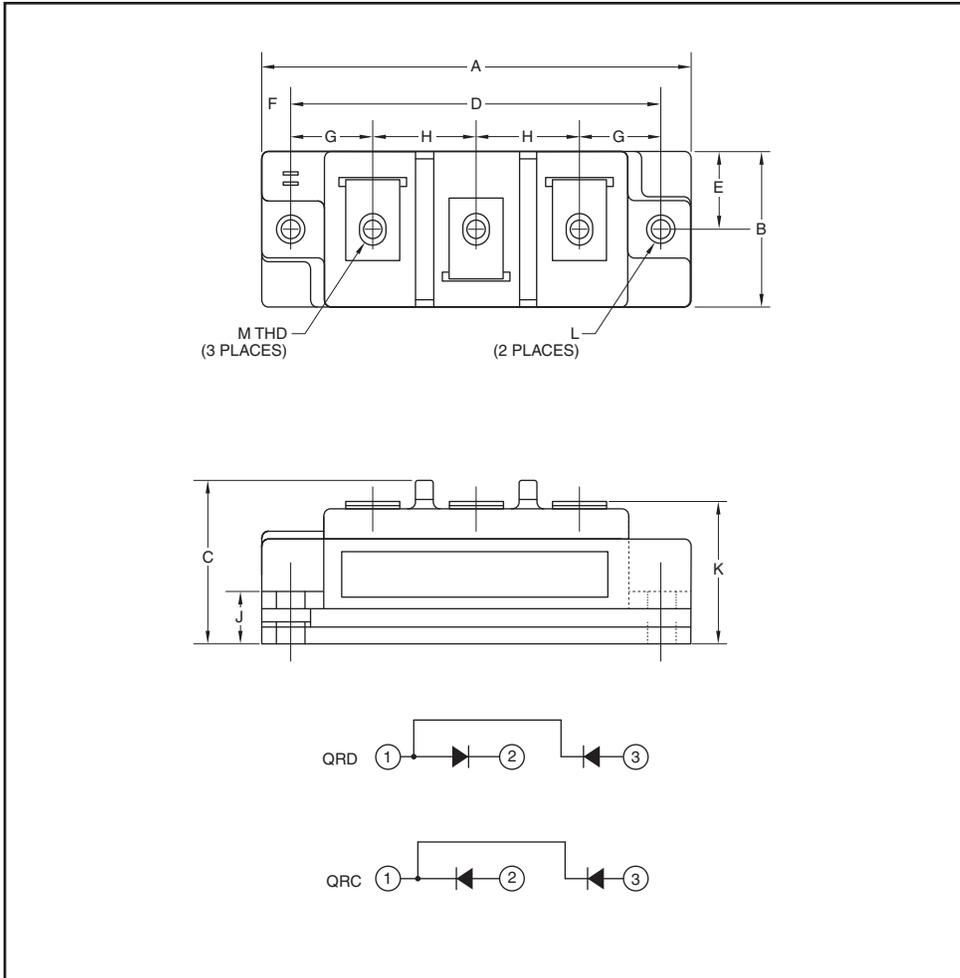


## Fast Recovery Diode Module 100 Amperes/3300 Volts



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:

- Aluminum Nitride (AlN) Ceramic Substrate for Low Thermal Impedance
- Copper Baseplate
- Fast Recovery Time (1.2  $\mu$ s max.)
- Industry Standard Packages Allow Common Bus Work to Complementary High Isolation Diodes
- No Additional Insulation Components Required

### Applications:

- Diodes for 18-24 Pulse Front End Rectifiers in 10.2 KV Isolation
- High Voltage Power Supplies
- Medium Voltage Drives
- Motor Drives
- Traction

**QR\_3310001**  
**Fast Recovery Diode Module**  
 100 Amperes/3300 Volts

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

Ratings	Symbol	QRD3310001	Units
		QRC3310001	
Repetitive Peak Reverse Blocking Voltage	$V_{RRM}$	3300	Volts
Non-Repetitive Peak Reverse Blocking Voltage	$V_{RSM}$	$V_{RRM} + 100$	Volts
Average Forward Current	$T_C = 80^\circ\text{C}$	$I_{F(av)}$	86 Amperes
	$T_C = 63^\circ\text{C}$	$I_{F(av)}$	100 Amperes
	$T_C = 25^\circ\text{C}$	$I_{F(av)}$	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**

