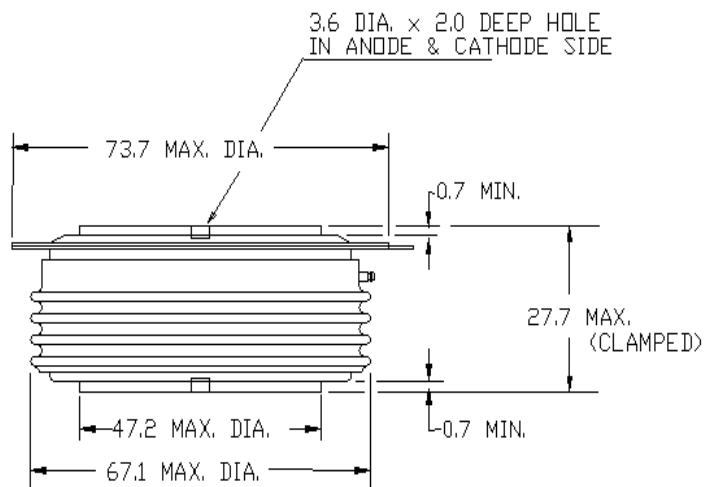




ALL DIMENSIONS IN MM.



The T9G0 SCR employs a Center-Fired amplifying gate structure which allows the SCR to be reliably operated at high di/dt and high dv/dt conditions in phase control applications.

FEATURES:

- Low On-State Voltage
- High di/dt Capability
- High dv/dt Capability
- Hermetic Ceramic Package
- Excellent Surge and I^2t Ratings

APPLICATIONS:

- DC Power Supplies
- Plating Supplies
- Welding Supplies

ORDERING INFORMATION

Select the complete 12 digit Part Number using the table below.
EXAMPLE: **T9G0122503DH** is an 1200V-2500A SCR with 200ma IGT and 12 inch gate and cathode potential leads.

PART	Voltage Rating $V_{DRM}-V_{RRM}$	Voltage Code	Current Rating I_{TAVG}	Current Code	Turn-Off T_q	Gate I_{GT}	Leads
T9G0	600V	06	2500A	25	0	3	DH
	800V	80					
	1000V	10			500us typ.	200ma	12"
	1200V	12					

Revised:

1/7/2009



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

T9G0_2503
Phase Control Thyristor
2500 Amperes 1200 Volts

Absolute Maximum Ratings

Characteristic	Symbol	Rating	Units
Repetitive Peak Voltage	$V_{\text{DRM}}-V_{\text{RRM}}$	1200	Volts
Average On-State Current, $T_C=85^{\circ}\text{C}$	$I_{\text{T(Avg.)}}$	2500	A
RMS On-State Current, $T_C=85^{\circ}\text{C}$	$I_{\text{T(RMS)}}$	3927	A
Average On-State Current, $T_C=55^{\circ}\text{C}$	$I_{\text{T(Avg.)}}$	3100	A
RMS On-State Current, $T_C=55^{\circ}\text{C}$	$I_{\text{T(RMS)}}$	4869	A
Peak One Cycle Surge Current, 60Hz, $V_R=0\text{V}$	I_{TSM}	27,200	A
Peak One Cycle Surge Current, 50Hz, $V_R=0\text{V}$	I_{TSM}	26,700	A
Fuse Coordination I^2t , 60Hz	I^2t	3.08E+06	A^2s
Fuse Coordination I^2t , 50Hz	I^2t	3.56E+06	A^2s
Critical Rate-of-Rise of On-State Current Repetitive	di/dt	100	A/us
Critical Rate-of-Rise of On-State Current Non-Repetitive	di/dt	200	A/us
Critical Rate-of-Rise of Off-State Voltage $V_D = \frac{2}{3} \cdot V_{\text{DRM}}$	dv/dt	400	V/us
Peak Gate Power, 100us	P_{GM}	16	Watts
Average Gate Power	$P_{\text{G(avg)}}$	5	Watts
Operating Temperature	T_j	-40 to+150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{Stg.}}$	-50 to+150	$^{\circ}\text{C}$
Approximate Weight		1	lb
		0.45	Kg
Mounting Force		5000-6000	lbs
		22.2 - 26.7	Knewtons

Information presented is correct to the knowledge and capabilities of the manufacturer. 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.



