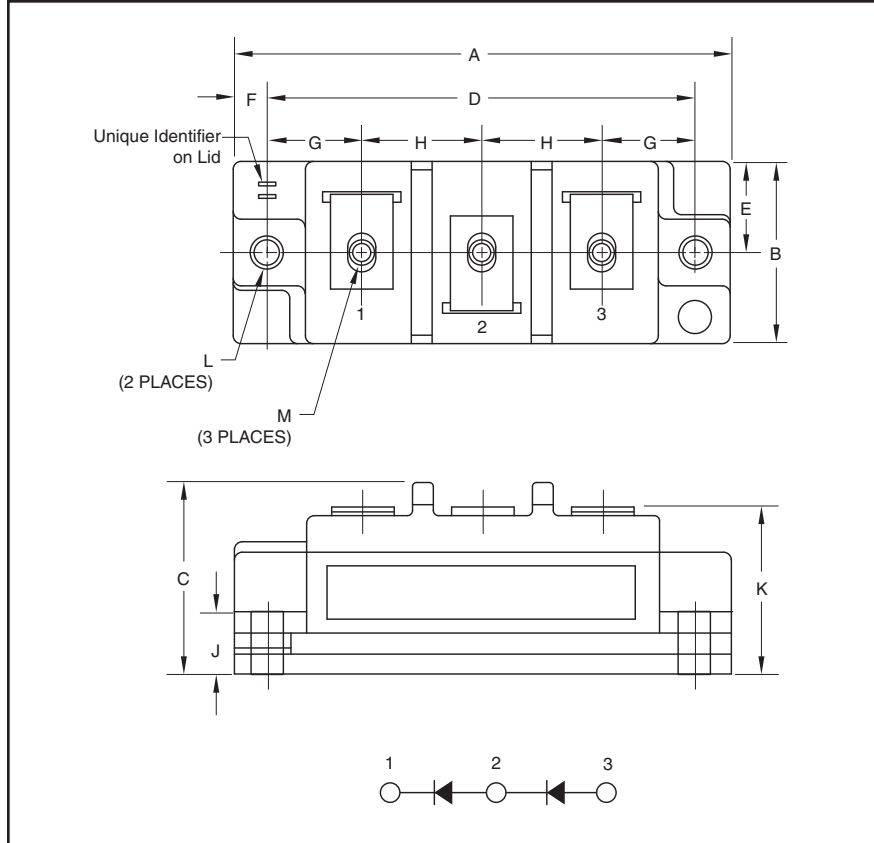


Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwrx.com

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	5.5
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:

- ☐ Aluminum Nitride (AlN) Ceramic Substrate for Low Thermal Impedance
- ☐ Copper Baseplate
- ☐ Fast Recovery Time (1.2 μ s 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

QRD3310005
Fast Recovery Diode Module

100 Amperes/3300 Volts

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

Ratings	Symbol	QRD3310005	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	$T_C = 80\text{ }^{\circ}\text{C}$	$I_{F(AV)}$	86 Amperes
	$T_C = 63\text{ }^{\circ}\text{C}$	$I_{F(AV)}$	100 Amperes
	$T_C = 25\text{ }^{\circ}\text{C}$	$I_{F(AV)}$	127 Amperes
Peak Half Cycle Non-Repetitive Surge Current ($t = 8.3\text{ms}$, 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 ($t = 8.3\text{ms}$, 100% V_{RRM} Reapplied)	I^2t	11620	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, #10-32 Mounting Screw	—	26	in-lb
Maximum Mounting Torque, #10-32 Terminal Screw	—	26	in-lb
Module Weight (Typical)	—	250	Grams
V Isolation (60 Hz, Circuit to Base, All Terminals Shorted, $t = 1\text{ sec.}$)	V_{RMS}	6000	Volts

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

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

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