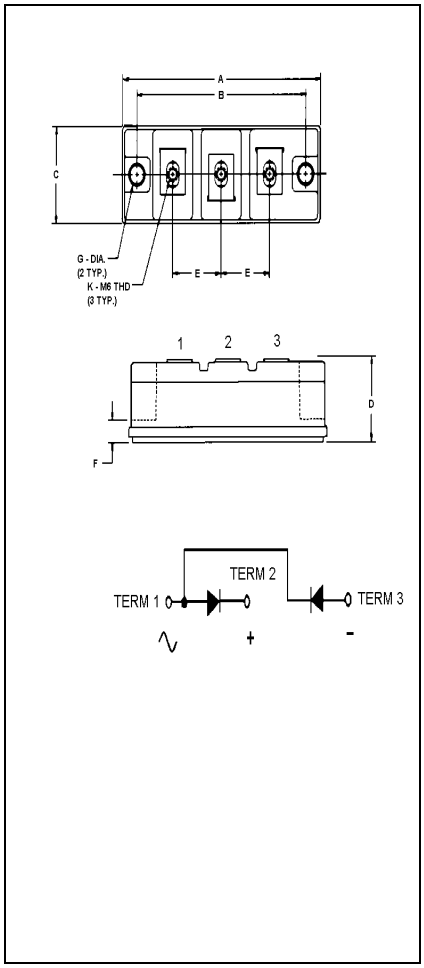
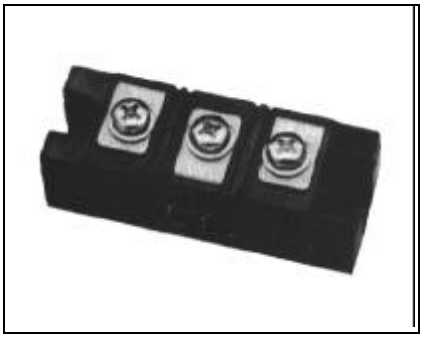
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (724) 925-7272

POW-R-BLOK™ Dual DIODE Module
120 Amperes / Up to 2400 Volts





Description:
Powerex Dual Diode Modules are designed for use in applications requiring rectification and isolated packaging. The modules are isolated for easy mounting with other components on a common heatsink.

Features:
- Electrically Isolated Heatsinking
- Metal Baseplate
- Low Thermal Impedance for Improved Current Capability
- UL Recognition Pending

Applications:
- Battery Supplies
- Bridge Circuits
- AC & DC Motor Control
- Rectifiers

Dimensions

Dimension	Inches		Metric	
	Min.	Max.	Min.	Max.
A	3.681	3.721	93.50	94.51
B	3.145	3.155	79.88	80.14
C	1.329	1.349	33.76	34.26
D	1.160	1.200	29.51	30.53
E	.901	.911	22.88	23.14
F	.305	.325	7.75	8.26
K			M6 x 0.8	
GØ	.251	.261	6.38	6.63

Note: Dimensions are for reference only.

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QRD2412001
Diode POW-R-BLOK™ Modules
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Absolute Maximum Ratings

Characteristics	Conditions	Symbol		Units
Repetitive Peak Reverse Blocking Voltage		V_{RRM}	up to 2400	V
Non-Repetitive Peak Reverse Blocking Voltage		V_{RSM}	V_{RRM} + 100	V
RMS Forward Current		$I_{F(RMS)}$	195	A
Average Forward Current	180° Conduction, T_C=106°C	$I_{F(AV)}$	120	A
Peak Half Cycle Non-Repetitive Surge Current	t = 8.3mS, 100%V_{RRM} reapplied	I_{FSM}	3500	A
Peak Half Cycle Non-Repetitive Surge Current	t = 10mS, 100%V_{RRM} reapplied	I_{FSM}	3350	A
I^2t for Fusing for One Cycle	t = 8.3mS, 100%V_{RRM} reapplied	I^2t	52,000	A^2-sec
I^2t for Fusing for One Cycle	t = 10mS, 100%V_{RRM} reapplied	I^2t	56,000	A^2-sec
Operating Junction Temperature		T_J	-40 to +150	°C
Storage Temperature		T_{stg}	-40 to +150	°C
Maximum Mounting Torque, M6 Mounting Screw	- -	- -	4 to 6	Nm
Maximum Terminal Torque, M6 Terminal Screw	- -	- -	4 to 6	Nm
Module Weight, Typical	- -	- -	500 17.8	g oz
V Isolation		V_{RMS}	6000	Vrms

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Electrical and Thermal Characteristics, T_J=25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max	Units
Peak Reverse Leakage Current	I_{RRM}	T_J=150, Rated V_{RRM}			50	mA
Peak On-State Voltage	V_{FM}	I_{FM}=500A			1.55	V
Threshold Voltage, Low-level Slope Resistance, Low-level	$V_{(TO)1}$ r_{T1}	T_J = 150°C, I = 15%$I_{F(AV)}$ to $\pi I_{F(AV)}$				V mΩ
Threshold Voltage, High-level Slope Resistance, High-level	$V_{(TO)2}$ r_{T2}	T_J = 150°C, I = $\pi I_{F(AV)}$ to I_{FSM}				V mΩ
V_{FM} Coefficients, Full Range		T_J = 150°C, I = 15%$I_{F(AV)}$ to I_{FSM} V_{FM}=A + B Ln I_{FM}+ C I_{FM}+ D Sqrt I_{FM}		A = 0.9591 B = -3.377 C = 9.9197 D = 5.3171		

Thermal Characteristics

Characteristics	Symbol		Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{\Theta JC}$	Per Module, both conducting Per Diode, both conducting	------	------	0.10 0.20	°C/W °C/W
Thermal Resistance, Case to Sink Lubricated	$R_{\Theta CS}$	Per Module	------	------	0.035	°C/W