T9G0_2503

Phase Control Thyristor

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

2500 Amperes 1200 Volts

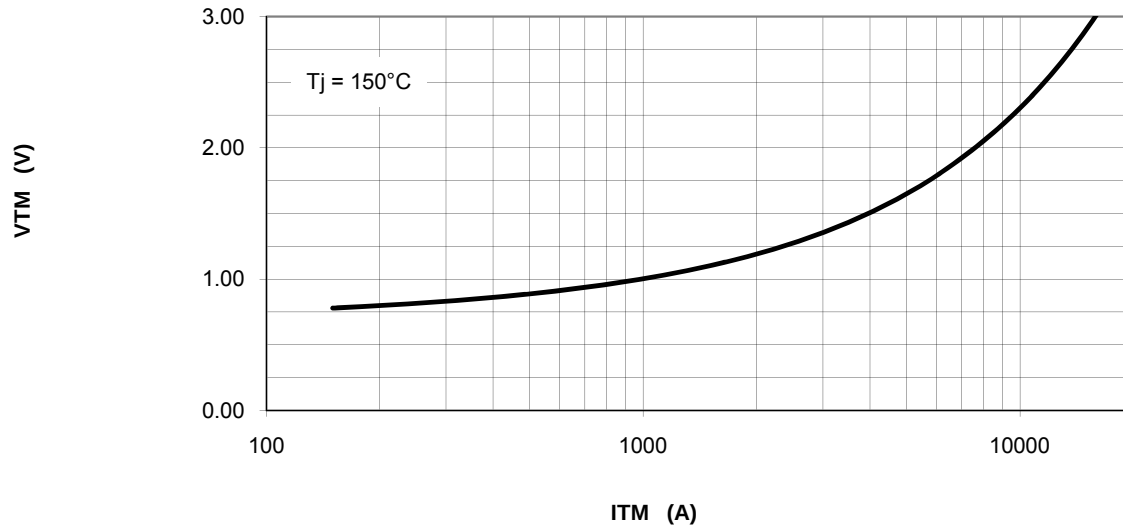
Electrical Characteristics, Tj=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Rating			Units
			min	typ	max	
Repetitive Peak Leakage Current	I_{DRM}/I_{RRM}	Tj=150°C, V_{DRM} =Rated			150	ma
Peak On-State Voltage	V_{TM}	Tj=25°C, I_{TM} =1500A			1.25	V
V_{TM} Model, Low Level	V_0	Tj=150°C			0.848	V
$V_{TM} = V_0 + r \cdot I_{TM}$	r	15% $I_{TM} - \pi \cdot I_{TM}$			0.159	mΩ
V_{TM} Model, High Level	V_0	Tj=150°C			1.153	V
$V_{TM} = V_0 + r \cdot I_{TM}$	r	$\pi \cdot I_{TM} - I_{TSM}$			0.116	mΩ
V_{TM} Model, Hiç 4-Term	A	Tj=150°C			0.679	
$V_{TM} = A + B \cdot \ln(I_{TM}) +$	B	15% $I_{TM} - I_{TSM}$			-0.00257	
$C \cdot (I_{TM}) + D \cdot (I_{TM})^{1/2}$	C				8.34E-05	
	D				8.12E-03	
Turn-On Delay Time	t_d	$V_D = 0.5 \cdot V_{DRM}$ Gate Drive: 40V - 20Ω		1.5		us
Turn-Off Time	t_q	Tj=150°C $dv/dt = 20V/us$ to 80% V_{DRM}		500		us
Gate Trigger Current	I_{GT}	Tj=25°C $V_D = 12V$	30	90	200	ma
Gate Trigger Voltage	V_{GT}		0.6	1.6	3.0	V
Peak Reverse Gate Voltage	V_{GRM}				5	V

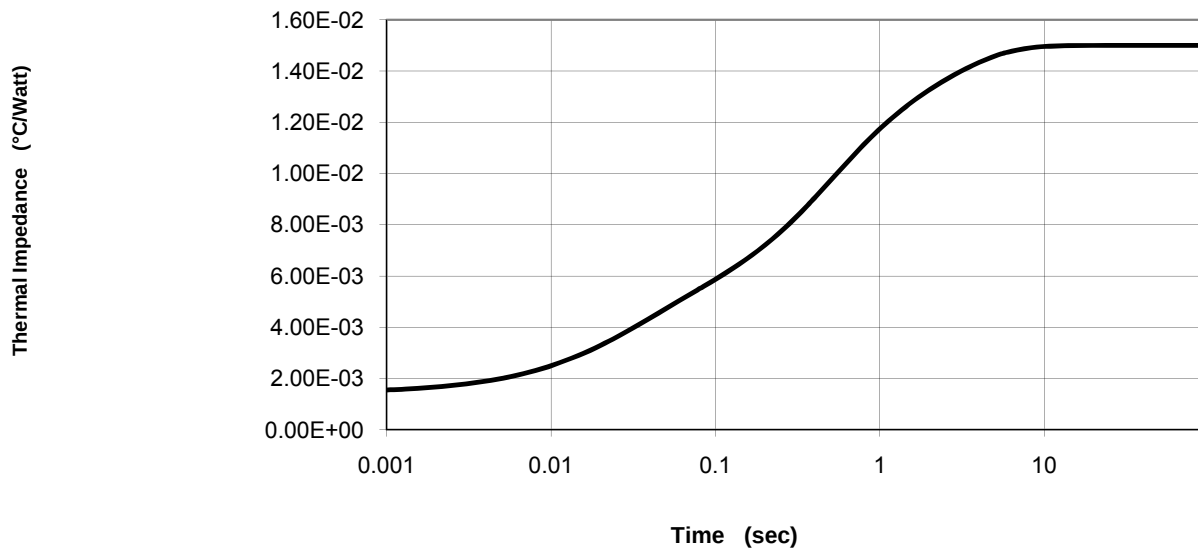
Thermal Characteristics

Characteristic	Symbol	Test Conditions	Rating		Units
			max		
Thermal Resistance					
Junction to Case	$R\theta_{jc}$	Double side cooled	0.015		°C/Watt
Case to Sink	$R\theta_{cs}$	Double side cooled	0.006		°C/Watt
Thermal Impedance Model	$Z\theta_{jc}$	Double side cooled			
$Z\theta_{jc}(t) = \sum (A(N) \cdot (1 - \exp(-t/\tau(N))))$ where:					
	N =	1	2	3	4
	A(N) =	1.42E-03	2.98E-03	6.31E-03	4.28E-03
	Tau(N) =	5.93E-05	2.78E-02	4.14E-01	2.14E+00

