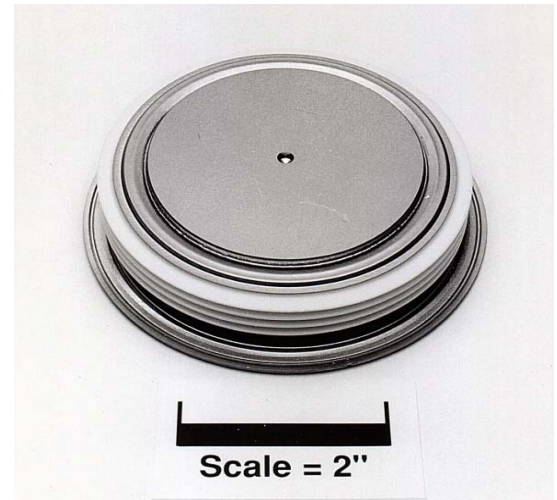
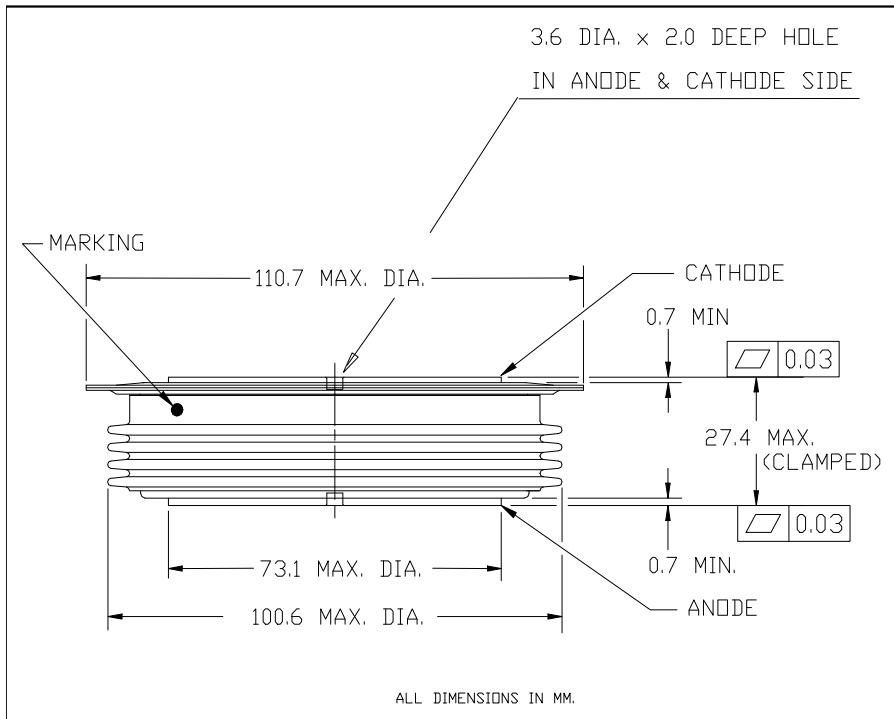




Powerex General Purpose Rectifier Diodes are designed with high blocking voltage capability and low forward voltage drop to minimize conduction losses. These are packaged in hermetic, ceramic Pow-R-Disc packages which can be mounted using commercially available clamps and heatsinks or fully assembled to a variety of air or water cooled heat exchangers.

FEATURES:

- Low On-State Voltage
- Hermetic Ceramic Package
- Excellent Surge and I^2t Ratings

APPLICATIONS:

- DC Power Supplies

ORDERING INFORMATION

Select the complete 10 digit Part Number using the table below.
EXAMPLE: RBS83245XX is a 3200V-4500A General Purpose Diode with a typical reverse recovery time of 25 μ s.

PART	Voltage Rating V_{DRM} - V_{RRM}	Voltage Code	Current Rating I_{tavg}	Current Code	Reverse Recovery t_{RR}	Lead Code
RBS8	3200V	32	4500A	45	XX	
	3000V	30				
	2600V	26			25 μ s typical	
	2400V	24				
	2200V	22				



RBS8_45XX

GENERAL PURPOSE RECTIFIER DIODE

Powerex, Inc., 173 Pavilion Ln, Youngwood, PA 15697-1800 (724)925-7272 www.pwr.com

