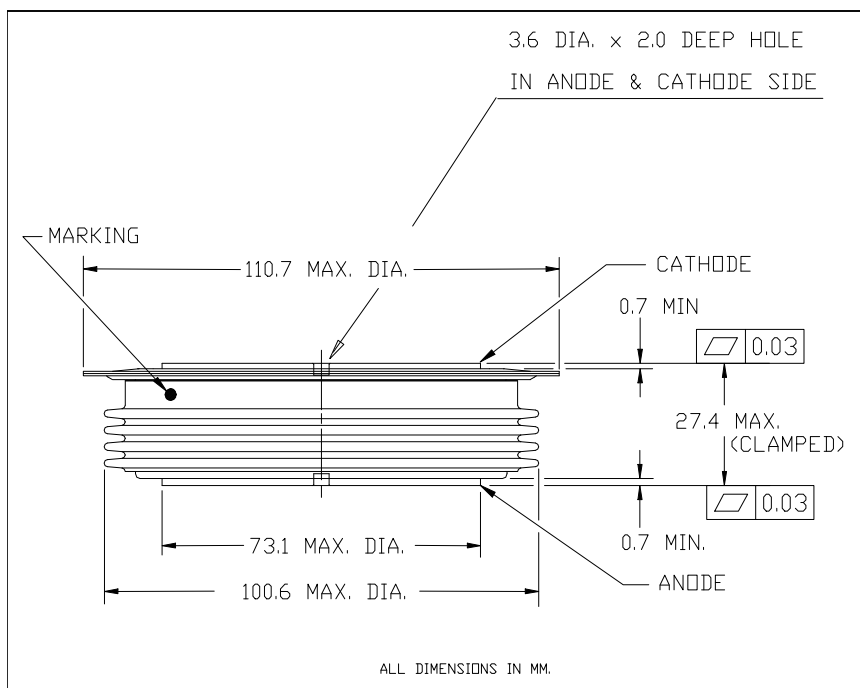




Powerex General Purpose Rectifier Diodes are designed with high blocking voltage capability and low forward voltage drop to minimize conduction losses. These are packaged in hermetic, ceramic Pow-R-Disc packages which can be mounted using commercially available clamps and heatsinks or fully assembled 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: RBS81672XXOO is a 1600V-7200A 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	1600	16	7200	72	XX	OO
	1400	14				
	1200	12			25 μ s typical	

Revised: 8/25/2008



Absolute Maximum Ratings

Characteristic	Symbol	Rating	Units
Repetitive Peak Reverse Voltage	V_{RRM}	1600	Volts
Average On-State Current, $T_C=84^{\circ}\text{C}$	$I_{F(Avg.)}$	7200	A
RMS On-State Current, $T_C=84^{\circ}\text{C}$	$I_{F(RMS)}$	11310	A
Average On-State Current, $T_C=55^{\circ}\text{C}$	$I_{F(Avg.)}$	8400	A
RMS On-State Current, $T_C=55^{\circ}\text{C}$	$I_{F(RMS)}$	13195	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 ² s
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 ² s
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

Information presented is based upon limited testing or 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.

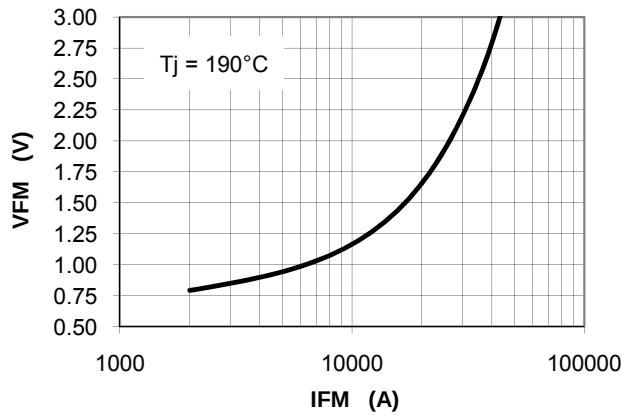
Electrical Characteristics, Tj=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Rating			Units
			min	typ	max	
Repetitive Peak Reverse Leakage Current	I_{RRM}	Tj=190°C, V_{RRM} =Rated		100	150	ma
Peak On-State Voltage	V_{FM}	Tj=190°C, I_{FM} =4000A			0.90	V
V_{FM} Model, Low Level	V_0	Tj=190°C			0.704	V
$V_{FM} = V_0 + r \cdot I_{FM}$	r	15% $I_{FM} - \pi \cdot I_{FM}$			0.0479	mΩ
V_{FM} Model, High Level	V_0	Tj=190°C			0.393	V
$V_{FM} = V_0 + r \cdot I_{FM}$	r	$\pi \cdot I_{FM} - I_{FSM}$			0.0609	mΩ
V_{FM} Model, 4-Term	A	Tj=190°C			-0.710	
$V_{FM} = A + B \cdot \ln(I_{FM}) +$	B	15% $I_{FM} - I_{FSM}$			0.252	
$C \cdot (I_{FM}) + D \cdot (I_{FM})^{1/2}$	C				8.61E-05	
	D				-0.0131	
Reverse Recovery Time	t_{RR}	Tj=175°C, I_{FM} =2000A		35		μs
	IR(Rec)	$di_R/dt = 25 \text{ A}/\mu\text{s}$		415		A
	QRA			7400		μCoul

