

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<sup>2</sup>t 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 <sub>DRM</sub> -V <sub>RSM</sub>	Voltage Code	Current Rating I <sub>tavg</sub>	Current Code	Turn-Off T <sub>q</sub>	Gate I <sub>GT</sub>	Leads
<b>T9G0</b>	600V	<b>06</b>	2500A	<b>25</b>	<b>0</b>	<b>3</b>	<b>DH</b>
	800V	<b>80</b>					
	1000V	<b>10</b>			500us typ.	200ma	12"
	1200V	<b>12</b>					

Revised:

1/7/2009

**Absolute Maximum Ratings**

Characteristic	Symbol	Rating	Units
Repetitive Peak Voltage	$V_{DRM}-V_{RRM}$	1200	Volts
Average On-State Current, $T_C=85^{\circ}C$	$I_{T(Avg.)}$	2500	A
RMS On-State Current, $T_C=85^{\circ}C$	$I_{T(RMS)}$	3927	A
Average On-State Current, $T_C=55^{\circ}C$	$I_{T(Avg.)}$	3100	A
RMS On-State Current, $T_C=55^{\circ}C$	$I_{T(RMS)}$	4869	A
Peak One Cycle Surge Current, 60Hz, $V_R=0V$	$I_{TSM}$	27,200	A
Peak One Cycle Surge Current, 50Hz, $V_R=0V$	$I_{TSM}$	26,700	A
Fuse Coordination $I^2t$ , 60Hz	$I^2t$	3.08E+06	A <sup>2</sup> s
Fuse Coordination $I^2t$ , 50Hz	$I^2t$	3.56E+06	A <sup>2</sup> s
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 $V_D = \frac{1}{2} \cdot V_{DRM}$	dv/dt	400	V/us
Peak Gate Power, 100us	$P_{GM}$	16	Watts
Average Gate Power	$P_{G(avg)}$	5	Watts
Operating Temperature	$T_j$	-40 to+150	$^{\circ}C$
Storage Temperature	$T_{Stg.}$	-50 to+150	$^{\circ}C$
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.

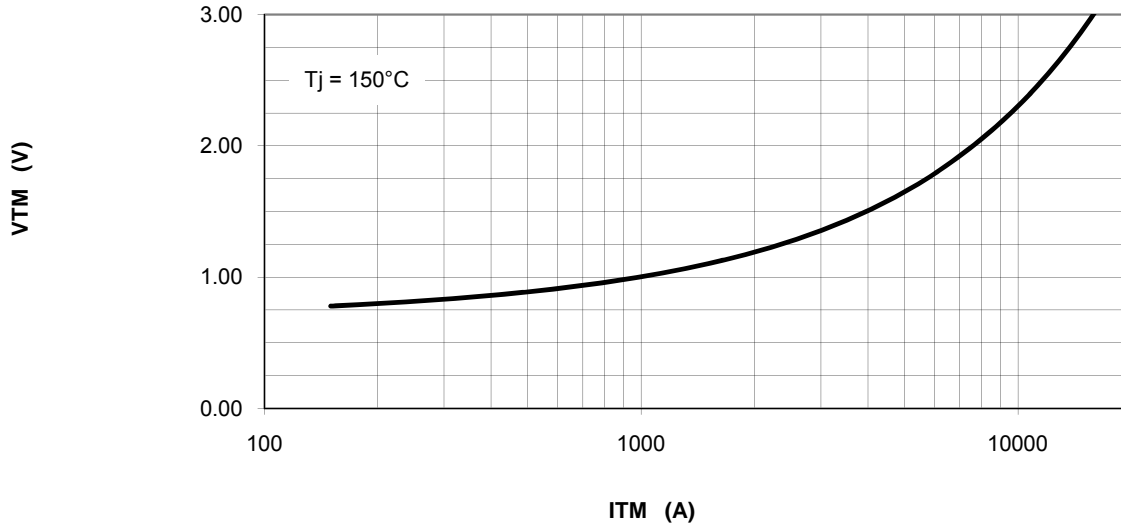
**Electrical Characteristics, Tj=25°C unless otherwise specified**

