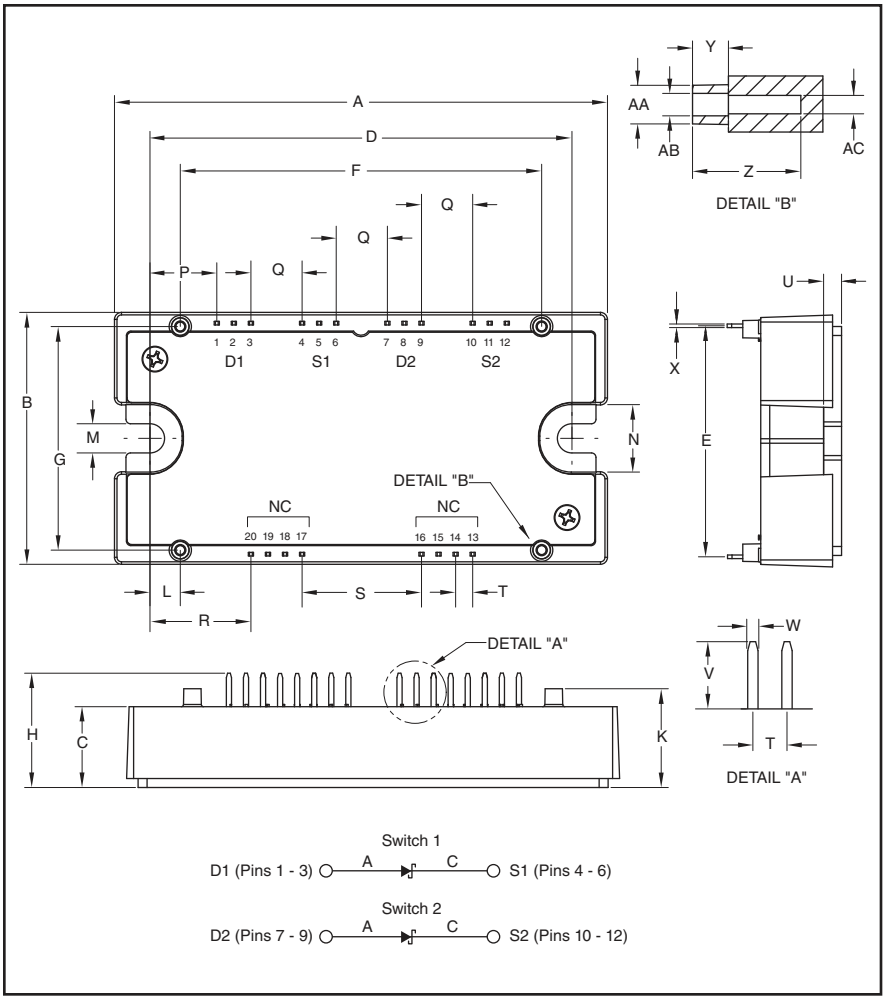
Powerex, Inc., 173 Pavilion Lane, Youngwood, Pennsylvania 15697 (724) 925-7272
www.pwrx.com

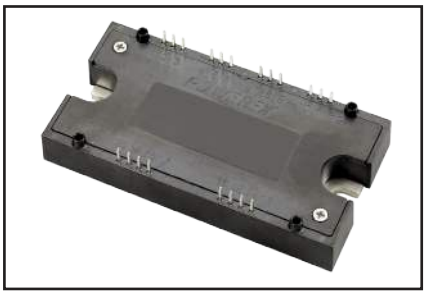
Split Dual SiC Super Fast Diode Module
100 Amperes/1200 Volts



Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	4.32	109.8
B	2.21	56.1
C	0.71	18.0
D	3.70±0.02	94.0±0.5
E	2.026	51.46
F	3.17	80.5
G	1.96	49.8
H	1.00	25.5
K	0.87	22.0
L	0.266	6.75
M	0.26	6.5
N	0.59	15.0
P	0.586	14.89

Dimensions	Inches	Millimeters
Q	0.449	11.40
R	0.885	22.49
S	1.047	26.6
T	0.15	3.80
U	0.16	4.0
V	0.30	7.5
W	0.045	1.15
X	0.03	0.8
Y	0.16	4.0
Z	0.47	12.1
AA	0.17 Dia.	4.3 Dia.
AB	0.10 Dia.	2.5 Dia.
AC	0.08 Dia.	2.1 Dia.



Description:

Powerex Super Fast Recovery Dual Diode Modules are designed for use in applications requiring fast switching. The modules are isolated for easy mounting with other components on common heatsinks.

