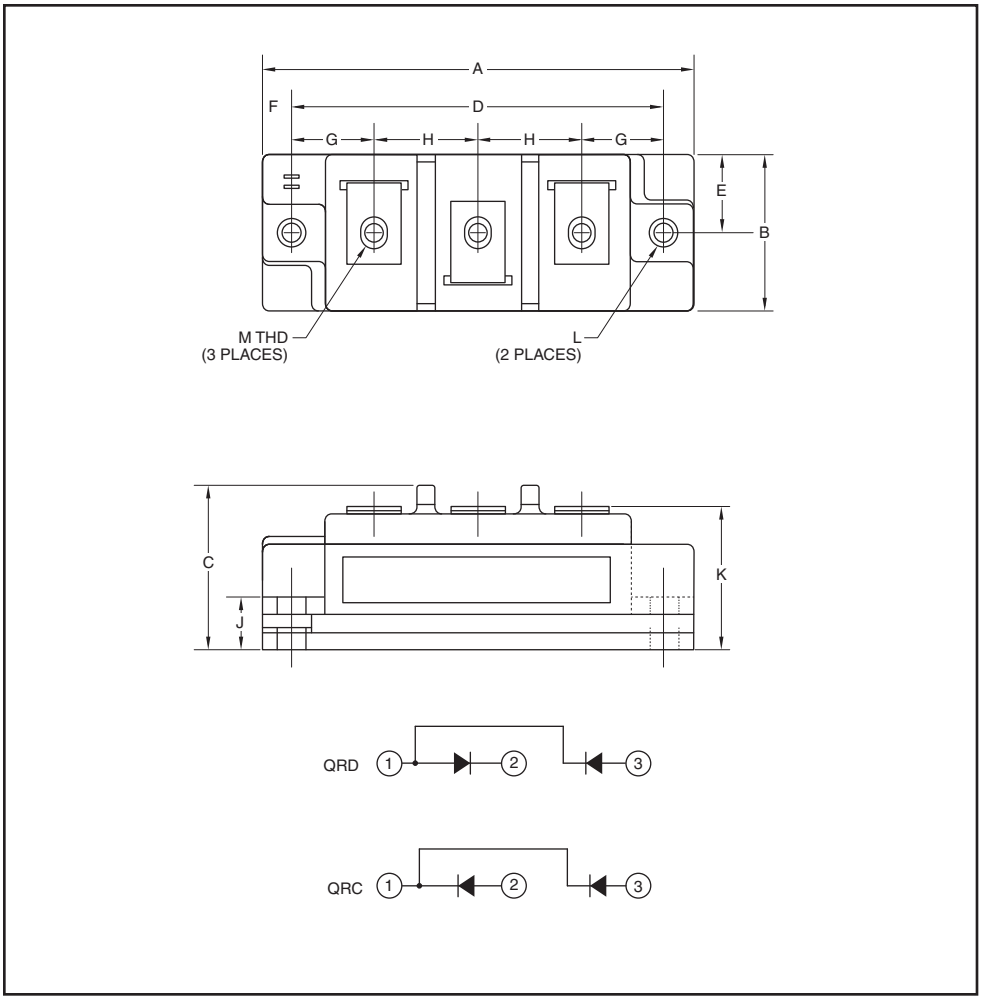
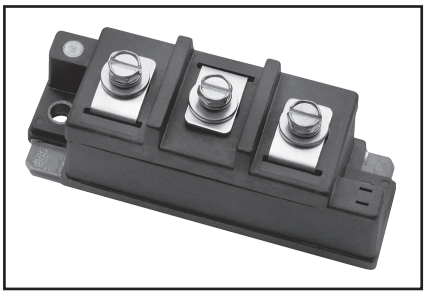
Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwrx.com

Fast Recovery Diode Module
100 Amperes/3300 Volts





Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.40	35.6
D	3.15	80.0
E	0.67	17.0
F	0.28	6.99

Dimensions	Inches	Millimeters
G	0.67	17.1
H	0.91	23.0
J	0.36	9.0
K	1.18	30.0
L	0.216 Dia.	5.5 Dia.
M	#10-32	#10-32

Description:

High voltage diodes feature highly insulating housings that offer enhanced protection by means of greater creepage and strike clearance distance for many demanding applications like medium voltage drives and auxiliary traction applications.

