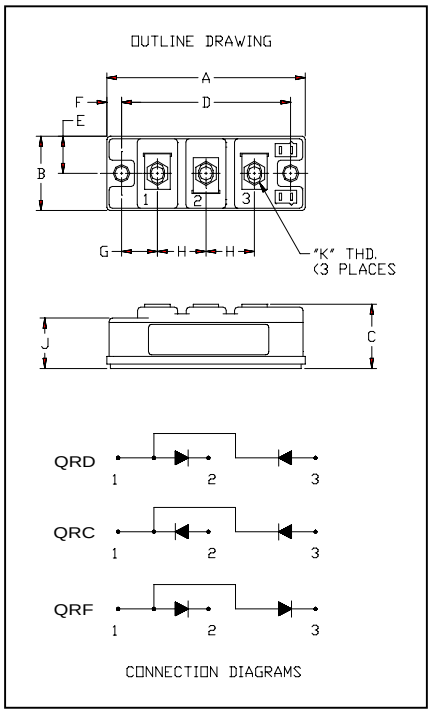
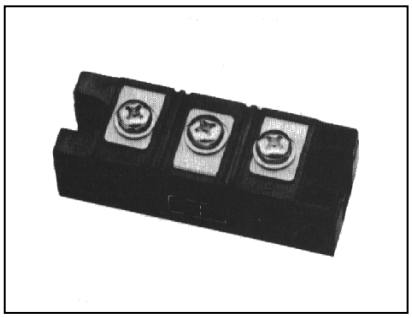
Preliminary

QR_0630T30
300 Amp/600 Volts

Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

Fast Recovery Diode Module
300 Amp/600 Volts





QR_0630T30
Fast Recovery Diode Module
300 Amperes / 600 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
- 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
B	1.34	34
C	1.18	30
D	3.15	80
E	0.67	17
F	0.28	6.99
G	0.67	17.1
H	0.91	23
J	0.91	23
K	M6X1.0	M6X1.0

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Absolute Maximum Ratings, T_J=25°C unless otherwise specified

Characteristics	Conditions	Symbol	QRD0630T30 QRC0630T30 QRF0630T30	Units
Repetitive Peak Reverse Blocking Voltage	-	V_{RRM}	600	Volts
Non-Repetitive Peak Reverse Blocking Voltage	-	V_{RSM}	V_{RRM} + 100	Volts
Average Forward Current	180° Conduction, Tc=25°C	$I_{F(AV)}$	300	Amperes
Peak Half Cycle Non-Repetitive Surge Current	t = 8.3mS, 100%V_{RRM} Reapplied	I_{FSM}	1800	Amperes
I^2t for Fusing for One Cycle	t = 8.3mS, 100%V_{RRM} Reapplied	I^2t	13500	A^2sec
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 = 1 sec	V_{RMS}	3000	Volts

Electrical Characteristics, T_J=25°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=300A	-	-	2.8	Volts
Reverse Recovery Time	trr	I_F = 300A, di/dt = –600A/μs	-	-	110	ns
Reverse Recovery Charge	Qrr	I_F =300A, di/dt = –600A/μs	-	0.81	-	μC

Thermal Characteristics, T_J=25°C unless otherwise specified

Characteristics	Symbol		Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{\Theta JC}$	Per Diode	-	-	0.24	°C/Watt
Thermal Resistance, Case to Sink Lubricated	$R_{\Theta CS}$	Per Module	-	-	0.04	°C/Watt

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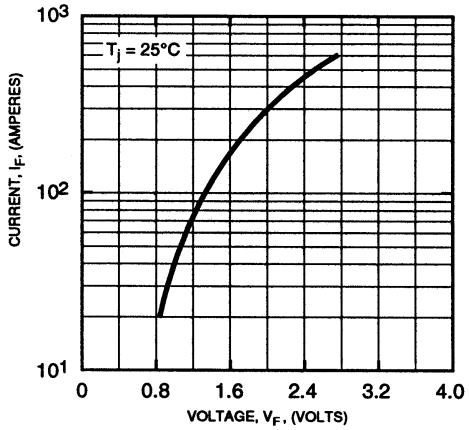
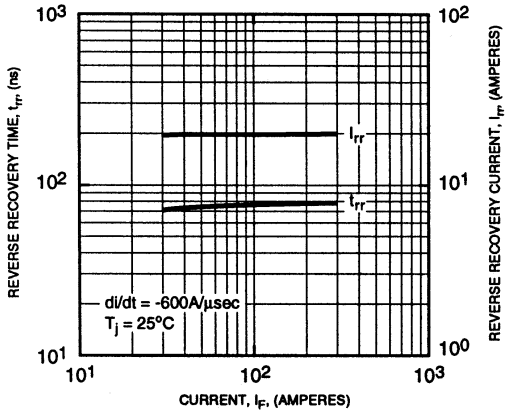
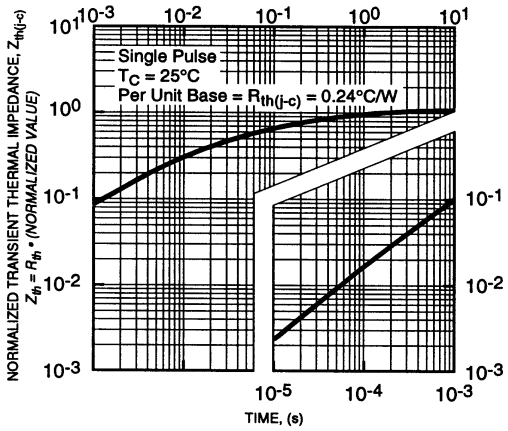
FORWARD CHARACTERISTICS (TYPICAL)



REVERSE RECOVERY CHARACTERISTICS (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS