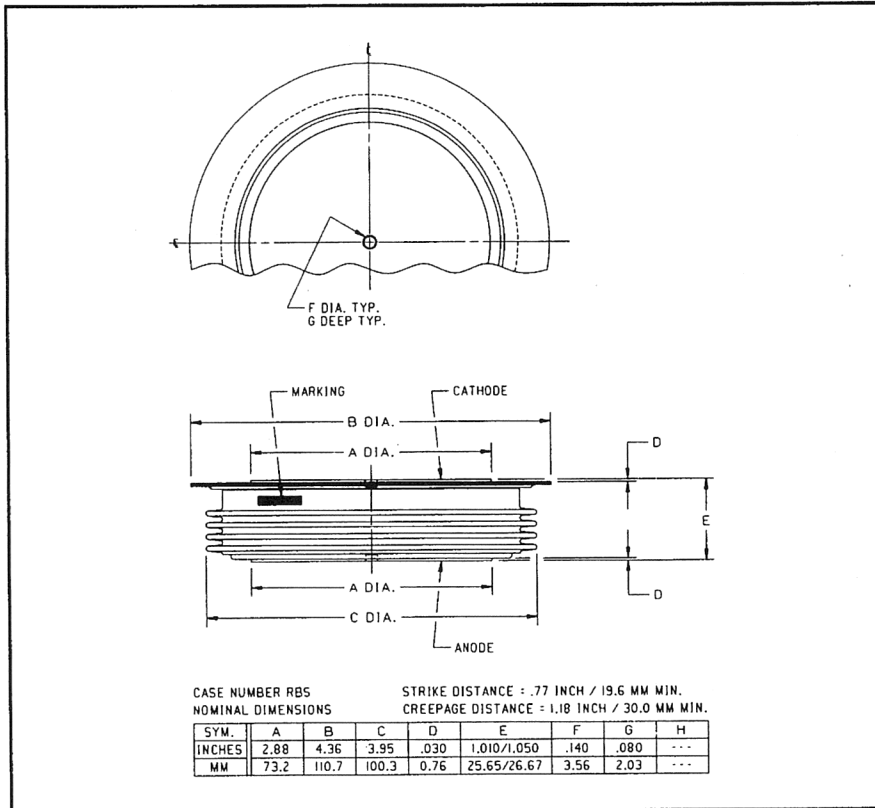
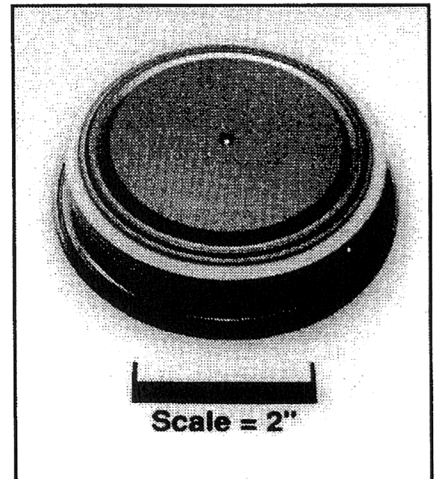


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**High Power
General Purpose
Rectifier**
7000 Amperes Average
600 Volts



RBS8 7000A (Outline Drawing)



RBS8 7000A
High Power
General Purpose Rectifier
7000 Amperes Average, 600 Volts

Description:

The RBS8 is a low voltage, high current rectifier in a thin, low profile package with improved thermal capability. Powerex High Power Rectifiers are designed for use in applications requiring reliable general purpose rectification of high currents.

Features:

- ☐ Low Forward Voltage
- ☐ Low Thermal Impedance
- ☐ Low Profile Package
- ☐ Hermetic Packaging
- ☐ Excellent Surge and I^2t Ratings

Applications:

- ☐ Power Supplies
- ☐ AC and DC Motor Control
- ☐ VAR Generators

Ordering Information:

Select the complete 8 digit part number you desire from the table below.