Features:

- ☐ Super Fast Switching Time
- ☐ RoHS Compliant
- ☐ Isolated Mounting
- ☐ Copper Baseplate
- ☐ Low Thermal Impedance
- ☐ 2500V Isolating Voltage
- ☐ Zero Reverse Recovery

Applications:

- ☐ Free Wheeling
- ☐ Welding and Plasma Cutting Machine

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QRD1210004
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Absolute Maximum Ratings, T_j = 25 °C unless otherwise specified

Ratings	Symbol	QRD1210004	Units
Repetitive Peak Reverse Blocking Voltage	V_{RRM}	1200	Volts
Non-Repetitive Peak Reverse Blocking Voltage	V_{RSM}	V_{RRM} + 100	Volts
DC Current, T_C = 80°C (Resistive load)	$I_{F(DC)}$	100	Amperes
Peak Half Cycle Non-repetitive Surge Current (t = 8.3mS, 100% V_{RRM} Reapplied)	I_{FSM}	TBD	Amperes
I^2t for Fusing for One Cycle (t = 8.3mS, 100% V_{RRM} Reapplied)	I^2t	TBD	A^2sec
Operating Junction Temperature	T_j	-40 to 175	°C
Storage Temperature	T_{stg}	-40 to 150	°C
Maximum Mounting Torque, M6 Mounting Screw	—	40	in-lb
Module Weight (Typical)	—	270	Grams
V Isolation (60 Hz, Circuit to Base, All Terminals Shorted, t = 1 sec)	V_{RMS}	2500	Volts

Electrical Characteristics, T_j = 25 °C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Leakage Current	I_{RRM}	T_j = 25 °C, Rated V_{RRM}	—	—	1.0	mA
		T_j = 175 °C, Rated V_{RRM}	—	—	2.0	mA
On-State Voltage	V_{FM}	T_j = 25 °C, I_F = 100A	—	1.5	1.8	Volts
		T_j = 175 °C, I_F = 100A	—	2.2	3.0	Volts

Thermal and Mechanical Characteristics, T_j = 25 °C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case*	$R_{th(j-c)}$ Q	Per Diode	—	—	0.26	°C/W
Contact Thermal Resistance, Case to Sink (Lubricated)*	$R_{th(c-s)}$	Per Module	—	—	0.04	°C/W

*T_C, T_f measured point is just under the chip.

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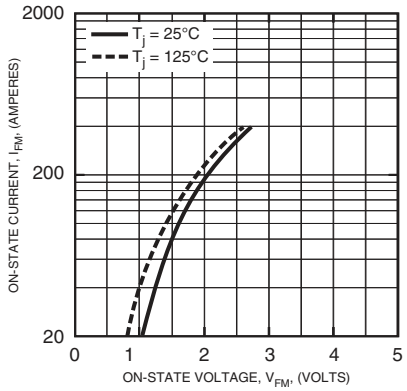
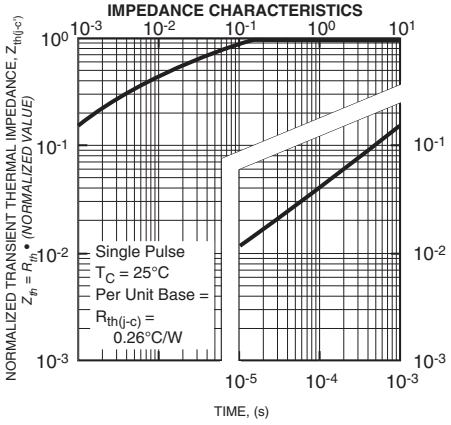
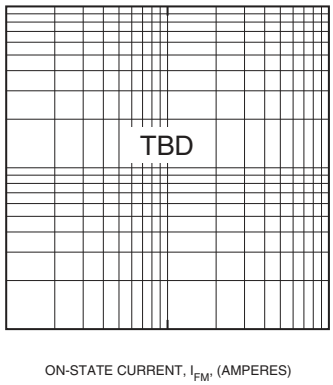
ON-STATE CHARACTERISTICS (TYPICAL)



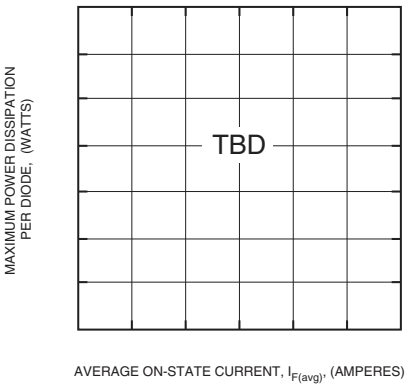
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



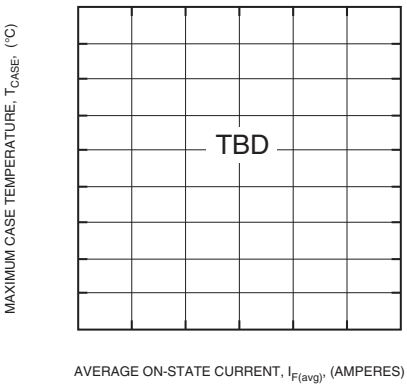
REVERSE RECOVERY SWITCHING LOSS (TYPICAL)



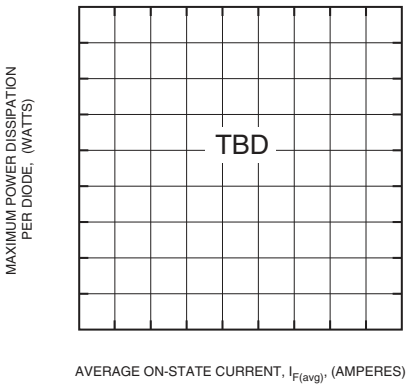
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)