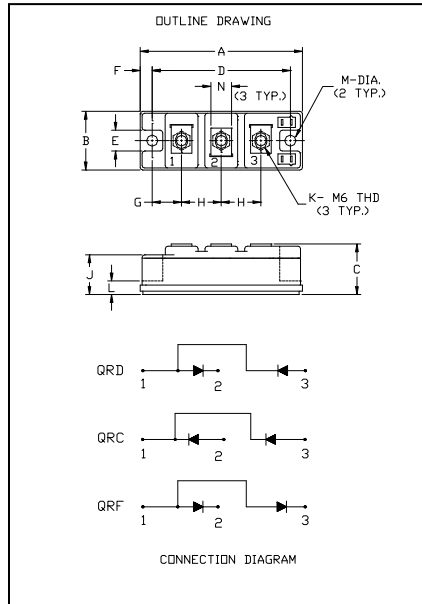




QR_1220T30
Fast Recovery Diode Module

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
- Isolated Mounting
- Metal Baseplate
- Low Thermal Impedance
- 3000 V isolating voltage

Applications:

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

Dimensions	Inches	Millimeters
A	3.70	94.0
B	1.34	34.0
C	1.18	30.0
D	3.15	80.0
E	0.50	12.7
F	0.28	7.0
G	0.67	17.0
H	0.91	23.0
J	0.91	23.0
K	M6X1.0	M6X1.0
L	0.31	8.0
M	0.256 Dia.	6.5 Dia.
N	0.47	12.0

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

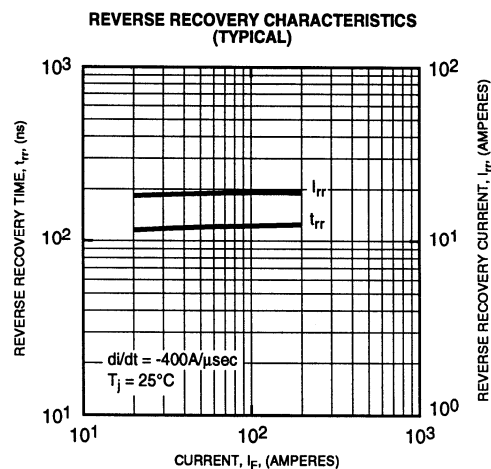
			QRD1220T30	
			QRC1220T30	
Characteristics	Conditions	Symbol	QRF1220T30	Units
Repetitive Peak Reverse Blocking Voltage	-	V _{RRM}	1200	Volts
Non-Repetitive Peak Reverse Blocking Voltage	-	V _{RSM}	V _{RRM} + 100	Volts
Average Forward Current	180° Conduction, Tc=80°C	I _{F(AV)}	99	Amperes
	180° Conduction, Tc=25°C		149	Amperes
Peak Half Cycle Non-Repetitive Surge Current	t = 8.3mS, 100%V _{RRM} Reapplied	I _{FSM}	1670	Amperes
I ² t for Fusing for One Cycle	t = 8.3mS, 100%V _{RRM} Reapplied	I ² t	11620	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	-	-	26	In.-lb.
Maximum Terminal Torque, M6 Terminal Screw	-	-	26	In.-lb.
Module Weight (Typical)	-	-	220	Grams
V Isolation	60 Hz, circuit to base, all terminals shorted, t = 60 sec	V _{RMS}	3000	Volts

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

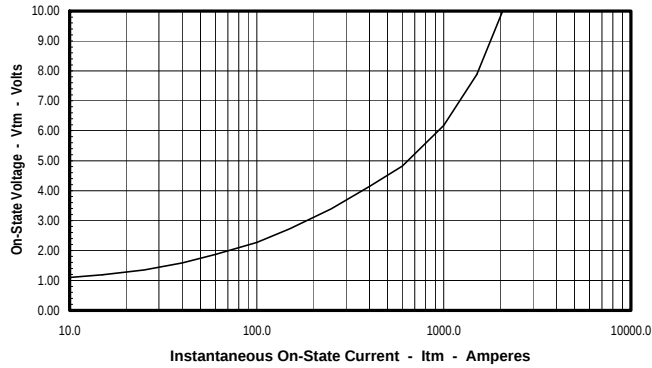
Characteristics	Symbol		Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Per Diode	-	-	0.18	$^{\circ}\text{C/Watt}$
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	Per Module	-	-	0.04	$^{\circ}\text{C/Watt}$

