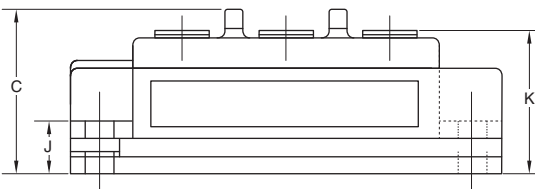
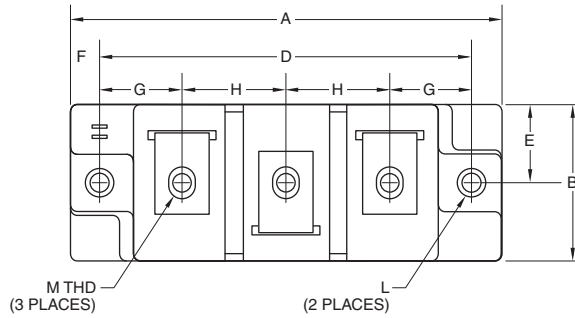


Fast Recovery Diode Module 100 Amperes/3300 Volts



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 (1.2 μ s max.)
- ☐ Isolation Material - DBC AlN
- ☐ Copper Baseplate
- ☐ Low Thermal Impedance
- ☐ 6000V Isolated Mounting
- ☐ RoHS Compliant

Applications:

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

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



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

QR_3310003

Fast Recovery Diode Module

100 Amperes/3300 Volts

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

Ratings		Symbol	QRD3310003	Units
			QRC3310003	
Repetitive Peak Reverse Blocking Voltage		V_{RRM}	3300	Volts
Non-Repetitive Peak Reverse Blocking Voltage		V_{RSM}	$V_{RRM} + 100$	Volts
Average Forward Current	$T_C = 80^{\circ}\text{C}$	$I_F(\text{avg})$	86	Amperes
	$T_C = 63^{\circ}\text{C}$	$I_F(\text{avg})$	100	Amperes
	$T_C = 25^{\circ}\text{C}$	$I_F(\text{avg})$	127	Amperes
Forward Current (Pulse)		I_{FM}	200	Amperes
Operating Junction Temperature		T_j	-40 to 150	$^{\circ}\text{C}$
Storage Temperature		T_{stg}	-40 to 150	$^{\circ}\text{C}$
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, $T_j = 25^\circ\text{C}$ 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}	$I_F = 100\text{A}$	—	3.3	4.3	Volts
Reverse Recovery Time	t_{rr}	$I_F = 100\text{A}$, $di/dt = -200\text{A}/\mu\text{s}$	—	—	1.2	μs
Reverse Recovery Charge	Q_{rr}	$I_F = 100\text{A}$, $di/dt = -200\text{A}/\mu\text{s}$	—	25	—	μC

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

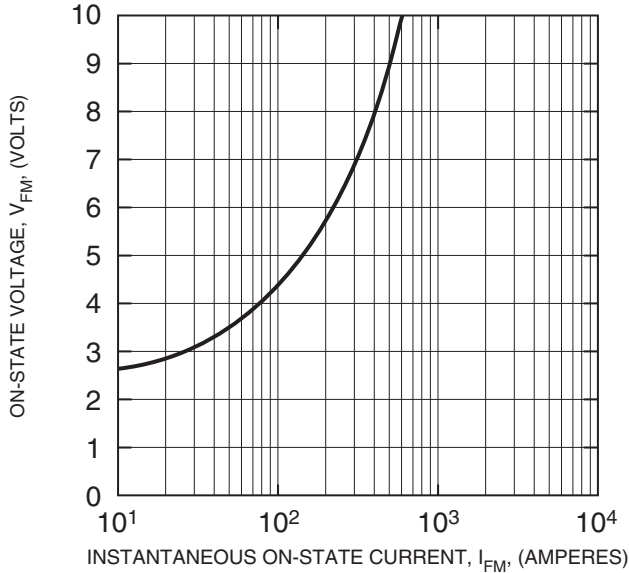
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{th(j-c)}Q$	Per Diode	—	—	0.12	$^\circ\text{C}/\text{W}$
Thermal Resistance, Case to Sink Lubricated	$R_{th(c-s)}Q$	Per Module	—	—	0.05	$^\circ\text{C}/\text{W}$