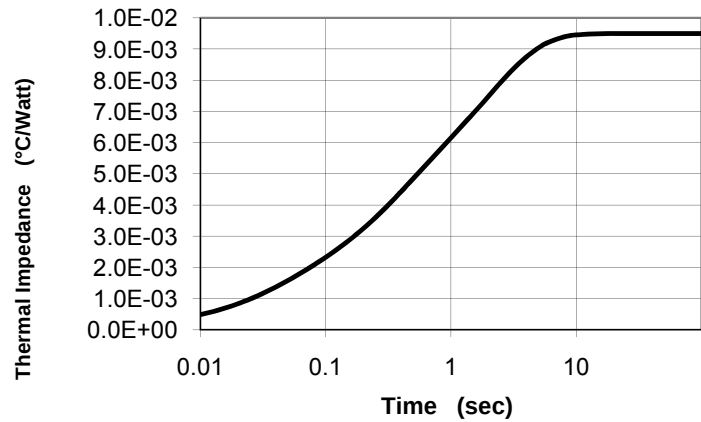
Thermal Characteristics

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
			A(N) =	5.22E-05	1.19E-03	2.91E-03
			Tau(N) =	2.65E-06	3.43E-02	2.74E-01
						5.35E-03
						2.03E+00

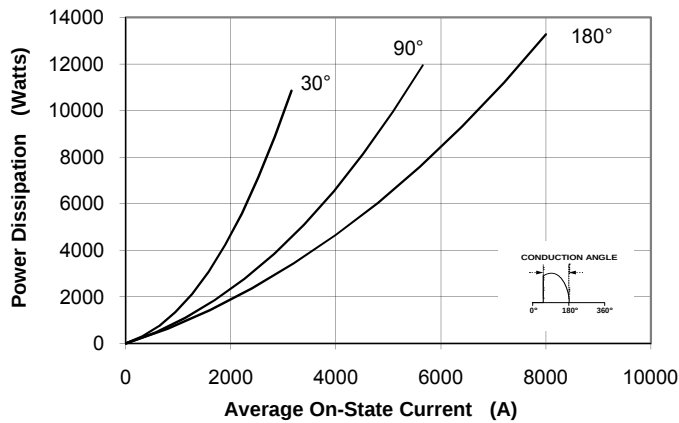
Maximum On-State Voltage Drop



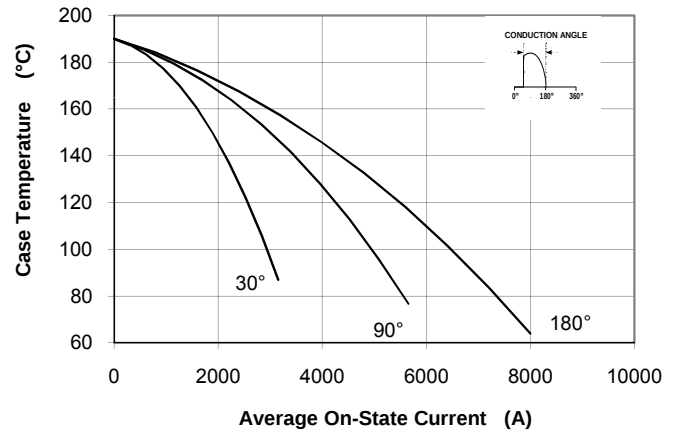
MAXIMUM TRANSIENT THERMAL IMPEDANCE



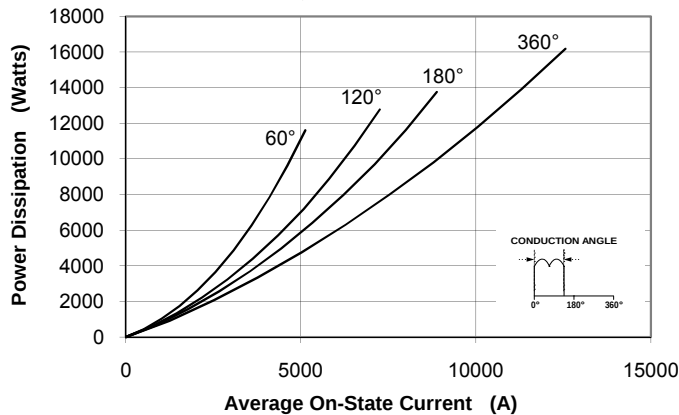
Maximum On-State Power Dissipation
SINE WAVE



