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**Silicon Carbide
Schottky Discrete Diode
100 Amperes / 3300 Volts**



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100 Amperes / 3300 Volts**

Description:

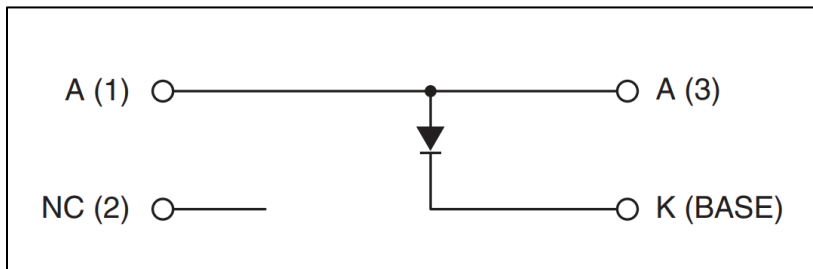
Powerex Single Non-isolated Discrete is designed specially for customer high voltage applications.

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



Absolute Maximum Ratings, $T_j = 25^\circ\text{C}$ 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, $T_C = 80^\circ\text{C}$ (Resistive Load) *2	$I_{F(DC)}$	100	Amperes
Non-Repetitive Forward Surge Current	I_{FSM}	200	Amperes
I^2t for Fusing for One Cycle ($t = 8.3\text{mS}$, 100% VRRM Reapplied)	I^2t	TBD	Amperes
Maximum Power Dissipation ($T_C=25^\circ\text{C}$, $T_J < 175^\circ\text{C}$) *1	P_D	638	Watts
Maximum Junction Temperature	T_{Jmax}	150	$^\circ\text{C}$
Operating Junction Temperature, Continuous operation (under switching)	T_{jop}	-50 to 150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 to 125	$^\circ\text{C}$
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.

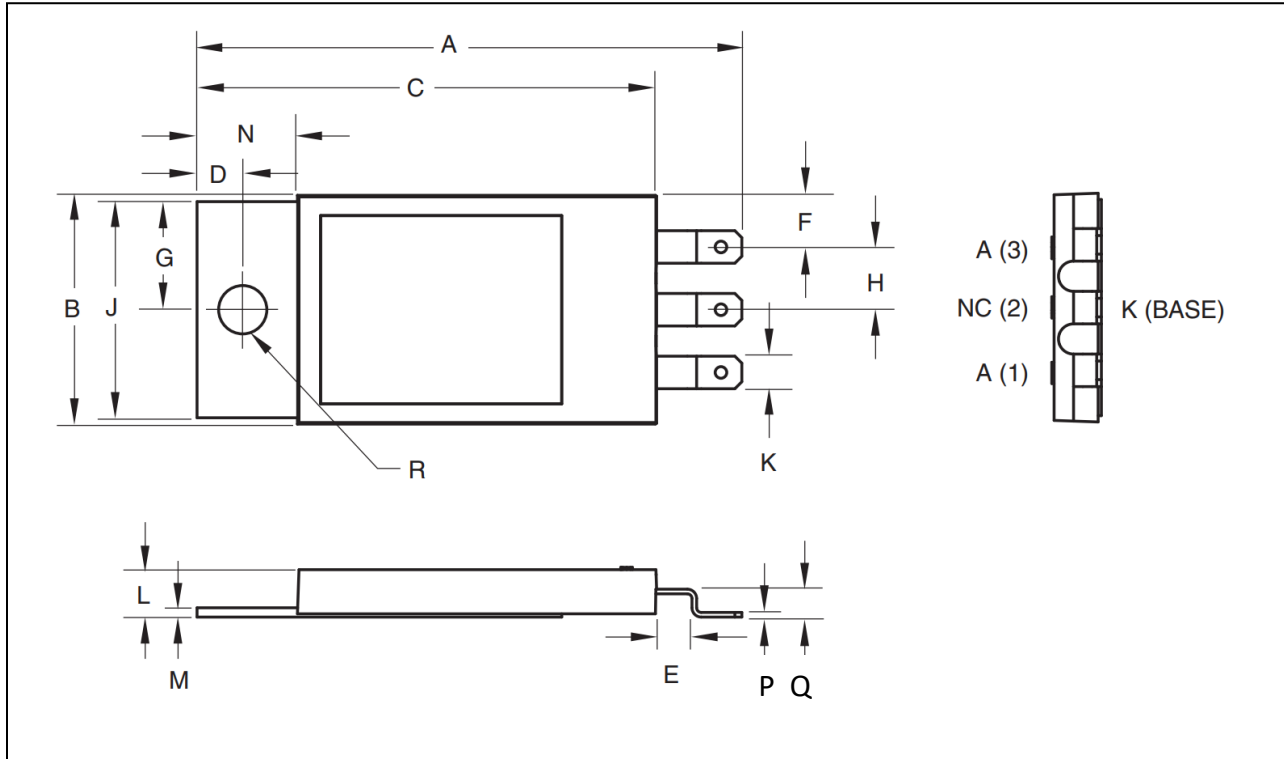
*2 Pulse width and repetition rate should be such that device junction temperature (T_J) does not exceed $T_{J(MAX)}$ rating.

DC Characteristics, $T_J=25^\circ\text{C}$ 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}	$I_F=100\text{A}$, $T_J = 25^\circ\text{C}$	-	2.02	-	Volts
		$I_F=100\text{A}$, $T_J = 150^\circ\text{C}$	-	2.41	-	Volts
Total Capacitive Charge	Q_C	$V_R=1800\text{V}$	-	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	$^\circ\text{C/W}$
Contact Thermal Resistance	$R_{th(c-s)}$	Per Module, Thermal Grease Applied, $\lambda=0.9\text{ W/m-K}$	-	0.10	-	$^\circ\text{C/W}$



Dimensions	Inches	Millimeters	Dimensions	Inches	Millimeters
A	2.35	59.7	J	0.93	23.6
B	0.98	25.0	K	0.14	3.6
C	1.98	50.3	L	0.20	5.2
D	0.197	5.0	M	0.40	1.0
E	0.22	5.5	N	0.43	11.0
F	0.22	5.6	P	0.20	0.5
G	0.465	11.8	Q	0.12	3.0
H	0.27	6.9	R	0.208 Dia.	5.3 Dia.