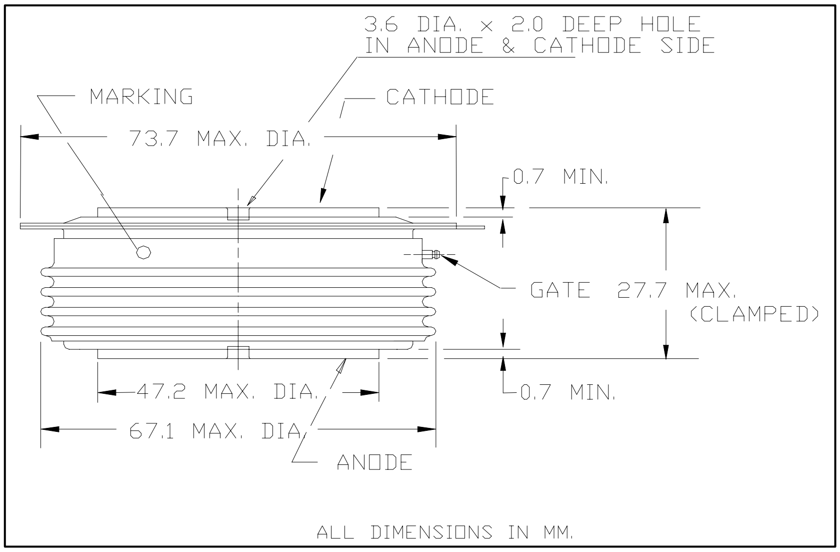


The T9G0 SCR employs a Center-Fired amplifying gate structure which allows the SCR to be reliably operated at high di/dt and high dv/dt conditions in phase control applications.

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: **T9G0082403DH** is an 800V-2400A SCR with 200ma IGT and 12 inch gate and cathode potential leads.

PART	Voltage Rating	Voltage Code	Current Rating	Current Code	Turn-Off	Gate	Leads
	V_{DRM}-V_{RRM}		I_{tavg}		Tq	I_{GT}	
T9G0	800V	**08**	2400A	**24**	**0**	**3**	**DH**
	600V	**06**					
	400V	**04**			400us typ.	200ma	12"

Revised: 6/26/2007

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

Absolute Maximum Ratings

Characteristic	Symbol	Rating	Units
Repetitive Peak Voltage	V_{DRM}-V_{RRM}	800	Volts
Average On-State Current, T_C=75°C	$I_{T(Avg.)}$	2400	A
RMS On-State Current, T_C=75°C	$I_{T(RMS)}$	3770	A
Average On-State Current, T_C=55°C	$I_{T(Avg.)}$	2800	A
RMS On-State Current, T_C=55°C	$I_{T(RMS)}$	4398	A
Peak One Cycle Surge Current, 60Hz, V_R=0V	I_{TSM}	27,000	A
Peak One Cycle Surge Current, 50Hz, V_R=0V	I_{TSM}	25,456	A
Fuse Coordination I^2t, 60Hz	I^2t	3.04E+06	A^2s
Fuse Coordination I^2t, 50Hz	I^2t	3.24E+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
Peak Gate Power, 100us	P_{GM}	16	Watts
Average Gate Power	$P_{G(avg)}$	5	Watts
Operating Temperature	Tj	-20 to+140	°C
Storage Temperature	$T_{Stg.}$	-50 to+150	°C
Approximate Weight		1	lb
		0.45	Kg
Mounting Force		5500-6000	lbs
		24.5 - 26.7	Knewtons

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

Electrical Characteristics, Tj=25°C unless otherwise specified

Characteristic	Symbol	Test Conditions	Rating min	Rating typ	Rating max	Units
Repetitive Peak Forward Leakage Current	I_{DRM}	Tj=140°C, V_{DRM}=Rated			150	ma
Repetitive Peak Reverse Leakage Current	I_{RRM}	Tj=140°C, V_{RRM}=Rated			100	ma
Peak On-State Voltage	V_{TM}	Tj=25°C, I_{TM}=1500A			1.10	V
V_{TM} Model, Low Level	V_0	Tj=140°C			0.722	V
$VTM = V_O + r \cdot I_{TM}$	r	15% I_{TM} - π•I_{TM}			8.83E-02	mΩ
V_{TM} Model, High Level	V_0	Tj=140°C			0.784	V
$VTM = V_O + r \cdot I_{TM}$	r	π•I_{TM} - I_{TSM}			7.11E-02	mΩ
V_{TM} Model, 4-Term	A	Tj=140°C			-0.342	
$V_{TM}= A + B \cdot Ln(I_{TM}) +$	B	15%I_{TM} - I_{TSM}			0.199	
$C \cdot (I_{TM}) + D \cdot (I_{TM})^{½}$	C				9.66E-05	
	D				-9.62E-03	
Turn-On Delay Time	t_d	$V_D = 0.5 \cdot V_{DRM}$ Gate Drive: 40V - 20Ω		1.5		us
Turn-Off Time	tq	Tj=125°C dv/dt = 20V/us to 80% V_{DRM}		400		us
$dv/dt_{(Crit)}$	dv/dt	Tj=140°C Exp. Waveform V_D =80% Rated	300			V/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 min	Rating typ	Rating max	Units
Thermal Resistance						
Junction to Case	$R\Theta_{jc}$	Double side cooled		0.021	0.023	°C/Watt
Case to Sink	$R\Theta_{cs}$	Double side cooled		0.004	0.006	°C/Watt
Thermal Impedance Model	$Z\Theta_{jc}$	Double side cooled				