Features:

- ☐ Alumina Ceramic Substrate for Low Thermal Impedance
- ☐ Copper Baseplate
- ☐ Fast Recovery Time (1.2 µs max.)
- ☐ Industry Standard Packages Allow Common Bus Work to Complementary High Isolation Diodes
- ☐ No Additional Insulation Components Required

Applications:

- ☐ High Voltage Power Supplies
- ☐ Medium Voltage Drives
- ☐ Motor Drives
- ☐ Traction

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Absolute Maximum Ratings, T_j = 25°C unless otherwise specified

Ratings		Symbol	QRD3310002 QRC3310002	Units
Repetitive Peak Reverse Blocking Voltage		$_{RRM}$	3300	Volts
Non-Repetitive Peak Reverse Blocking Voltage		V_{RSM}	V_{RRM} + 100	Volts
Average Forward Current	T_C = 80°C	$I_{F(avg)}$	60	Amperes
	T_C = 25°C	$I_{F(avg)}$	90	Amperes
Forward Current (Pulse)		I_{FM}	200	Amperes
Operating Junction Temperature		T_j	-40 to 150	°C
Storage Temperature		T_{stg}	-40 to 150	°C
Maximum Mounting Torque, #10-32 Mounting Screw		—	26	in-lb
Maximum Terminal Torque, #10-32 Terminal Screw		—	26	in-lb
Module Weight (Typical)		—	250	Grams
V Isolation (60 Hz, Circuit to Base, All Terminals Shorted, t = 1 sec.)		V_{RMS}	6000	Volts

IGBT Electrical Characteristics, T_j = 25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Peak Reverse Leakage Current	I_{RRM}	Rated V_{RRM}	—	—	5	mA
Peak On-State Voltage	V_{FM}	I_F = 100A	—	3.3	4.3	Volts
Reverse Recovery Time	t_{rr}	I_F = 100A, di/dt = -200A/µs	—	—	1.2	µs
Reverse Recovery Charge	Q_{rr}	I_F = 100A, di/dt = -200A/µs	—	25	—	µC

Thermal and Mechanical Characteristics, T_j = 25 °C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{th(j-c)}Q$	Per Diode	—	—	0.20	°C/W
Thermal Resistance, Case to Sink Lubricated	$R_{th(c-s)}Q$	Per Module	—	—	0.05	°C/W

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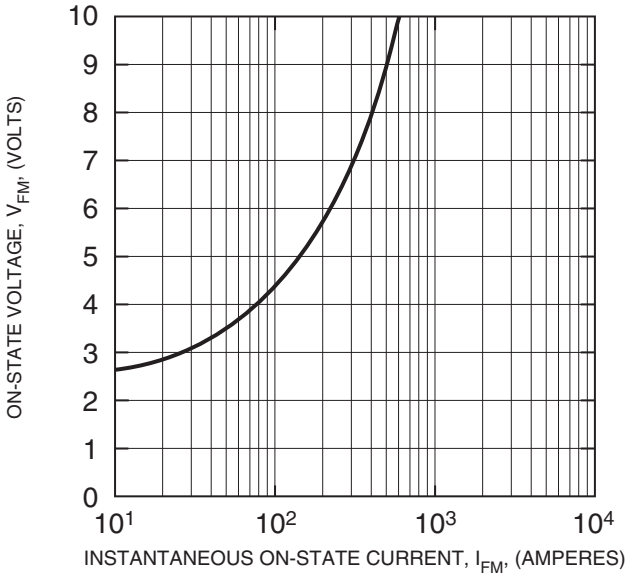
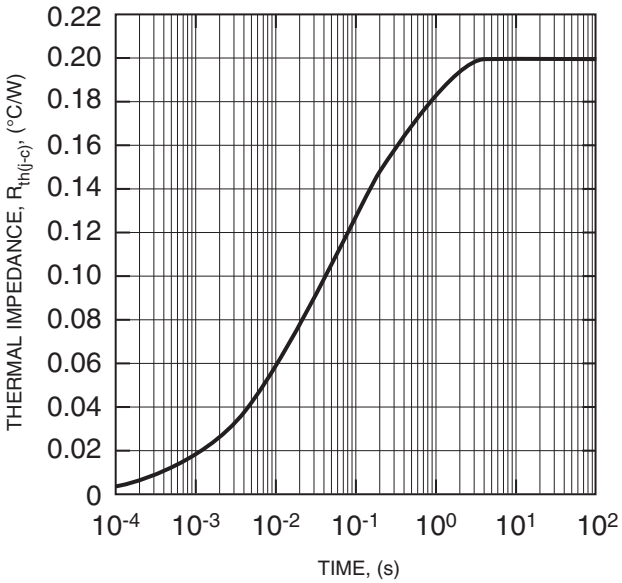
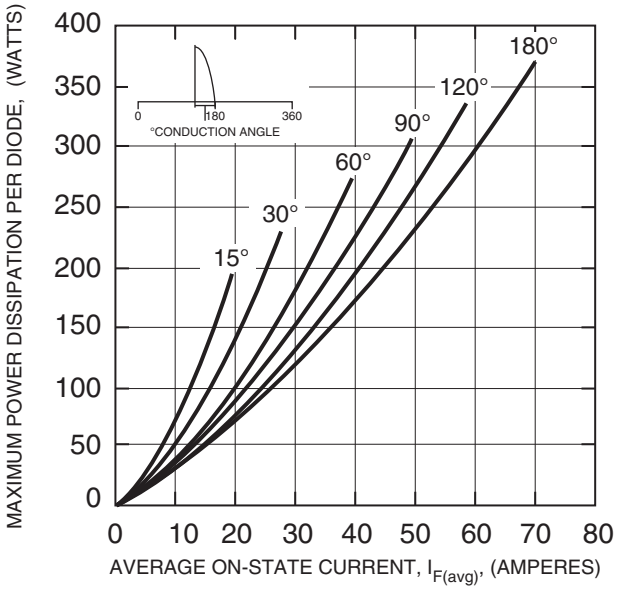
MAXIMUM ON-STATE FORWARD VOLTAGE DROP CHARACTERISTICS (T_j = 150°C)