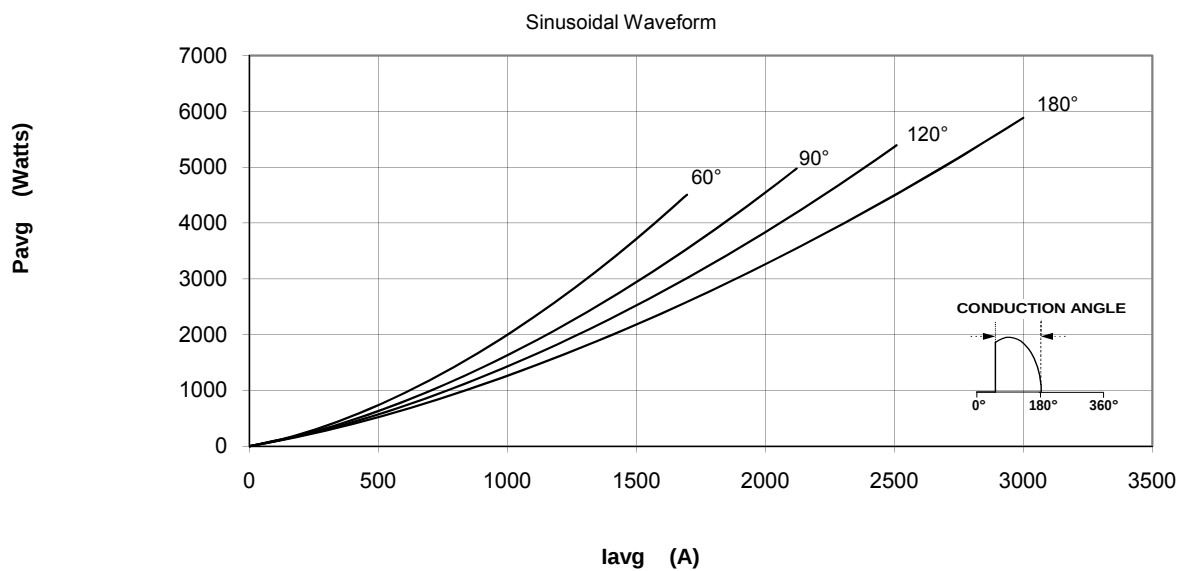
Maximum On-State Voltage Drop



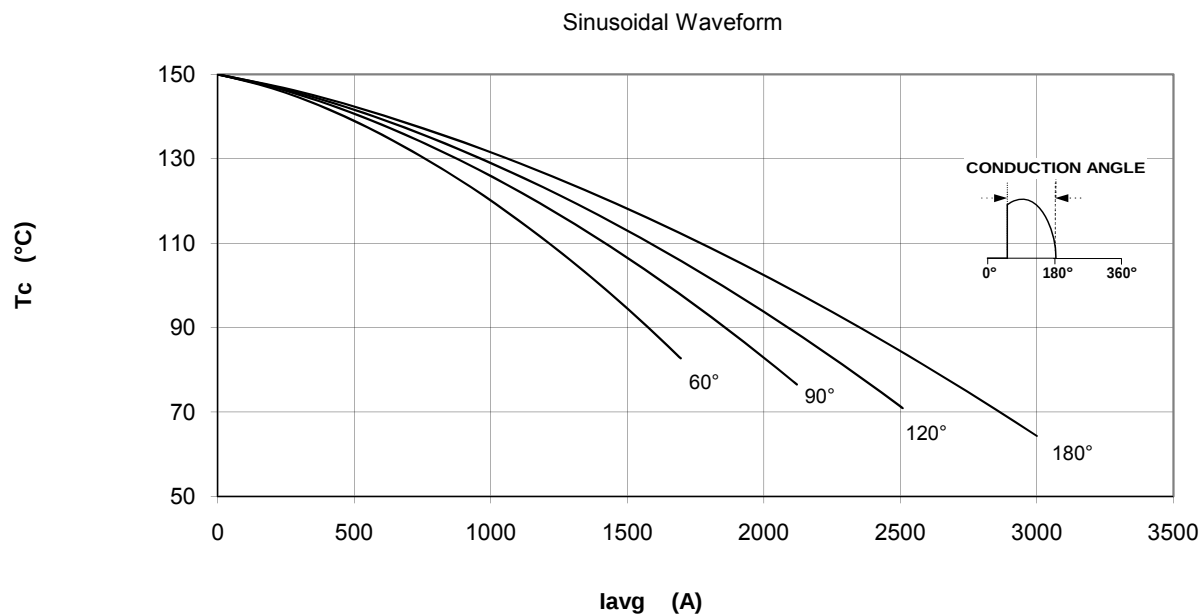
MAXIMUM TRANSIENT THERMAL IMPEDANCE



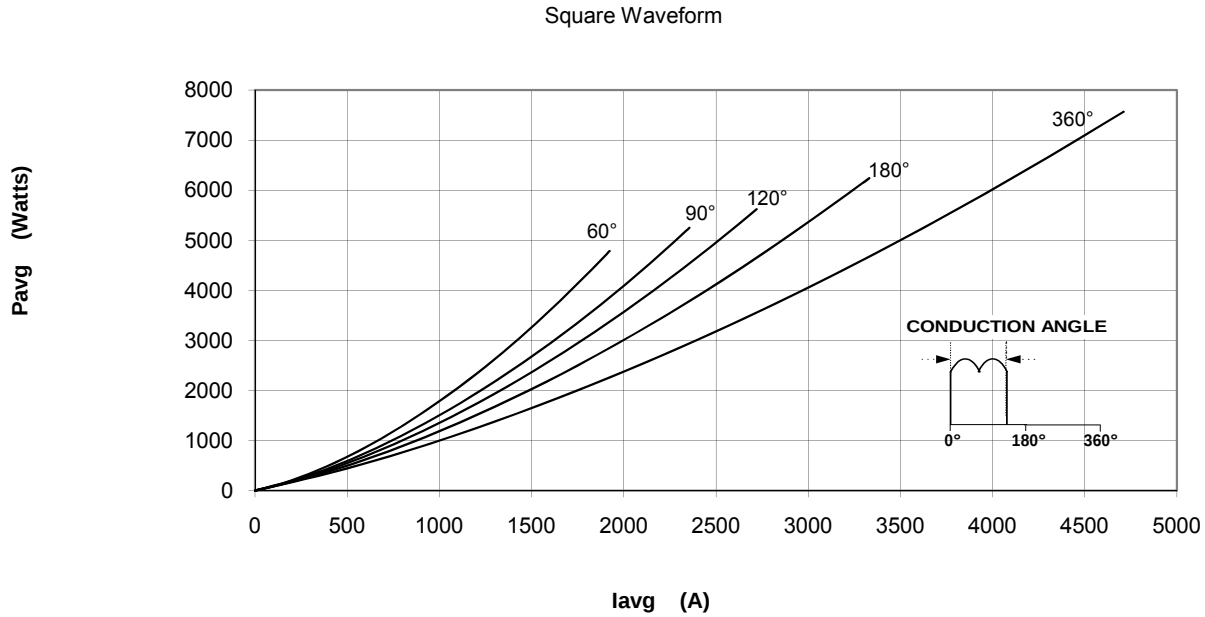
Maximum On-State Power Dissipation



Maximum Allowable Case Temperature



Maximum On-State Power Dissipation



Maximum Allowable Case Temperature

