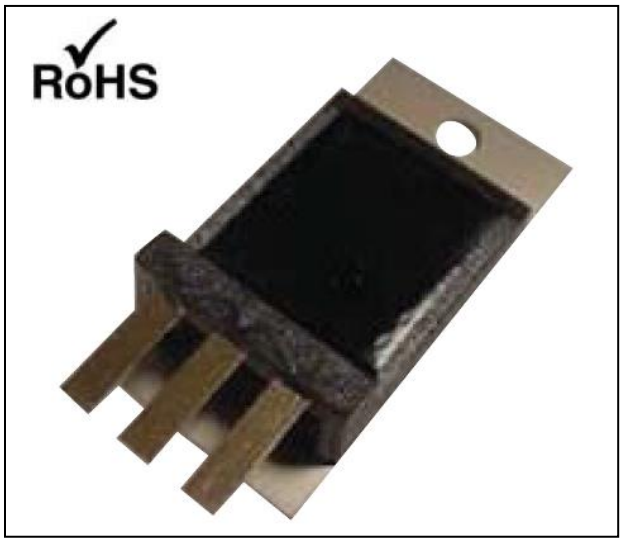
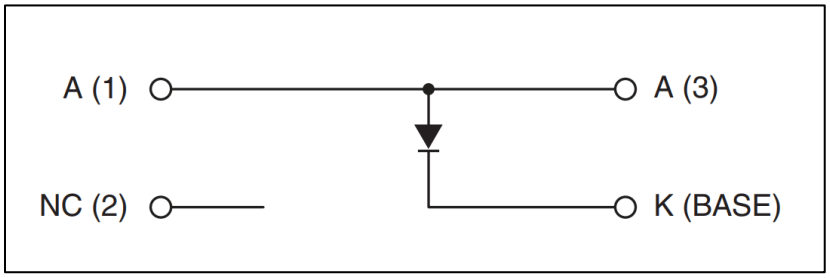
Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwrx.com

Silicon Carbide
Schottky Discrete Diode
100 Amperes / 3300 Volts



SiC Schottky Diode
100 Amperes / 3300 Volts



Description:
Powerex Single Non-isolated Discrete is designed specially for customer high voltage applications.

Features:
☐ Junction Temperature: 150°C
☐ Fast Switching
☐ Low Reverse Recovery
☐ Low Forward Voltage
☐ RoHS Compliant
☐ Non-Isolated Package
☐ Low Thermal Impedance

Applications:
☐ Energy Saving Power Systems
☐ High Frequency Type Power Systems
☐ High Temperature Power Systems
☐ Welding Converters
☐ Motor Control

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

Characteristics	Symbol	QRS3310SA1	Units
Repetitive Peak Reverse Blocking Voltage	V_{RRM}	3300	Volts
Non-Repetitive Peak Reverse Blocking Voltage	V_{RSM}	3300	Volts
DC Current, TC = 80°C (Resistive Load) *2	$I_{F(DC)}$	100	Amperes
Non-Repetitive Forward Surge Current	I_{FSM}	200	Amperes
I^2t for Fusing for One Cycle (t = 8.3mS, 100% VRRM Reapplied)	I^2t	TBD	Amperes
Maximum Power Dissipation (T_C=25°C, T_J< 175°C) *1	P_D	638	Watts
Maximum Junction Temperature	$T_{J\,max}$	150	°C
Operating Junction Temperature, Continuous operation (under switching)	$T_{j\,op}$	-50 to 150	°C
Storage Temperature	T_{stg}	-40 to 125	°C
Mounting Torque, M5 Mounting Screws	—	3.5	Nm
Module Weight (Typical)	—	21	Grams

*1 Case temperature (T_C) and heat sink temperature (T_S) are defined on the each surface (mounting side) of base plate and heat sink under the chips.
*2 Pulse width and repetition rate should be such that device junction temperature (T_J) does not exceed $T_{J\,(MAX)}$ rating.

