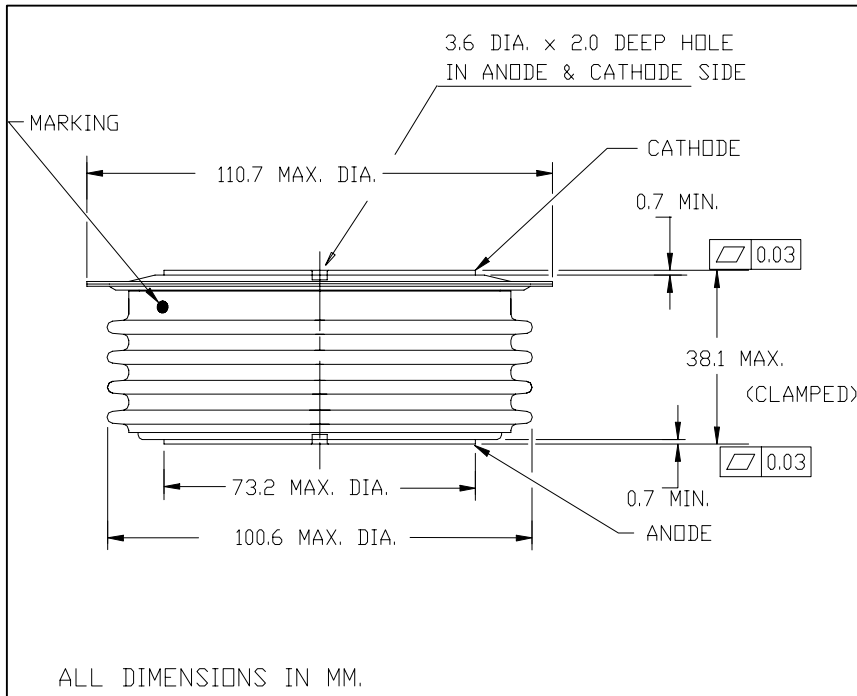




Powerex General Purpose Rectifier Diodes are designed with high blocking voltage capability and low forward voltage drop to minimize conduction losses. These are packaged in hermetic, ceramic Pow-R-Disc packages which can be mounted using commercially available clamps and heatsinks or fully assembled 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
- Input Rectifiers
- Plating Supplies

ORDERING INFORMATION

Select the complete 12 digit Part Number using the table below.
EXAMPLE: RBK81663XXOO is a 1600V-6300A 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
RBK8	1600	16	6300	63	XX	OO
	1400	14				
	1200	12			25 μ s typical	

Revised: 10/3/2005

Absolute Maximum Ratings

Characteristic	Symbol	Rating	Units
Repetitive Peak Reverse Voltage	V_{RRM}	1600	Volts
Average On-State Current, $T_C=100^{\circ}\text{C}$	$I_{F(Avg.)}$	6300	A
RMS On-State Current, $T_C=100^{\circ}\text{C}$	$I_{F(RMS)}$	9896	A
Average On-State Current, $T_C=75^{\circ}\text{C}$	$I_{F(Avg.)}$	7500	A
RMS On-State Current, $T_C=75^{\circ}\text{C}$	$I_{F(RMS)}$	11781	A
Peak One Cycle Surge Current, 60Hz, $V_R=0.6*V_{RRM}$	I_{FSM}	95,000	A
Fuse Coordination I^2t , 60Hz	I^2t	3.76E+07	A^2s
Peak One Cycle Surge Current, 50Hz, $V_R=0V$	I_{FSM}	115,900	A
Fuse Coordination I^2t , 50Hz	I^2t	6.72E+07	A^2s
Operating Temperature	T_J	-40 to+190	$^{\circ}\text{C}$
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

The information on this datasheet is based upon Powerex testing and projected ratings and is subject to change without notice. Powerex makes no implicit or explicit claim to reliability, capability, performance or suitability of this product for a users application. Powerex makes no guarantee of future availability of this product.

**RBK8__63XX****GENERAL PURPOSE RECTIFIER DIODE**

Powerex, Inc., 200 Hillis Street, Youngwood, PA 15697-1800 724 925 7272 WWW.PWRX.COM

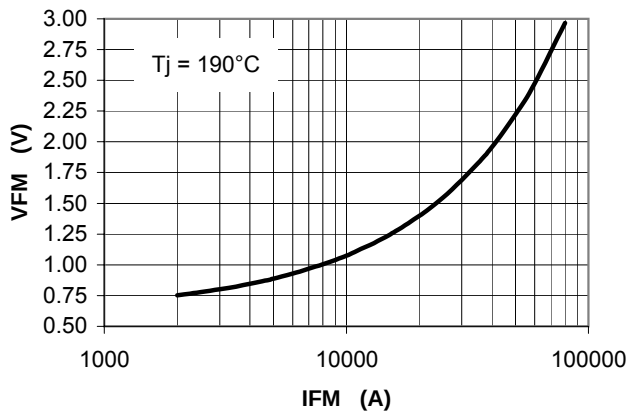
6300 Amperes 1600 Volts**Electrical Characteristics, T_j=25°C unless otherwise specified**