4500 Amperes 3200 Volts

Absolute Maximum Ratings

Characteristic	Symbol	Rating	Units
Repetitive Peak Reverse Voltage	V_{RRM}	3200	Volts
Non-repetitive Transient Peak Reverse Voltage	V_{RSM}	$V_{RRM} + 100$	Volts
Average On-State Current, $T_C=94^{\circ}\text{C}$	$I_{F(Avg.)}$	4500	A
RMS On-State Current, $T_C=94^{\circ}\text{C}$	$I_{F(RMS)}$	7069	A
Peak One Cycle Surge Current, 60Hz, $V_R=V_{RRM}$	I_{FSM}	67,500	A
Fuse Coordination I^2t , 60Hz	I^2t	1.90E+07	A^2s
Peak One Cycle Surge Current, 50Hz, $V_R=0\text{V}$	I_{FSM}	62,438	A
Fuse Coordination I^2t , 50Hz	I^2t	1.95E+07	A^2s
Peak 3 Cycle Surge Current, 60Hz, $V_R=0\text{V}$	I_{FSM}	76,950	A
Peak 10 Cycle Surge Current, 60Hz, $V_R=0\text{V}$	I_{FSM}	61,763	A
Operating Temperature	T_j	-40 to+175	$^{\circ}\text{C}$
Storage Temperature	$T_{Stg.}$	-50 to+200	$^{\circ}\text{C}$
Approximate Weight		2.5	lb
		1.13	Kg
Mounting Force		6,000 - 10,000	lbs
		26.6 - 44.4	Knewtons

Information presented is based upon manufacturers testing and projected capabilities. This information is subject to change without notice. The manufacturer makes no claim as to suitability for use, reliability, capability or future availability of this product.



RBS8_45XX

GENERAL PURPOSE RECTIFIER DIODE

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4500 Amperes 3200 Volts

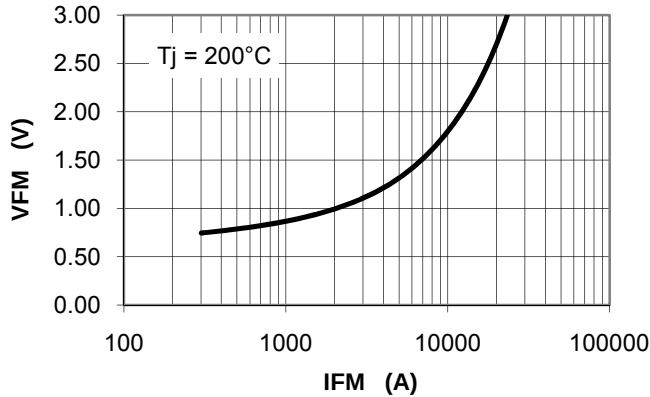
Electrical Characteristics, Tj=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Rating			Units
			min	typ	max	
Repetitive Peak Reverse Leakage Current	I_{RRM}	Tj=175°C, V_{RRM} =Rated			125	ma
Peak On-State Voltage	V_{FM}	Tj=175°C, I_{FM} =2000A			1.00	V
V_{FM} Model, Low Level	V_0	Tj=175°C			0.786	V
$V_{FM} = V_0 + r \cdot I_{FM}$	r	15% $I_{FM} - \pi \cdot I_{FM}$			9.97E-05	Ω
V_{FM} Model, High Level	V_0	Tj=175°C			0.972	V
$V_{FM} = V_0 + r \cdot I_{FM}$	r	$\pi \cdot I_{FM} - I_{FSM}$			8.63E-05	Ω
V_{FM} Model, 4-Term	A	Tj=175°C			0.510	
$V_{FM} = A + B \cdot \ln(I_{FM}) +$	B	15% $I_{FM} - I_{FSM}$			3.10E-02	
$C \cdot (I_{FM}) + D \cdot (I_{FM})^{1/2}$	C				8.00E-05	
	D				2.00E-03	
Reverse Recovery Time	t_{RR}	Tj=25°C, I_{FM} =1500A $di_R/dt = 25 \text{ A}/\mu\text{s}$		25		μs