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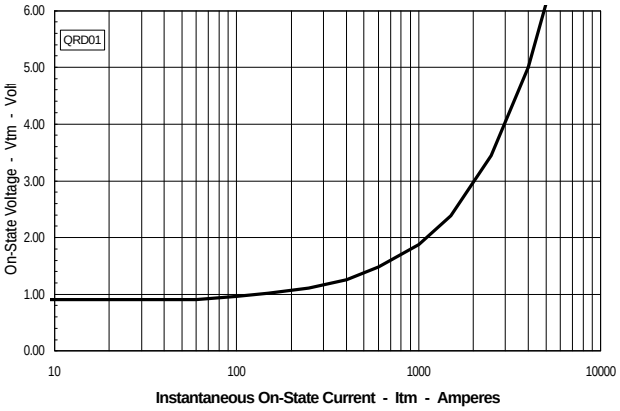
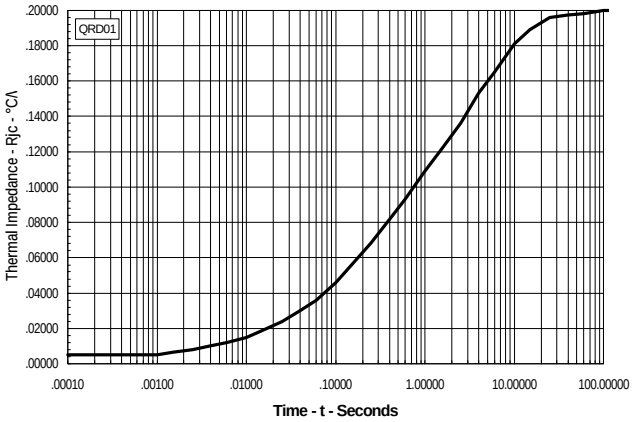
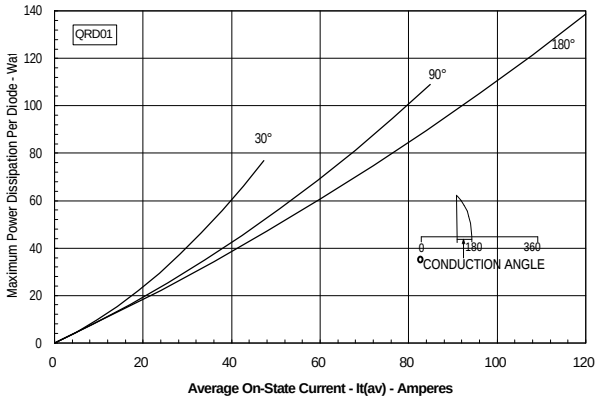
Maximum On-State Forward Voltage Drop
(Tj = 150 °C)



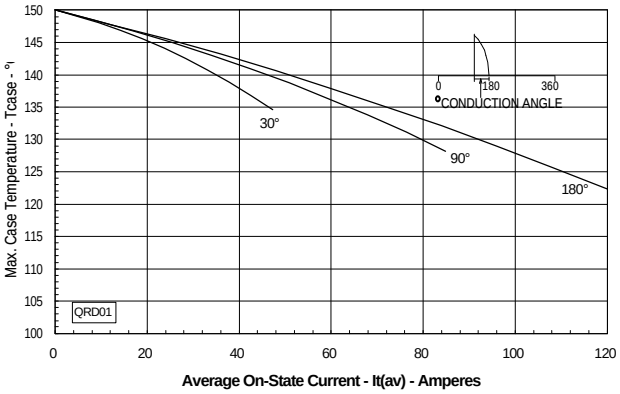
Maximum Transient Thermal Impedance
(Junction to Case)



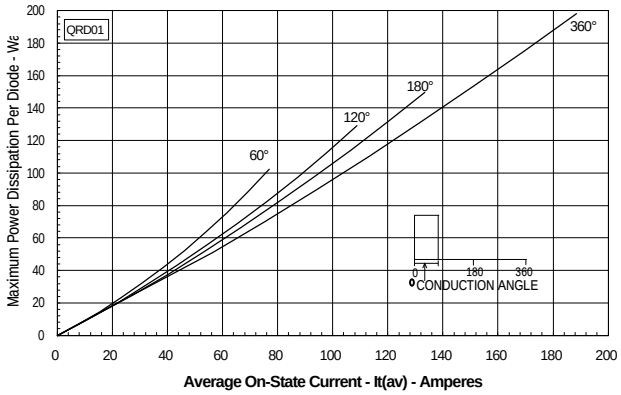
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



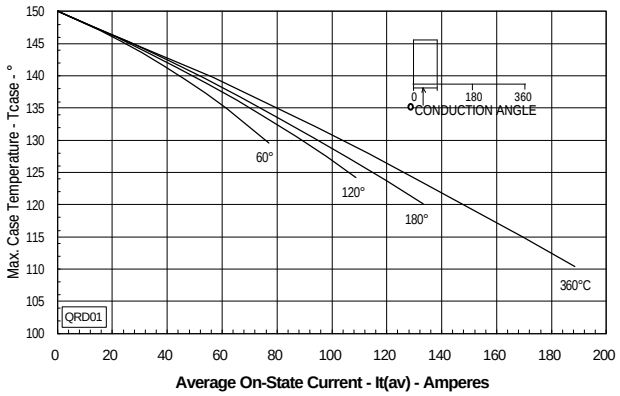
Maximum Allowable Case Temperature
(Sinusoidal Waveform)



Maximum On-State Power Dissipation
(Rectangular Waveform)



Maximum Allowable Case Temperature
(Rectangular Waveform)



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