Type	Voltage	Current	Typical Recovery Time
	V_{RRM} (Volts)	$I_{T(av)}$ (A)	t_{rr} (μ sec)
RBS8	02	70	XX
	04		
	06		
	200V 400V 600V	7000A	25 μ sec



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RBS8 7000A

High Power General Purpose Rectifier

7000 Amperes Average, 600 Volts

Absolute Maximum Ratings

Characteristics	Symbol	RBS8 7000A	Units
Non-repetitive Transient Peak Reverse Voltage	V_{RSM}	$V_{RRM} + 200V$	Volts
RMS Forward Current, $T_C = 79^\circ C$	$I_{F(rms)}$	11000	Amperes
Average Current 180° Sine Wave, $T_C = 79^\circ C$	$I_{F(av)}$	7000	Amperes
RMS Forward Current, $T_C = 55^\circ C$	$I_{F(rms)}$	12440	Amperes
Average Current 180° Sine Wave, $T_C = 55^\circ C$	$I_{F(av)}$	7925	Amperes
Peak One Cycle Surge Forward Current (Non-repetitive) 60Hz	I_{fsm}	60000	Amperes
Peak One Cycle Surge Forward Current (Non-repetitive) 50Hz	I_{fsm}	55000	Amperes
I^2t (for Fusing) for One Cycle, 60Hz	I^2t	15×10^6	A^2sec
Operating Temperature	T_j	-40 to +175°C	°C
Storage Temperature	T_{stg}	-40 to +175°C	°C
Approximate Weight		2.5	lb.
		1.1	kg
Mounting Force		6000 to 10000	lb.
		26.6 to 44.4	kN



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RBS8 7000A
High Power General Purpose Rectifier
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Electrical Characteristics, $T_j = 25^\circ\text{C}$ Unless Otherwise Specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Peak Reverse Leakage Current	I_{RRM}	$T_j = 175^\circ\text{C}$, $V_R = V_{RRM}$			100	mA
Forward Voltage Drop	V_{FM}	$I_{FM} = 3000\text{A}$, Duty Cycle $< 0.1\%$			0.90	Volts
Threshold Voltage, Low-level	$V_{(TO)1}$	$T_j = 125^\circ\text{C}$, $I = 15\%$, $I_{T(av)}$ to $\pi I_{T(av)}$			0.64564	Volts
Slope Resistance, Low-level	r_{T1}				0.04421	m Ω
Threshold Voltage, High-level	$V_{(TO)2}$	$T_j = 125^\circ\text{C}$, $I = \pi I_{T(av)}$ to I_{TSM}			0.64880	Volts
Slope Resistance, High-level	r_{T2}				0.04539	m Ω
V_{TM} Coefficients, Low-level		$T_j = 125^\circ\text{C}$, $I = 15\%$ $I_{T(av)}$ to $\pi I_{T(av)}$			$A_1 = 0.042466$ $B_1 = 0.12757$ $C_1 = 7.653\text{E-}05$ $D_1 = -0.009271$	
V_{TM} Coefficients, High-level		$T_j = 125^\circ\text{C}$, $I = \pi I_{T(av)}$ to I_{TSM}			$A_2 = 1.7705$ $B_2 = -0.24559$ $C_2 = 6.379\text{E-}06$ $D_2 = 0.01468$	
Typical Reverse Recovery Time	t_{rr}	$T_C = 25^\circ\text{C}$, $I_{FM} = 1500\text{A}$, $di_F/dt = 25\text{A}/\mu\text{sec}$		25		μsec

Thermal Characteristics

Maximum Thermal Resistance, Double Sided Cooling

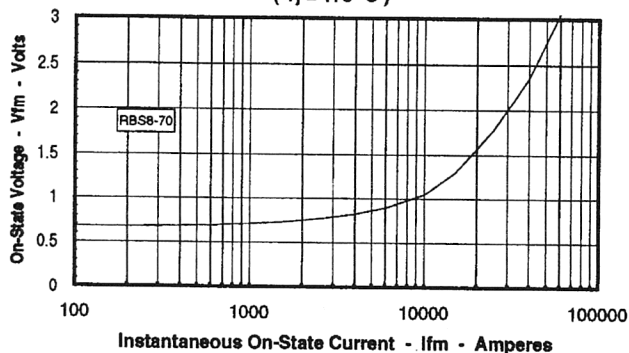
Junction-to-Case	$R_{\theta(j-c)}$	0.0095	$^\circ\text{C/W}$
Case-to-Sink	$R_{\theta(c-s)}$	0.002	$^\circ\text{C/W}$