DC Characteristics, T_J=25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Leakage Current	I_{RRM}	Rated V_{RRM}	-	-	1.0	mA
Forward Voltage (Chip)	V_{FM}	I_F=100A, T_J = 25°C	-	2.02	-	Volts
		I_F=100A, T_J = 150°C	-	2.41	-	Volts
Total Capacitive Charge	Q_C	V_R=1800V	-	1.47	-	µC

Thermal Resistance Characteristics

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	Per Diode	-	-	0.093	°C/W
Contact Thermal Resistance	$R_{th(c-s)}$	Per Module, Thermal Grease Applied, λ=0.9 W/m-K	-	0.10	-	°C/W

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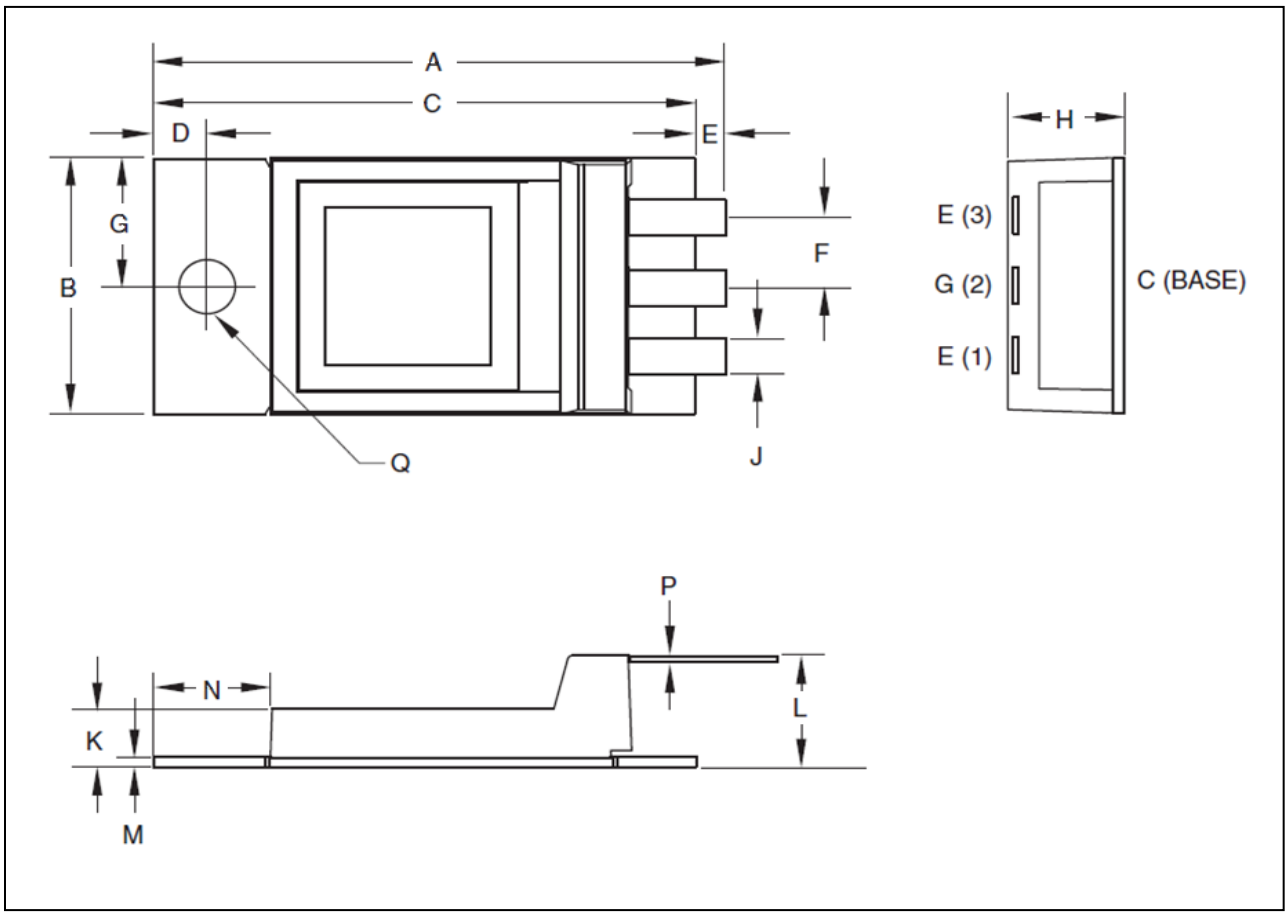

Dimensions	Inches	Millimeters
A	2.11	53.6
B	0.98	25.0
C	2.01	51.0
D	0.2	5.0
E.	0.1	2.5
F	0.27	6.9
G	0.49	12.5
H	0.46 Max.	11.8 Max.

Dimensions	Inches	Millimeters
J	0.14	3.6
K	0.22	5.7
L	0.43	10.8
M	0.04	1.0
N	0.43	10.9
P	0.02	0.5
Q	0.21 Dia.	5.3 Dia.