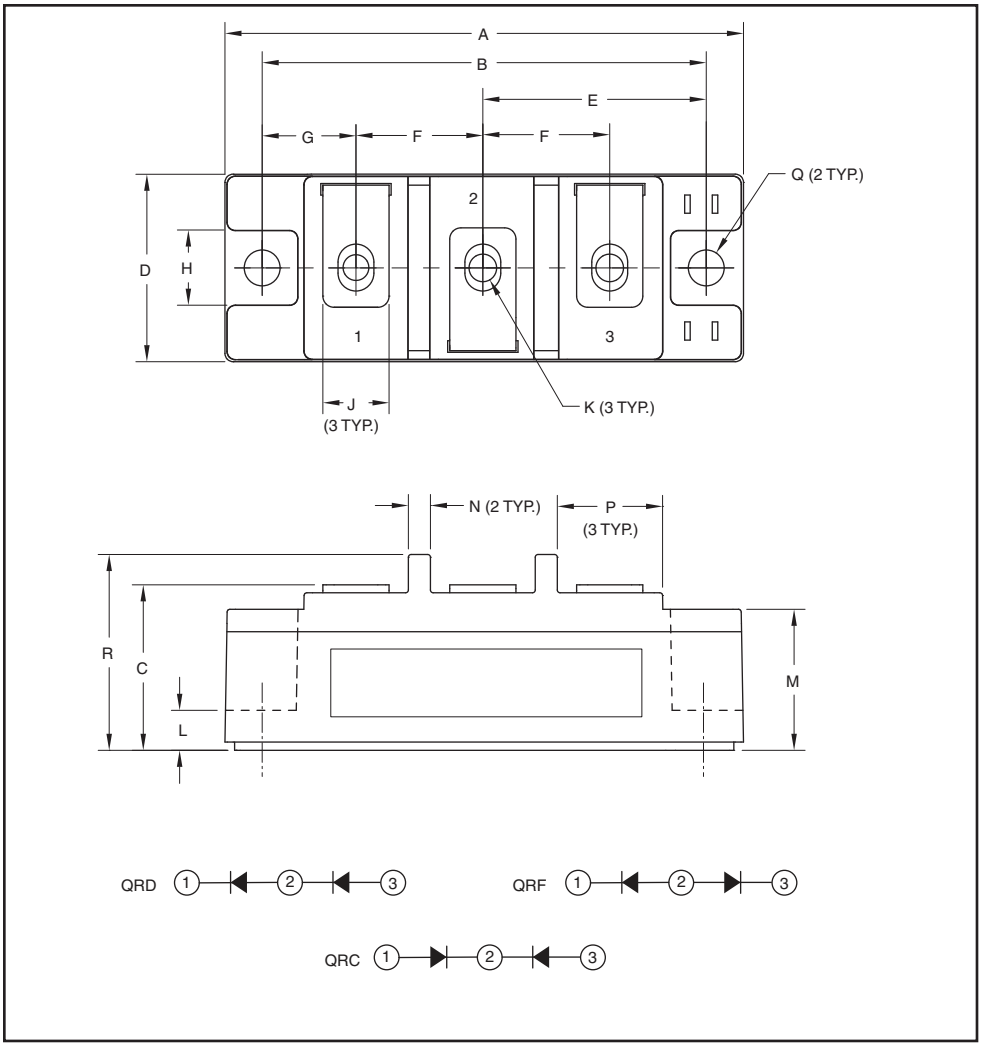
Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwrx.com

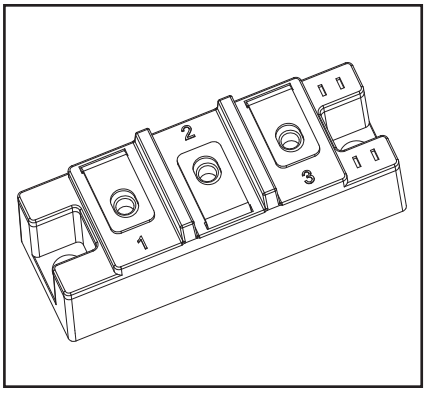
Fast Recovery Diode Module
100 Amperes/3300 Volts



Outline Drawing and Circuit Diagram

Dimensions	Millimeters
A	94
B	80
C	30
D	34
E	40
F	23
G	17
H	13

Dimensions	Millimeters
J	12
K	#10-32
L	7.5
M	25.4
N	4
P	19
Q	6.5 Dia.
R	35



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 (1.2 µs max.)
- ☐ Isolation Material - DBC AIN
- ☐ Copper Baseplate
- ☐ Low Thermal Impedance
- ☐ 6000V Isolated Mounting

Applications:

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

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QR_3310007
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100 Amperes/3300 Volts

Maximum Ratings, T_j = 25 °C unless otherwise specified

Ratings		Symbol	QRC3310007 QRD3310007 QRF3310007	Units
Repetitive Peak Reverse Blocking Voltage		V_{RRM}	3300	Volts
Non-Repetitive Peak Reverse Blocking Voltage		V_{RSM}	V_{RRM} + 100	Volts
Average Forward Current	180°C Conduction, T_C = 80°C	$I_{F(AV)}$	86	Amperes
	180°C Conduction, T_C = 63°C	$I_{F(AV)}$	100	Amperes
	180°C Conduction, T_C = 25°C	$I_{F(AV)}$	127	Amperes
Peak Half Cycle Non-Repetitive Surge Current (t = 8.3mS, 100% V_{RRM} Reapplied)		I_{FSM}	1670	Amperes
Repetitive Peak Surge Current (Square Wave, 20 kHz)		I_{FRM}	230	Amperes
I^2t for Fusing for One Cycle (t = 8.3mS, 100% V_{RRM} Reapplied)		I^2t	11620	A^2sec
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 Mounting Torque, #10-32 Terminal Screw		—	26	in-lb
Module Weight (Typical)		—	180	Grams
V Isolation (60 Hz, Circuit to Base, All Terminals Shorted, t = 60 sec.)		V_{RMS}	6000	Volts