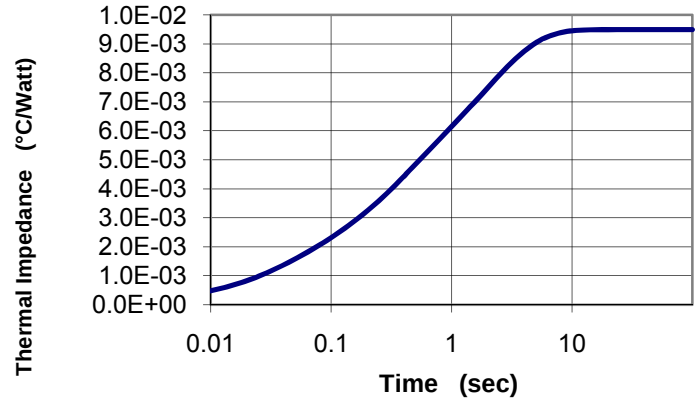
Thermal Characteristics

Characteristic	Symbol	Test Conditions	Rating			Units
			min	typ	max	
Thermal Resistance						
Junction to Case	$R\theta_{jc}$	Double side cooled		0.0085	0.0095	°C/Watt
Case to Sink	$R\theta_{cs}$	Double side cooled		0.0015	0.002	°C/Watt
Thermal Impedance Model	$Z\theta_{jc}$	Double side cooled				
$Z\theta_{jc}(t) = \sum(A(N) \cdot (1 - \exp(-t/\text{Tau}(N))))$						
where: N = 1 2 3 4						
$A(N) = 5.22\text{E-}05 \quad 1.19\text{E-}03 \quad 2.91\text{E-}03 \quad 5.35\text{E-}03$						
$\text{Tau}(N) = 2.65\text{E-}06 \quad 3.43\text{E-}02 \quad 2.74\text{E-}01 \quad 2.03\text{E+}00$						

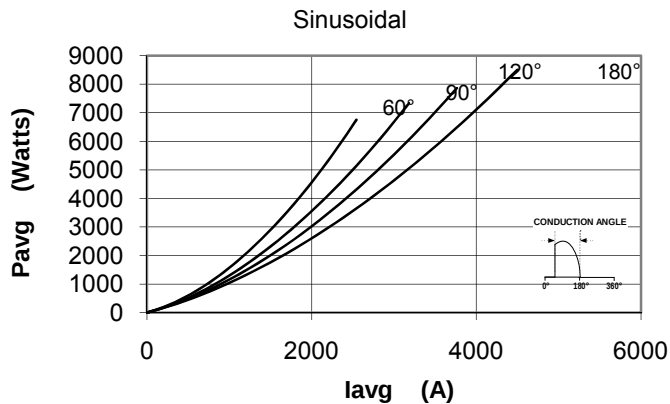
Maximum On-State Voltage Drop



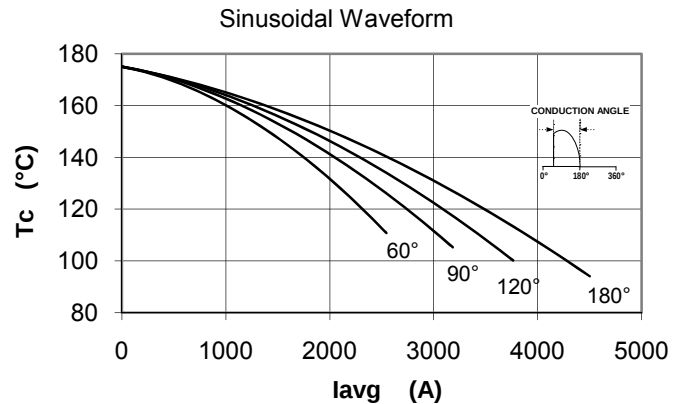
MAXIMUM TRANSIENT THERMAL IMPEDANCE



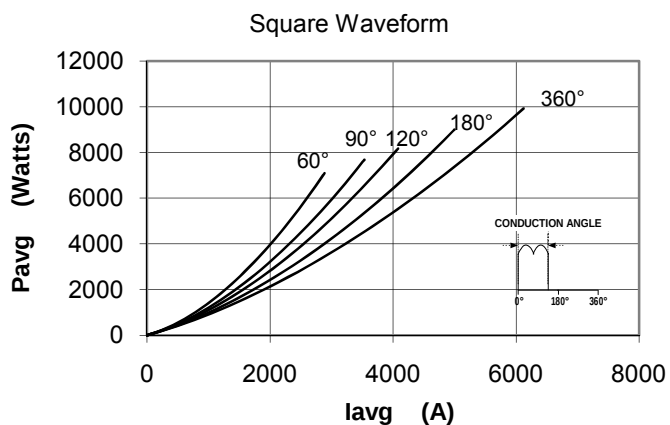
Maximum On-State Power Dissipation



Maximum Allowable Case Temperature



Maximum On-State Power Dissipation



Maximum Allowable Case Temperature

