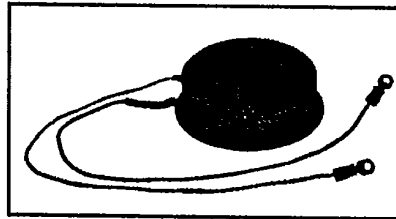
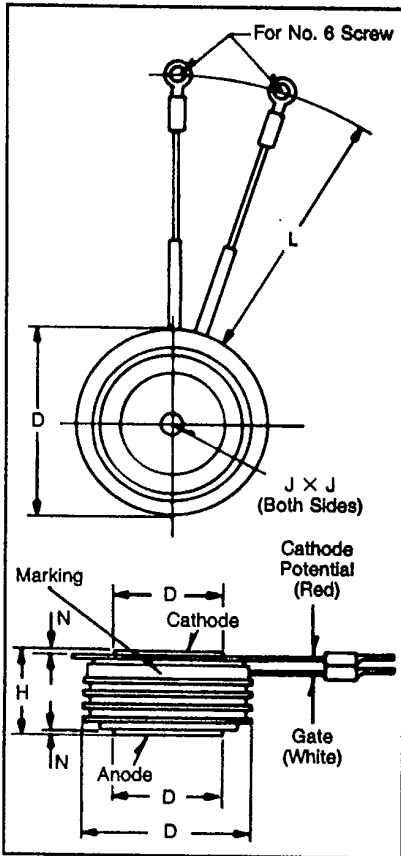




T9G0

Powerex, Inc. Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272
 Powerex Europe, S.A., 428 Ave. G. Durand, BP107, 72003 LeMans, France (43) 72.75.15

Phase Control SCR
800-900 Amperes Avg
2400-4000 Volts



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Phase Control SCR
 800-900 Amperes/2400-4000 Volts

Description

Powerex Silicon Controlled Rectifiers (SCR) are designed for phase control applications. These are all-diffused, Press-Pak (Pow-R-Disc) devices employing the field-proven amplifying (di/namic) gate.

Features:

- Low On-State Voltage
- High di/dt
- High dv/dt
- Hermetic Packaging
- Excellent Surge and I²t Ratings

Applications:

- Power Supplies
- Battery Chargers
- Motor Control
- Light Dimmers
- VAR Generators

Ordering Information

Example: Select the complete eight digit part number you desire from the table - i.e. T9G02409 is a 2400 Volt, 900 Ampere Phase Control SCR.

T9G
Outline Drawing

Dimensions	Inches		Millimeters	
	Min.	Max.	Min.	Max.
φD	2.850	2.900	72.39	73.66
φD ₁	1.845	1.855	46.86	47.12
φD ₂	2.560	2.640	65.02	67.06
H	1.03	1.07	26.16	27.18
φJ	.135	.145	3.43	3.68
J ₁	.075	.090	1.91	2.29
L	11.50	12.50	292.10	317.50
N	.050	—	1.27	—

Creep Distance—1.20 in. min. (30.48 mm)
 Strike Distance—.70 in. min. (17.78 mm)
 (in accordance with NEMA standards.)
 Finish—Nickel Plate.

Approx. Weight—1 lb. (454 g).
 1. Dimension "H" is a clamped dimension.

Type	Voltage*		Current	
	V _{ORM}	V _{RRM} Code	I _r (avg)	Code
T9G0	2400	24	800	08
	2600	26		
	2800	28		
	3000	30		
	3200	32		
	3400	34		
	3600	36		
	3800	38		
4000	40	900	09	

*All voltages not available in all current ratings.



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Absolute Maximum Ratings

	Symbol	T9G0 _ _ 08	T9G0 _ _ 09	Units
Maximum Blocking Voltage	V_{DRM}, V_{RRM}	4000	3400	Volts
RMS On-State Current	$I_{T(RMS)}$	1260	1410	Amperes
Average On-State Current	$I_{T(av)}$	800	900	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz) ^①	I_{TSM}	13,000	15,000	Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz) ^①	I_{TSM}	11,900	13,700	Amperes
Critical Rate-of-Rise of On-State Current (Non-Repetitive) ^{② ③ ④}	di/dt	600	600	Amperes/ μ s
Critical Rate-of-Rise of On-State Current (Repetitive)	di/dt	150	150	Amperes/ μ s
I^2t (for Fusing), One Cycle at 60Hz	I^2t	700,000	935,000	A ² sec
Peak Gate Power Dissipation	P_{GM}	16	16	Watts
Average Gate Power Dissipation	$P_{G(av)}$	3	3	Watts
Storage Temperature	T_{stg}	-40 to 150	-40 to 150	°C
Operating Temperature	T_J	-40 to 125	-40 to 125	°C
Mounting Force ^⑤		5000 to 5500	5000 to 5500	lb.
Mounting Force ^⑥		2270 to 2500	2270 to 2500	kg

Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	T9G0 _ _ 08	T9G0 _ _ 09	Units
Current—Conducting State Maximums					
Peak On-State Voltage	V_{TM}	$I_{TM} = 1500A, T_J = 25^\circ C$	2.0	1.85	Volts
T9G0					
Voltage—Blocking State Maximums^①					
Forward Leakage, Peak	I_{DRM}	$T_J = 125^\circ C, V_{DRM} = \text{rated}$	150		mA
Reverse Leakage, Peak	I_{RRM}	$T_J = 125^\circ C, V_{RRM} = \text{rated}$	150		mA
Switching					
Typical Turn-Off Time	t_t	$I_T = 250A, T_J = 125^\circ C,$ $di/dt = 50A/\mu\text{sec, reapplied}$ $dv/dt = 20V/\mu\text{sec linear to } 0.8V_{DRM}$	400		μsec
Typical Turn-On Time ^②	t_{on}	$I_{TM} = 1000A, V_D = 1500V$	5.0		μsec
Min. Critical dv/dt exponential to V_{DRM} ^③	dv/dt	$T_J = 125^\circ C$	300		V/ μsec
Thermal					
Maximum Thermal Resistance, ^④ double sided cooling					
Junction to Case	$R_{\theta JC}$.023		°C/Watt
Case to Sink, Lubricated	$R_{\theta CS}$.0075		°C/Watt
Gate—Maximum Parameters					
Gate Current to Trigger	I_{GT}	$T_J = 25^\circ C, V_D = 12V$	200		mA
Gate Voltage to Trigger	V_{GT}	$T_J = 25^\circ C, V_D = 12V$	3.0		Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_J = 125^\circ C, \text{rated } V_{DRM}$.15		Volts
Peak Forward Gate Current	I_{GTM}		4		Amperes
Peak Reverse Gate Voltage	V_{GRM}		5		Volts

① Consult recommended mounting procedures.

② Applies for zero or negative gate bias.

③ Per JEDEC RS-397, 5.2.2.1.

④ With recommended gate drive.

⑤ Higher dv/dt ratings available, consult factory.

⑥ Per JEDEC standard RS-397, 5.2.2.6.



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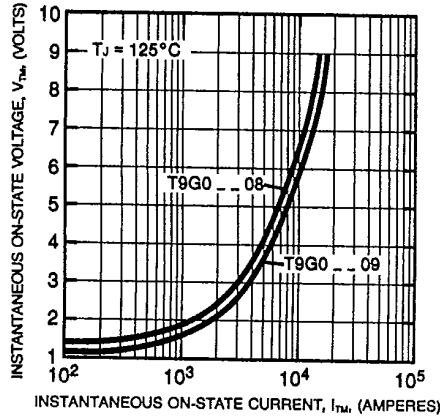
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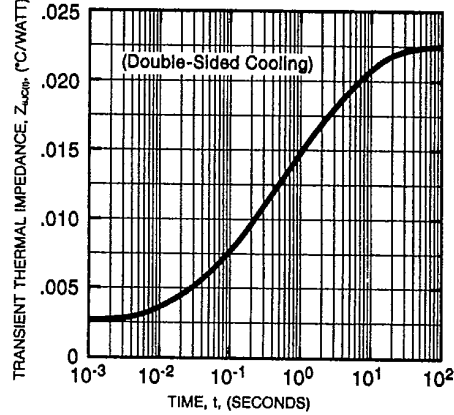
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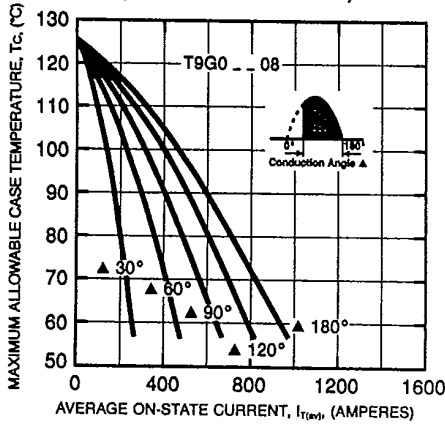
MAXIMUM ON-STATE CHARACTERISTICS



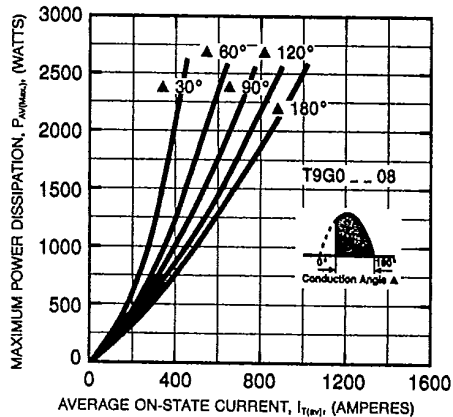
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



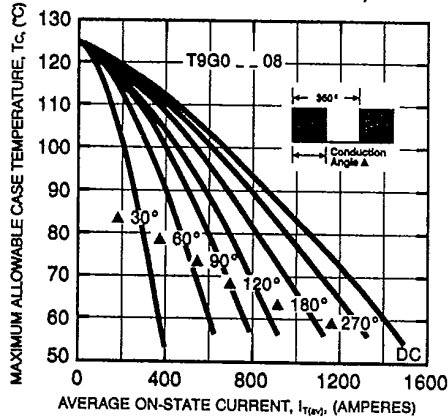
MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



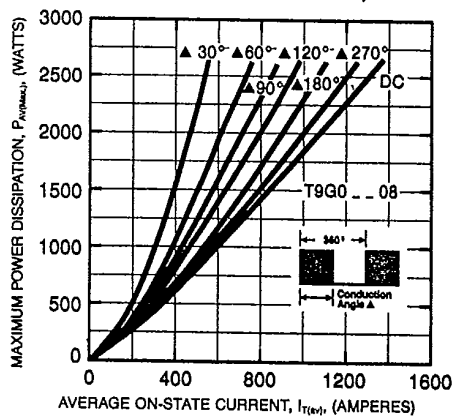
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM)



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)



MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)





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