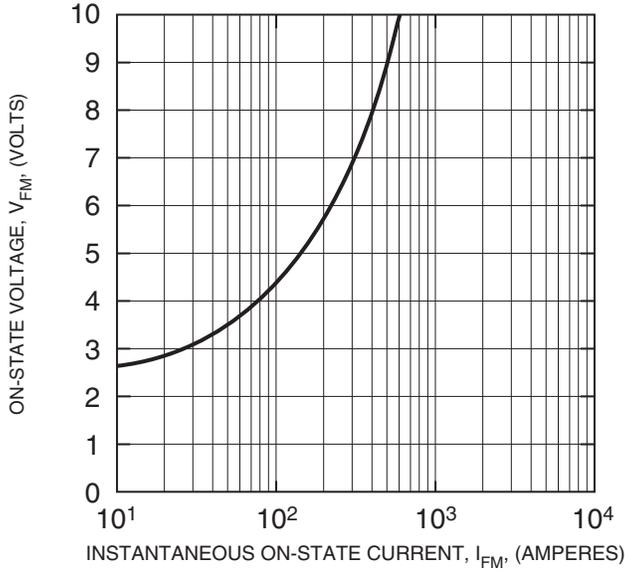
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Peak Reverse Leakage Current	$I_{RRM}$	Rated $V_{RRM}$	—	—	5	mA
Peak On-State Voltage	$V_{FM}$	$I_F = 100\text{A}$	—	3.3	4.3	Volts
Reverse Recovery Time	$t_{rr}$	$I_F = 100\text{A}$ , $di/dt = -200\text{A}/\mu\text{s}$	—	—	1.2	$\mu\text{s}$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

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

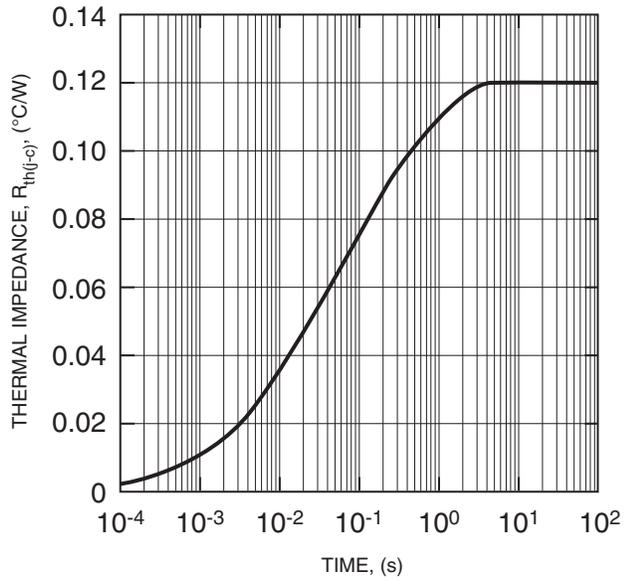
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{th(j-c)Q}$	Per Diode	—	—	0.12	$^\circ\text{C}/\text{W}$
Thermal Resistance, Case to Sink Lubricated	$R_{th(c-s)Q}$	Per Module	—	—	0.05	$^\circ\text{C}/\text{W}$

QR\_3310001  
**Fast Recovery Diode Module**  
 100 Amperes/3300 Volts

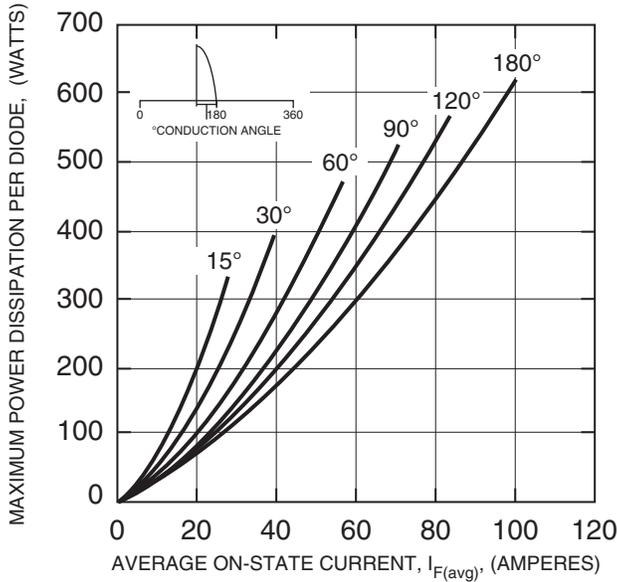
**MAXIMUM ON-STATE FORWARD VOLTAGE DROP CHARACTERISTICS**  
 $(T_j = 150^\circ\text{C})$