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

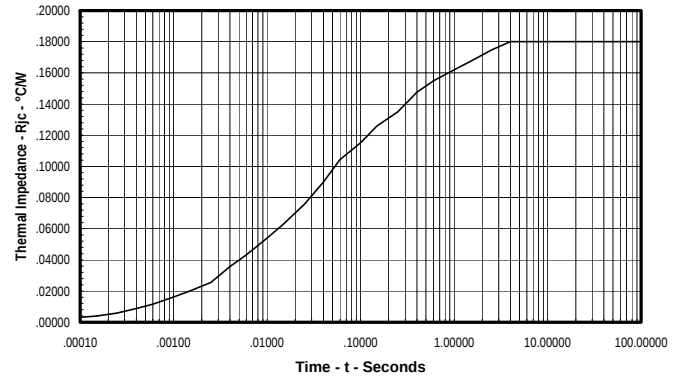
Characteristics	Symbol	Test Conditions	Min.	Typ.	Max	Units
Peak Reverse Leakage Current	I_{RRM}	Rated V_{RRM}	-	-	1	mA
Peak On-State Voltage	V_{FM}	$I_F=200\text{A}$	-	-	3.5	Volts
Reverse Recovery Time	t_{rr}	$I_F = 200\text{A}$, $di/dt = -400\text{A}/\mu\text{s}$	-	-	250	ns
Reverse Recovery Charge	Q_{rr}	$I_F = 200\text{A}$, $di/dt = -400\text{A}/\mu\text{s}$	-	1.49	-	μC



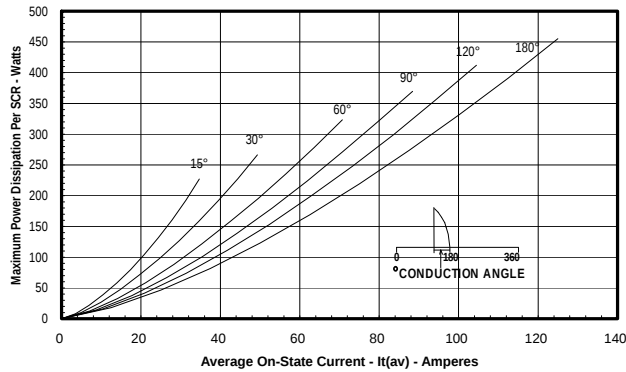
Maximum On-State Forward Voltage Drop
($T_j = 150^\circ\text{C}$)



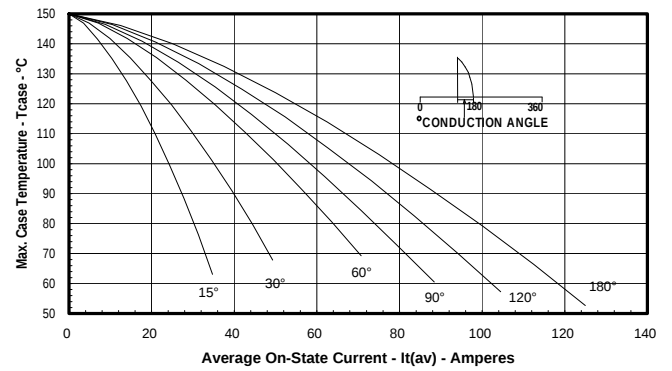
Maximum Transient Thermal Impedance
(Junction to Case)



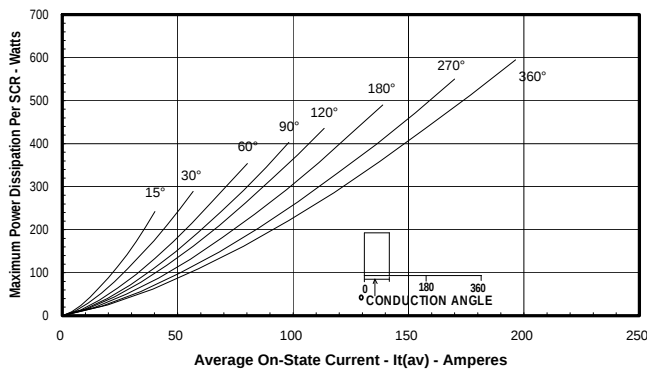
Maximum On-State Power Dissipation
(Sinusoidal Waveform)



Maximum Allowable Case Temperature
(Sinusoidal Waveform)



Maximum On-State Power Dissipation
(Rectangular Waveform)



Maximum Allowable Case Temperature
(Rectangular Waveform)