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

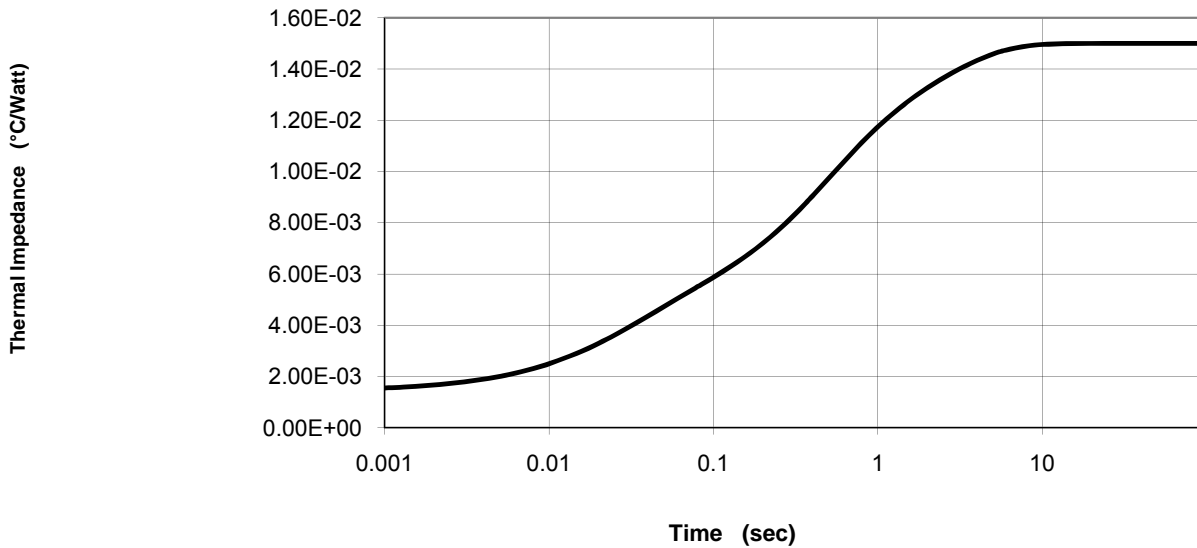
**Thermal Characteristics**

Characteristic	Symbol	Test Conditions	Rating			
			max	Units		
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	