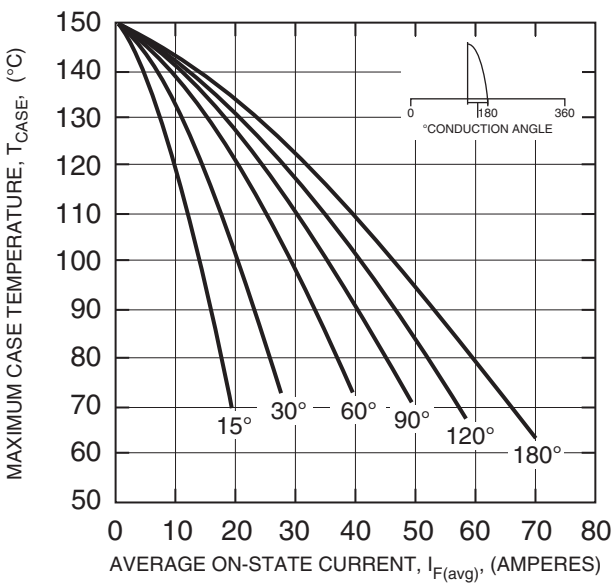
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



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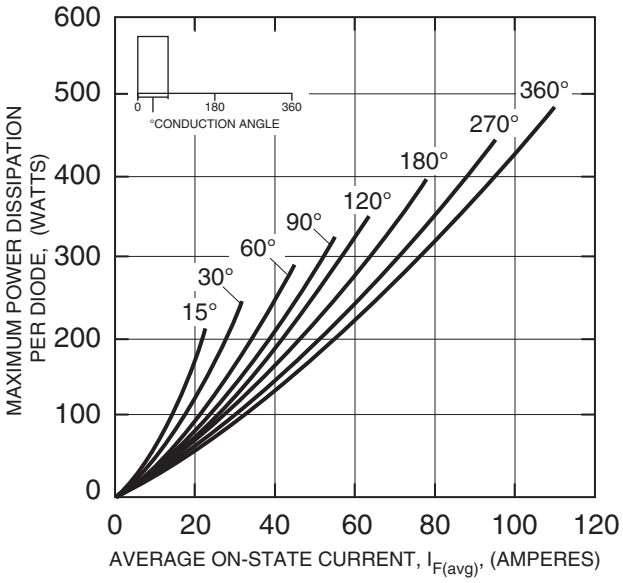
MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)