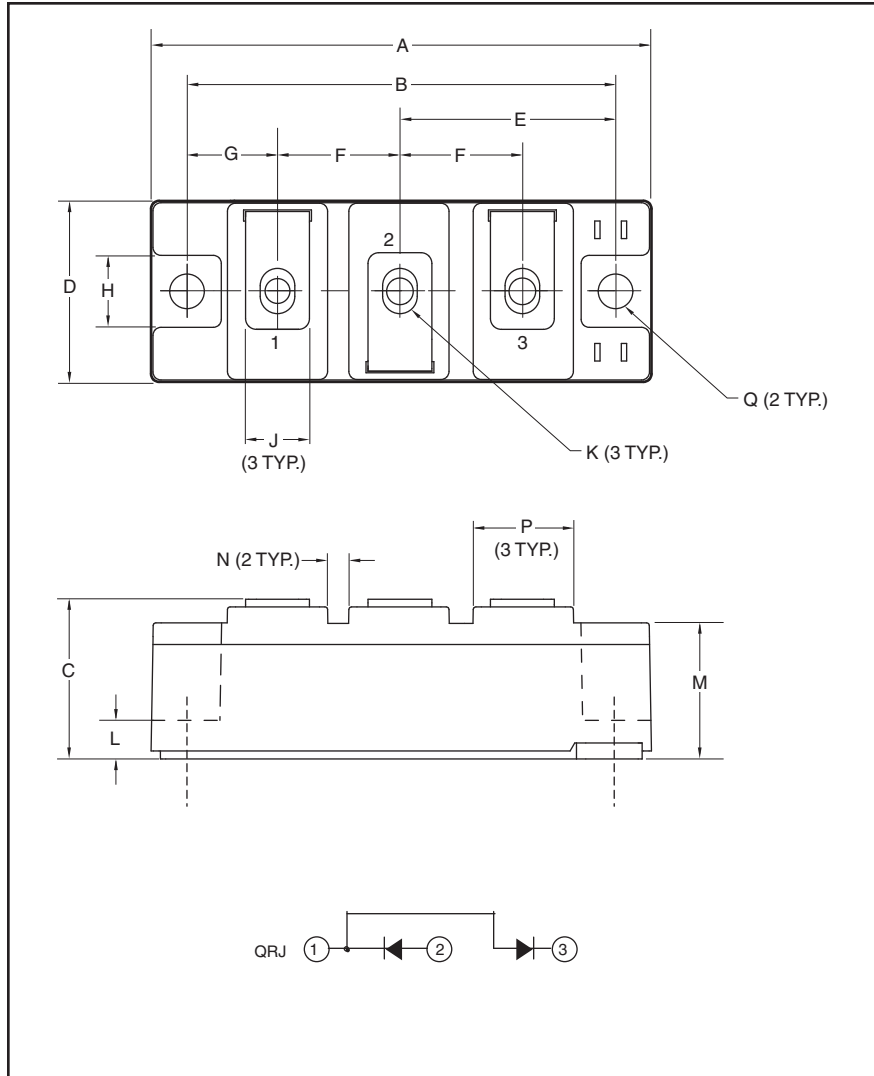


Super Fast Recovery Diode Modules 210 Amperes/600 Volts



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	Inches	Millimeters
A	3.70	94.0
B	3.150±0.01	80.0±0.25
C	1.22	31.0
D	1.34	34.0
E	1.57	40.0
F	0.90	23.0
G	0.67	17.0
H	0.51	13.0

Dimensions	Inches	Millimeters
J	0.47	12.0
K	M6 Metric	M6
L	0.30	7.5
M	1.0	25.4
N	0.16	4.0
P	0.75	19.0
Q	0.256 Dia.	6.5 Dia.

QRJ0630R31
Super Fast Recovery Dual Diode Modules

210 Amperes/600 Volts

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

Ratings	Symbol	QRD0630R30 QRC0630R30 QRF0630R30 QRJ0630R30	Units
Repetitive Peak Reverse Blocking Voltage	V_{RRM}	600	Volts
Non-Repetitive Peak Reverse Blocking Voltage	V_{RSM}	$V_{RRM} + 100$	Volts
DC Current, $T_C = 80^\circ\text{C}$ (Resistive Load)	$I_F(\text{DC})$	210	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 150	$^\circ\text{C}$
Maximum Mounting Torque, M6 Mounting Screw	—	26	in-lb
Maximum Mounting Torque, M6 Terminal Screw	—	26	in-lb
Module Weight (Typical)	—	180	Grams
V Isolation (60 Hz, Circuit to Base, All Terminals Shorted, $t = 60\text{ sec}$)	V_{RMS}	2500	Volts

Electrical Characteristics, $T_j = 25^\circ\text{C}$ 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}	$I_F = 150\text{A}$	—	1.5	2.2	Volts
		$I_F = 210\text{A}$	—	1.8	2.5	Volts
Threshold Voltage	V_{TO}	$T_j = 125^\circ\text{C}$	—	1.68	—	Volts
Slope Resistance	r_T	$T_j = 125^\circ\text{C}$	—	3.50	—	$\text{m}\Omega$
Reverse Recovery Time	t_{rr}	$I_F = 150\text{A}$, $di/dt = \text{TBD}$	—	—	120	ns
Reverse Recovery Charge	Q_{rr}	$I_F = 150\text{A}$, $di/dt = \text{TBD}$	—	6.3	—	μC

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

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case*	$R_{th(j-c)}$ Q	Per Diode	—	—	0.137	$^\circ\text{C/W}$
Contact Thermal Resistance, Case to Sink (Lubricated)*	$R_{th(c-s)}$	Per Module	—	—	0.05	$^\circ\text{C/W}$

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

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