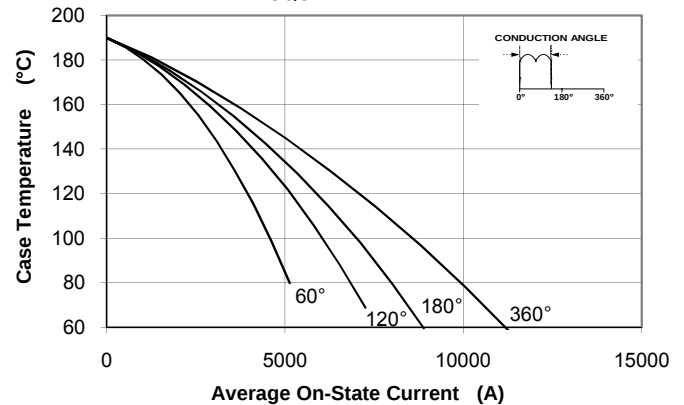
Maximum Allowable Case Temperature
SINE WAVE



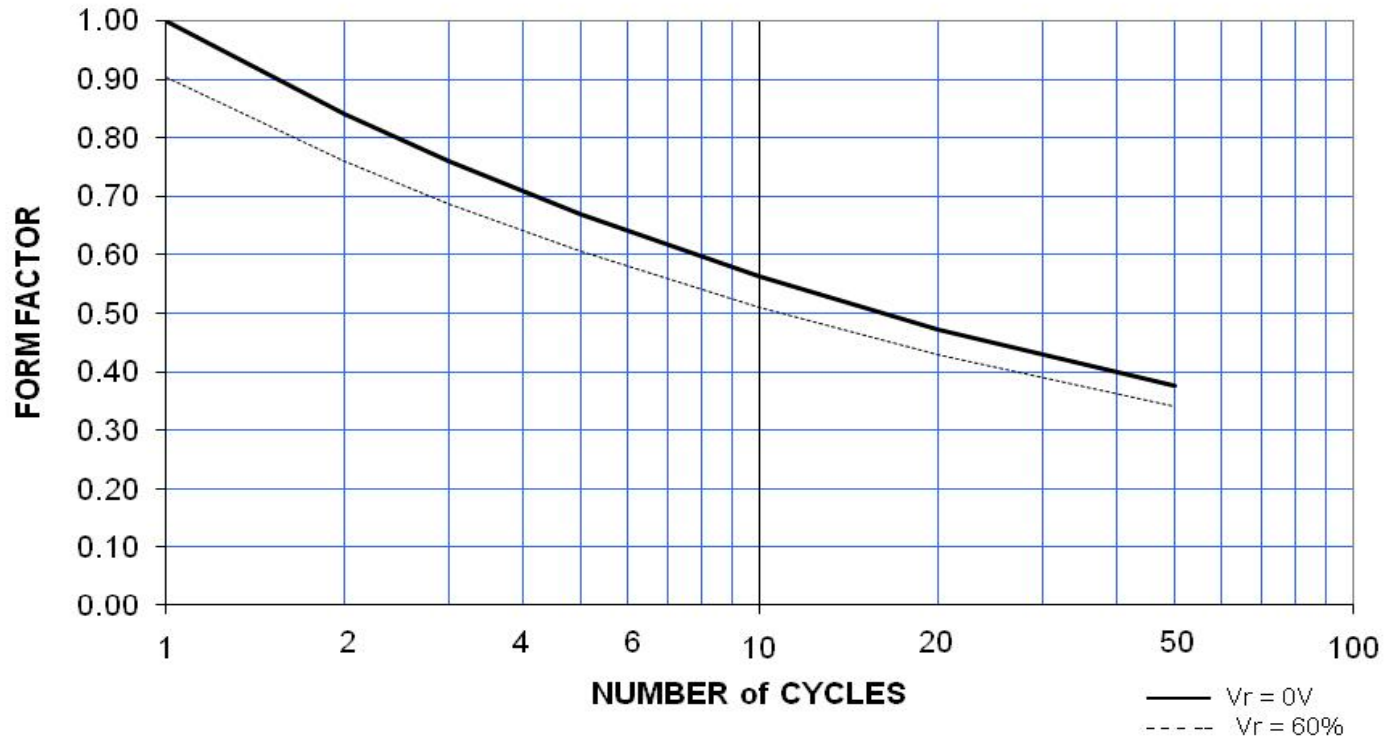
Maximum On-State Power Dissipation
SQUARE WAVE



Maximum Allowable Case Temperature
SQUARE WAVE



MULTI-CYCLE SURGE FORM FACTOR



Multi-Cycle Surge Rating = Single Cycle Rating X Form Factor