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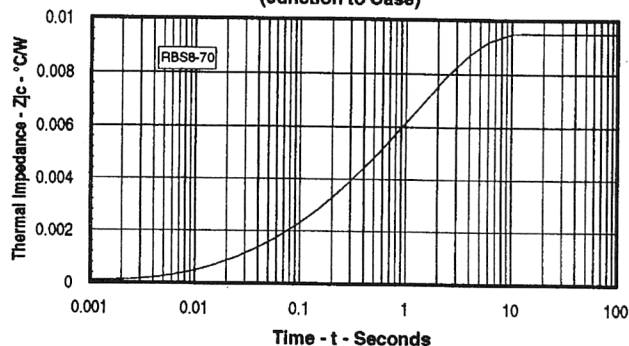
RBS8 7000A

High Power General Purpose Rectifier
 7000 Amperes Average, 600 Volts

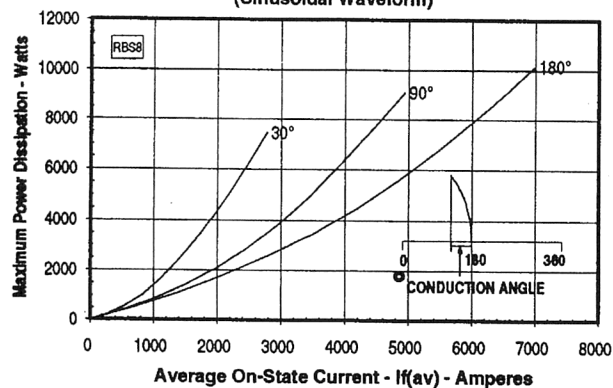
Maximum On-State Forward Voltage Drop
 ($T_J = 175^\circ\text{C}$)



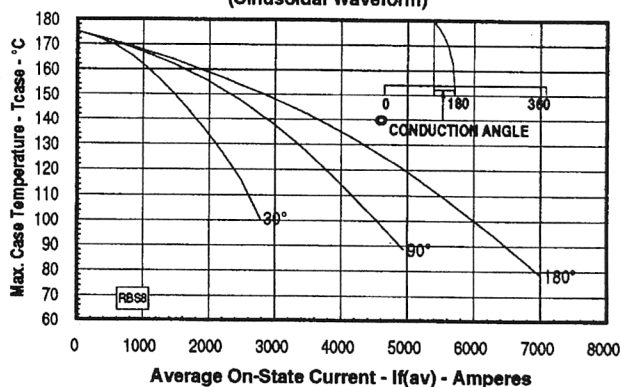
Maximum Transient Thermal Impedance
 (Junction to Case)



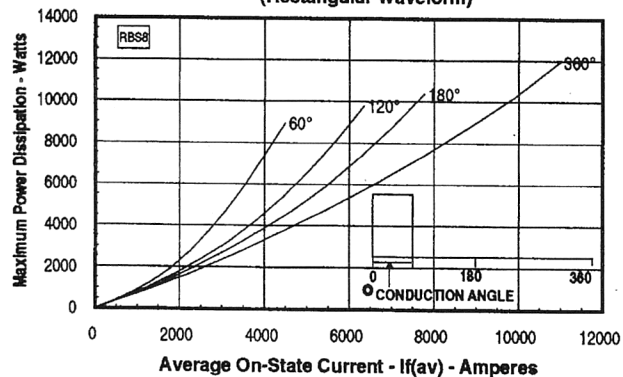
Maximum On-State Power Dissipation
 (Sinusoidal Waveform)



Maximum Allowable Case Temperature
 (Sinusoidal Waveform)



Maximum On-State Power Dissipation
 (Rectangular Waveform)



Maximum Allowable Case Temperature
 (Rectangular Waveform)