Characteristic	Symbol	Test Conditions	Rating			Units
			min	typ	max	
Repetitive Peak Reverse Leakage Current	I _{RRM}	T _j =190°C, V _{RRM} =Rated		100	150	ma
Peak On-State Voltage	V _{FM}	T _j =190°C, I _{FM} =4000A			0.85	V
V _{FM} Model, Low Level	V ₀	T _j =190°C			0.688	V
V _{FM} = V ₀ + r•I _{FM}	r	15% I _{FM} - π•I _{FM}			3.62E-05	Ω
V _{FM} Model, High Level	V ₀	T _j =190°C			0.920	V
V _{FM} = V ₀ + r•I _{FM}	r	π•I _{FM} - I _{FSM}			2.58E-05	Ω
V _{FM} Model, 4-Term	A	T _j =190°C			0.700	
V _{FM} = A + B•Ln(I _{FM}) +	B	15% I _{FM} - I _{FSM}			-0.0209	
C•(I _{FM}) + D•(I _{FM}) ^{1/2}	C				1.730E-05	
	D				0.00395	
Reverse Recovery Time	t _{RR}	T _j =25°C, I _{FM} =400A di _R /dt = 25 A/μs		25		μs

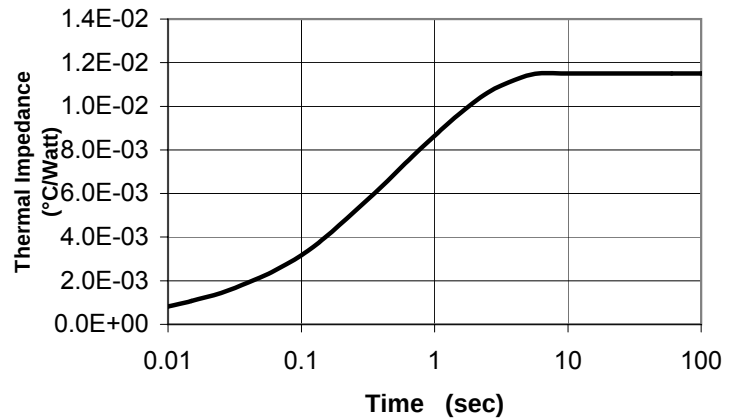
Thermal Characteristics

Characteristic	Symbol	Test Conditions	min	Rating		Units
				typ	max	
Thermal Resistance						
Junction to Case	RΘ _{jc}	Double side cooled		0.010	0.0115	°C/Watt
Case to Sink	RΘ _{cs}	Double side cooled		0.0015	0.002	°C/Watt
Thermal Impedance Model	ZΘ _{jc}	Double side cooled				
ZΘ _{jc} (t) = Σ(A(N)•(1-exp(-t/Tau(N)))) where: N =						
			1	2	3	4
	A(N) =		1.220E-04	8.786E-04	4.154E-03	6.843E-03
	Tau(N) =		5.860E-04	1.409E-02	1.814E-01	1.208E+00

Maximum On-State Voltage Drop

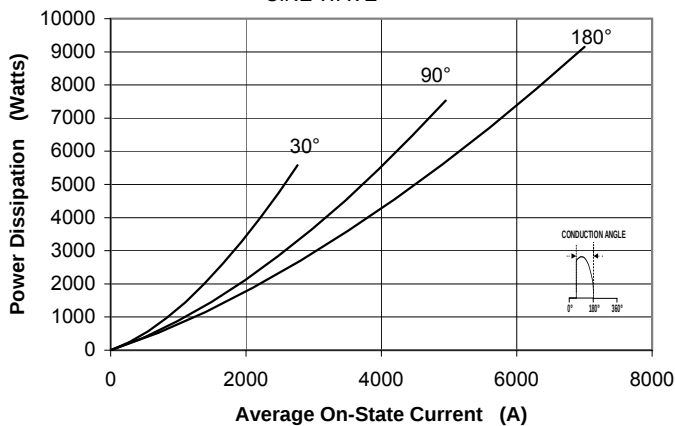


MAXIMUM TRANSIENT THERMAL IMPEDANCE



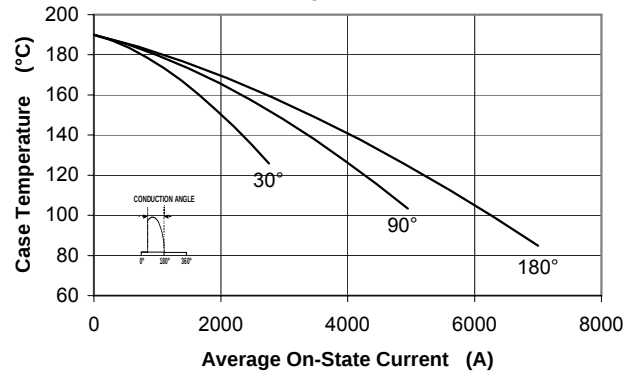
Maximum On-State Power Dissipation

SINE WAVE



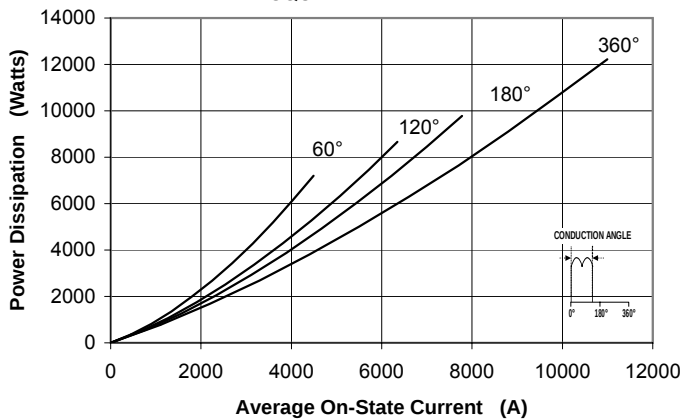
Maximum Allowable Case Temperature

SINE WAVE



Maximum On-State Power Dissipation

SQUARE WAVE



Maximum Allowable Case Temperature

SQUARE WAVE