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	$R_{th(j-c)}$	Per Diode	—	—	0.12	°C/W
Thermal Resistance, Case to Sink Lubricated	$R_{th(c-s)}$	Per Module	—	—	0.05	°C/W

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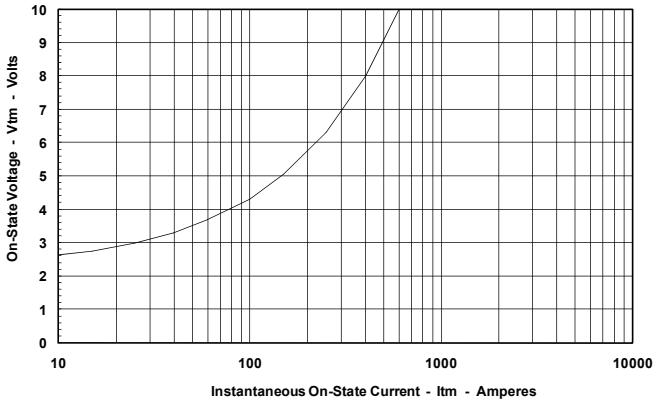
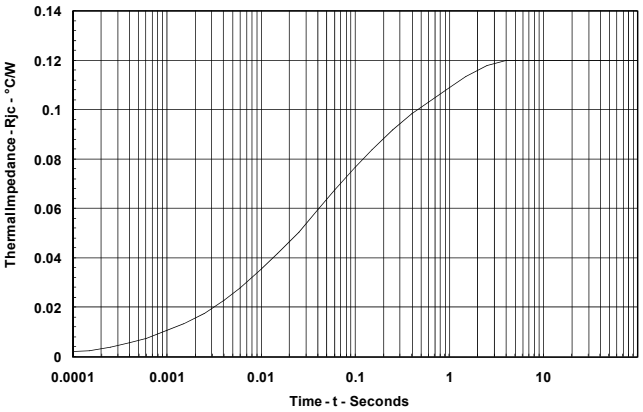
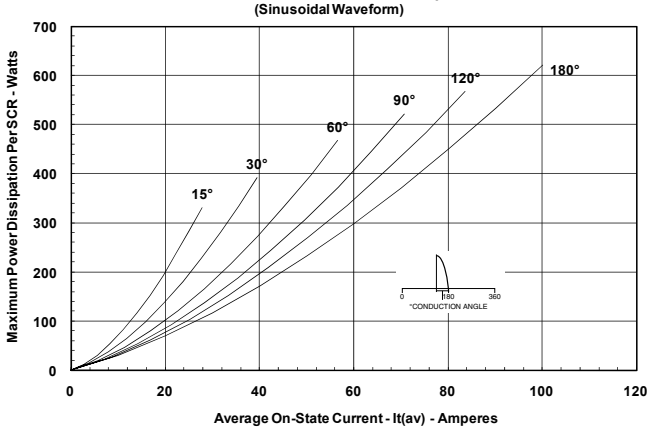
Maximum On-State Forward Voltage Drop
(Tj = 150 C)



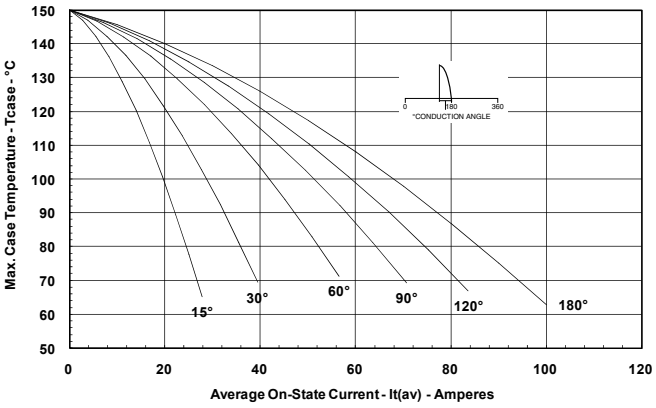
Maximum Transient Thermal Impedance
(Junction to Case)



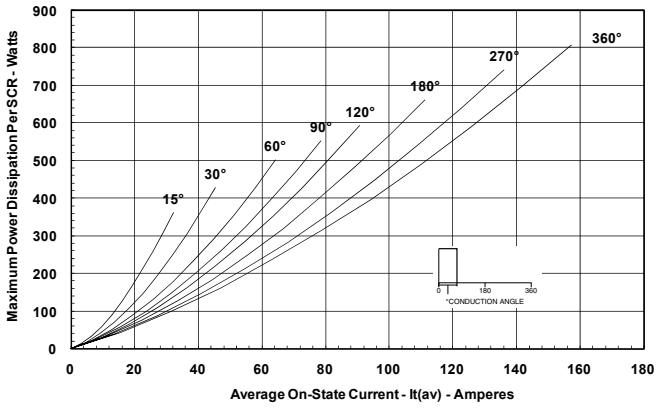
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



Maximum Allowable Case Temperature
(Sinusoidal Waveform)



Maximum On-State Power Dissipation
(Rectangular Waveform)



Maximum Allowable Case Temperature
(Rectangular Waveform)