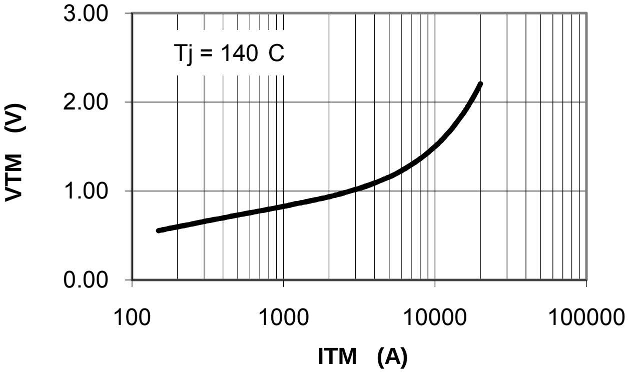
$$Z\Theta_{jc}(t) = \Sigma(A(N) \cdot (1-\exp(-t/Tau(N))))$$

where:

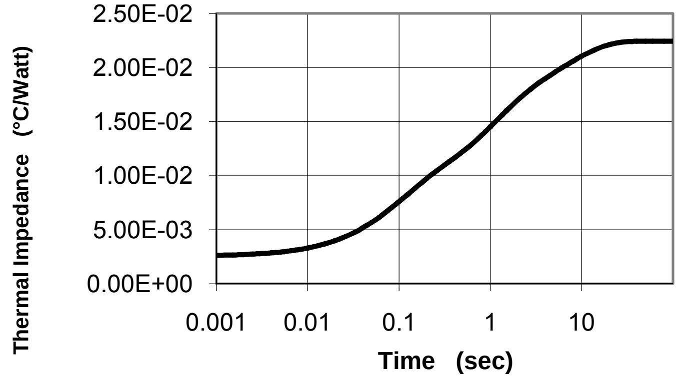
N =	1	2	3	4
A(N) =	2.55E-03	6.19E-03	7.75E-03	5.95E-03
Tau(N) =	4.04E-05	8.75E-02	9.79E-01	6.88E+00

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

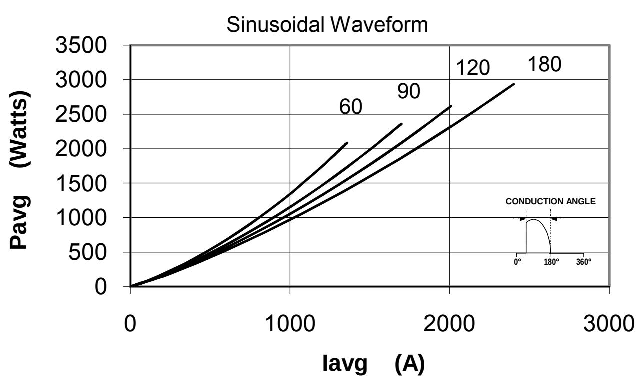
Maximum On-State Voltage Drop



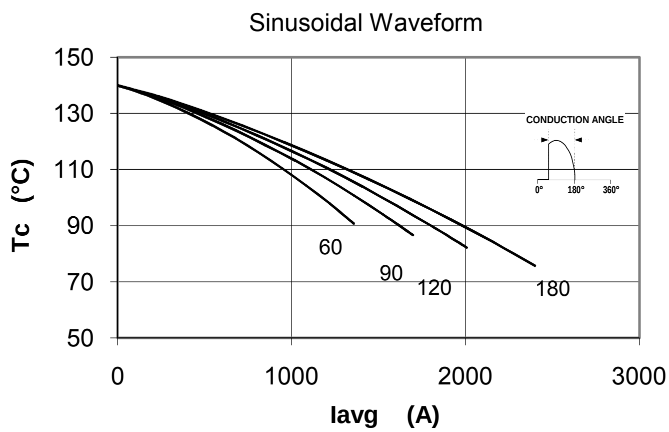
MAXIMUM TRANSIENT THERMAL IMPEDANCE



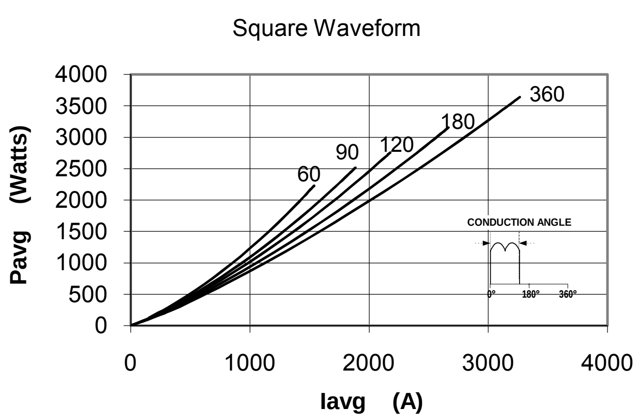
Maximum On-State Power Dissipation



Maximum Allowable Case Temperature



Maximum On-State Power Dissipation



Maximum Allowable Case Temperature