QR_3310003

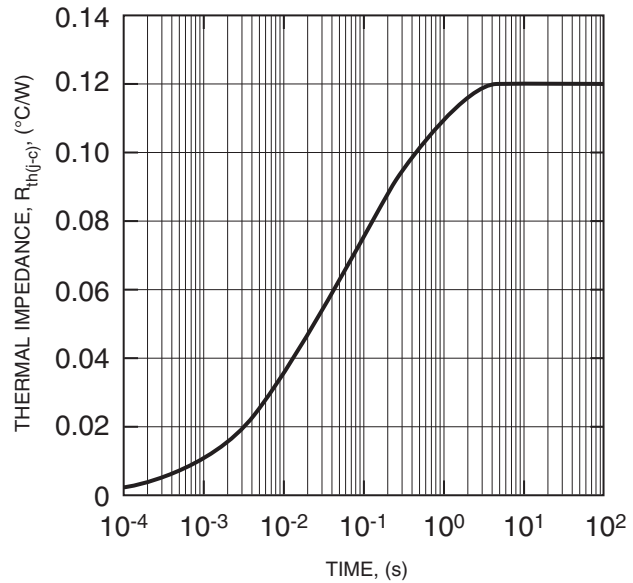
Fast Recovery Diode Module

100 Amperes/3300 Volts

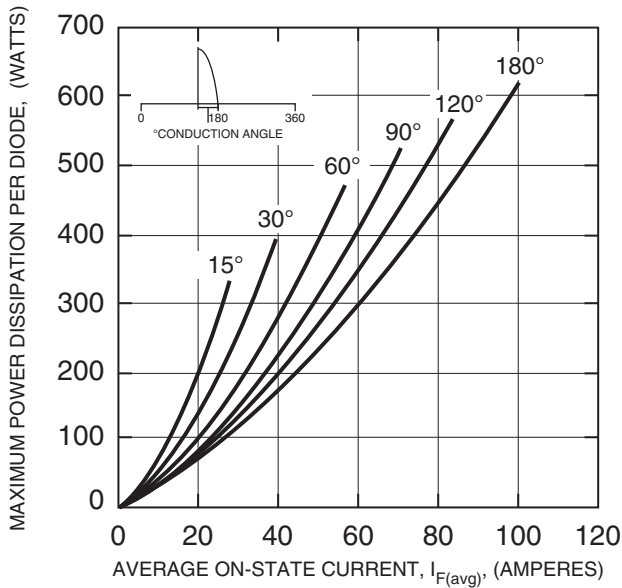
**MAXIMUM ON-STATE FORWARD
VOLTAGE DROP CHARACTERISTICS
($T_J = 150^\circ\text{C}$)**



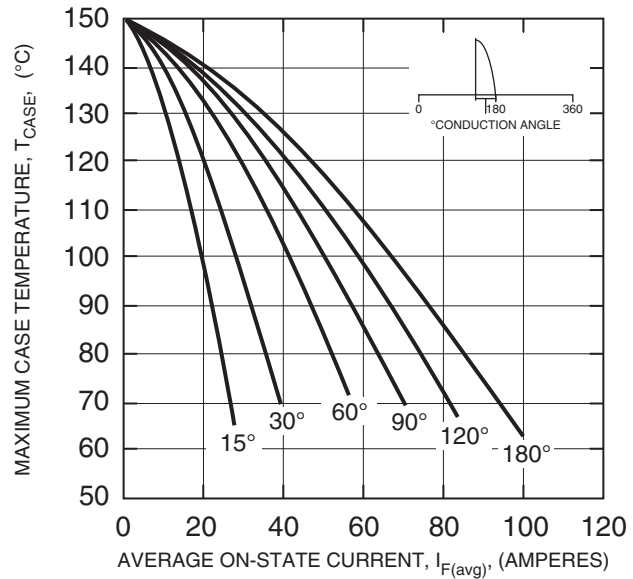
**MAXIMUM TRANSIENT THERMAL
IMPEDANCE CHARACTERISTICS
(JUNCTION TO CASE)**



**MAXIMUM ON-STATE
POWER DISSIPATION
(SINUSOIDAL WAVEFORM)**



**MAXIMUM ALLOWABLE
CASE TEMPERATURE
(SINUSOIDAL WAVEFORM)**



QR_3310003

Fast Recovery Diode Module

100 Amperes/3300 Volts

