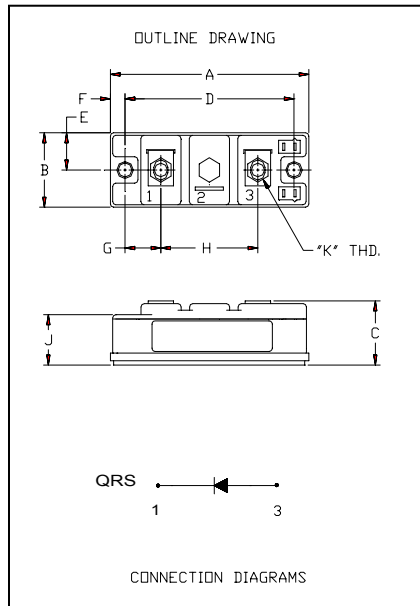


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

### Fast Recovery Diode Module 400 Amp/600 Volts



**QRS0640T30**  
**Fast Recovery Diode Module**  
400 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	1.82	46
J	0.91	23
K	M6X1.0	M6X1.0



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

Characteristics	Conditions	Symbol	QRS0640T30	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, $T_c=25^{\circ}\text{C}$	$I_{F(AV)}$	400	Amperes
Peak Half Cycle Non-Repetitive Surge Current	$t = 8.3\text{mS}$ , 100% $V_{RRM}$ Reapplied	$I_{FSM}$	2400	Amperes
$I^2t$ for Fusing for One Cycle	$t = 8.3\text{mS}$ , 100% $V_{RRM}$ Reapplied	$I^2t$	24000	$\text{A}^2\text{sec}$
Operating Junction Temperature	-	$T_J$	-40 to 150	$^{\circ}\text{C}$
Storage Temperature	-	$T_{STG}$	-40 to 150	$^{\circ}\text{C}$
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, $t = 1 \text{ sec}$	$V_{RMS}$	3000	Volts

### 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	$V_{FM}$	$I_F=400\text{A}$	-	-	2.8	Volts
Reverse Recovery Time	$t_{rr}$	$I_F = 400\text{A}$ , $di/dt = -800\text{A}/\mu\text{s}$	-	-	110	ns
Reverse Recovery Charge	$Q_{rr}$	$I_F = 400\text{A}$ , $di/dt = -800\text{A}/\mu\text{s}$	-	1.08	-	$\mu\text{C}$

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

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

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