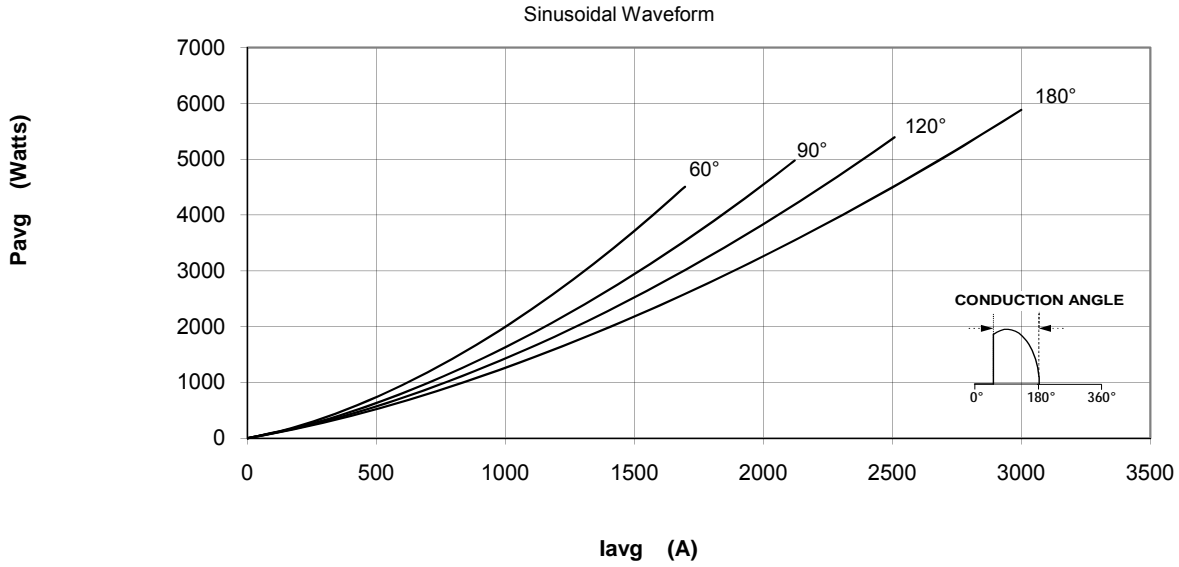
### Maximum On-State Voltage Drop



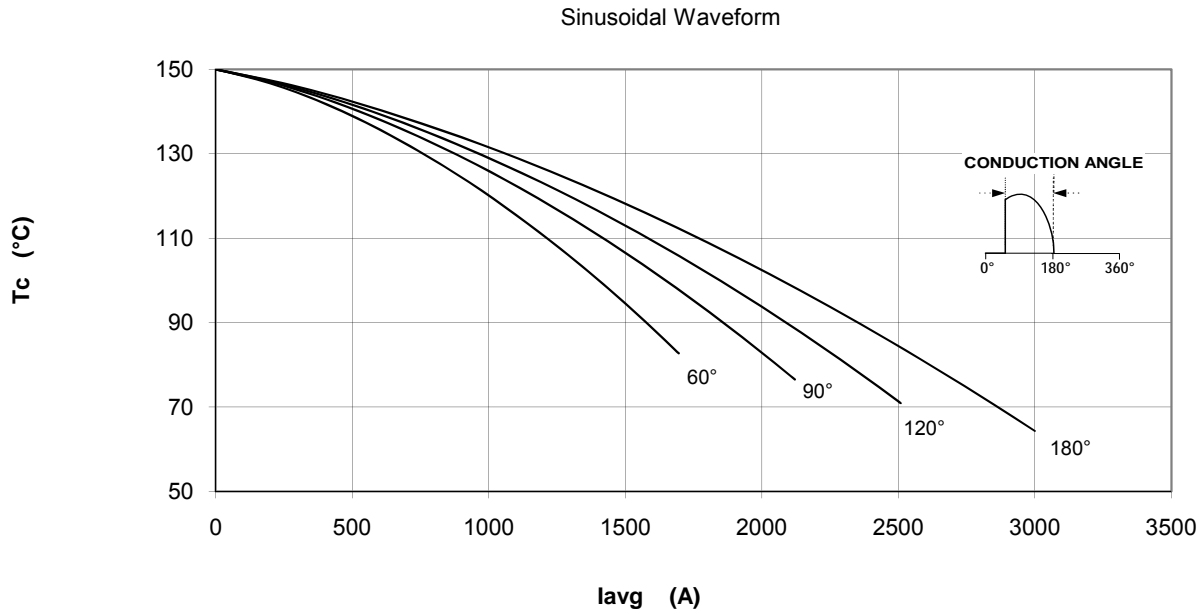
### MAXIMUM TRANSIENT THERMAL IMPEDANCE



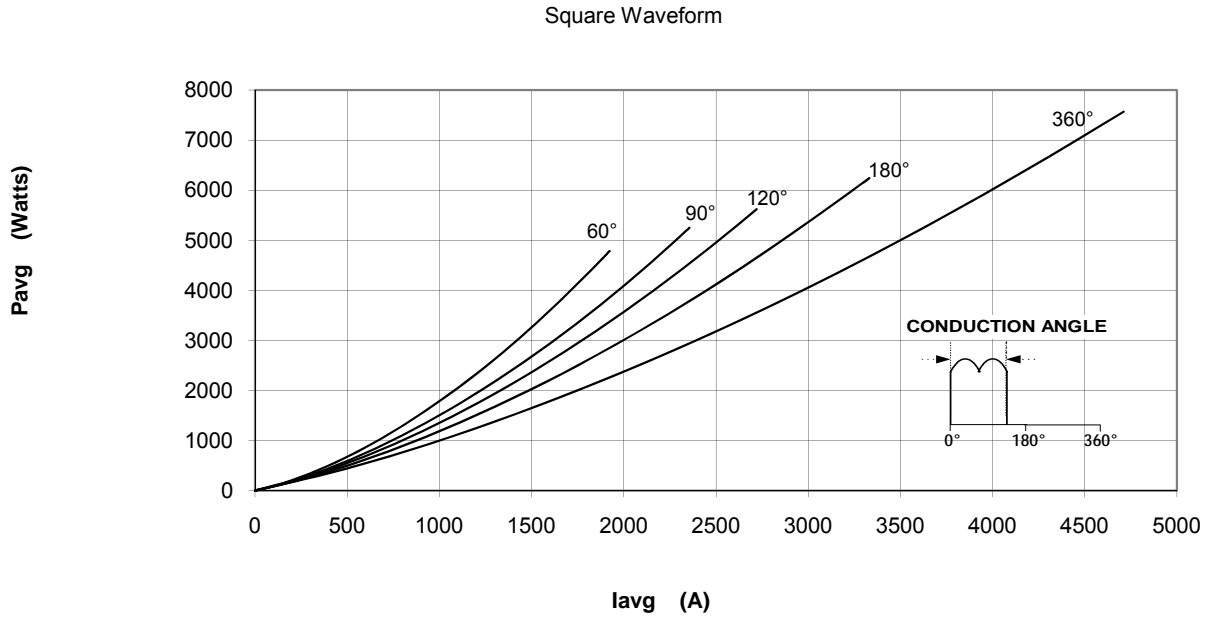
### Maximum On-State Power Dissipation



### Maximum Allowable Case Temperature



### Maximum On-State Power Dissipation



### Maximum Allowable Case Temperature