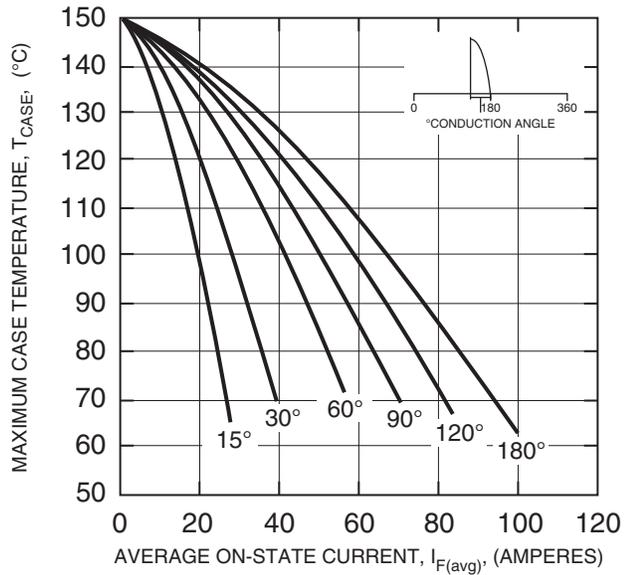
**MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS**  
 (JUNCTION TO CASE)



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



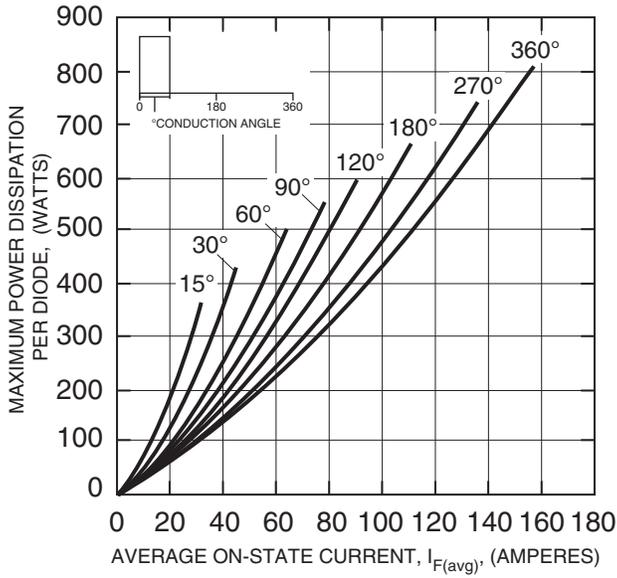
**MAXIMUM ALLOWABLE CASE TEMPERATURE**  
 (SINUSOIDAL WAVEFORM)



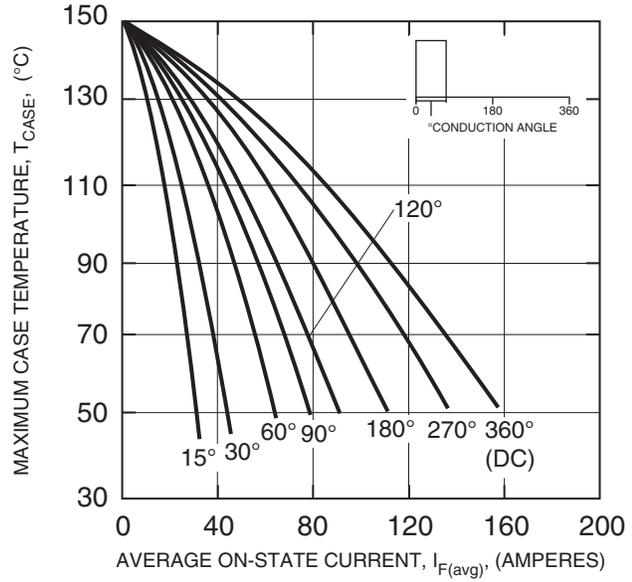
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QR\_3310001  
**Fast Recovery Diode Module**  
 100 Amperes/3300 Volts

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



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



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