

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Powerex Inc.](#)
[T7H8167504DN](#)

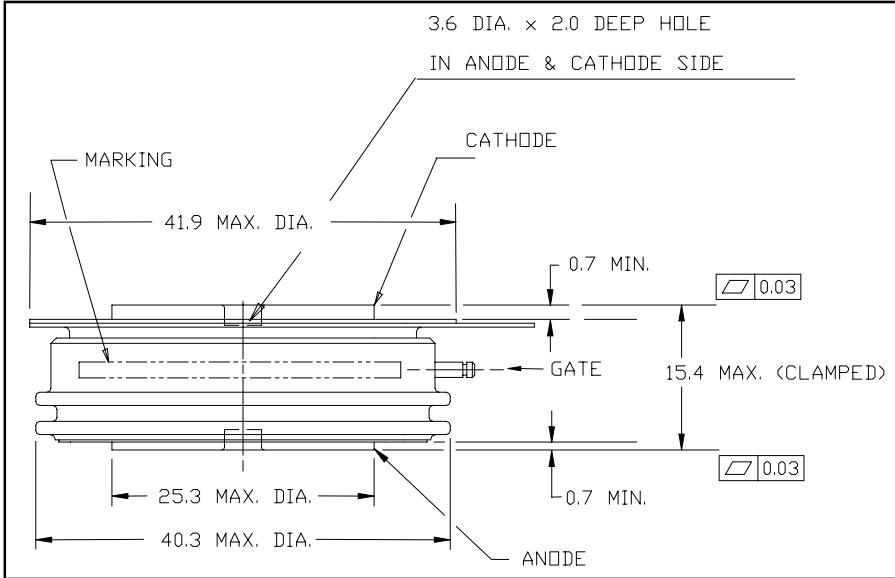
For any questions, you can email us directly:
sales@integrated-circuit.com



**T7H8
750A**

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

Phase Control SCR
750 Amperes Average
1600 Volts



T7H8 750A (Outline Drawing)



T7H8 750A Phase Control SCR
 750 Amperes Average, 1600 Volts

Ordering Information:

Select the complete 12 digit module part number from the table below.
 Example: T7H8167504DN is a 1600V 750A Phase Control SCR.

Type	Voltage V_{RRM} (Volts)	Current $I_{T(av)}$ (A)	Turn-off Time t_q (μ sec)	Gate Current I_{GT} (mA)	Lead Code
T7H8	02 through 16 200V through 1600V	75 750A	0 150 μ sec typical	4 150 mA	DN 8"

Description:

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

Features:

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

Applications:

- Power Supplies
- Motor Control



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Absolute Maximum Ratings

Characteristics	Symbol		Units
Non-Repetitive Transient Peak Reverse Blocking Voltage	V_{RSM}	$V_{RRM} + 100V$	Volts
RMS On-State Current, $T_C = 62^\circ C$	$I_{T(RMS)}$	1180	Amperes
Average Current 180° Sine Wave, $T_C = 62^\circ C$	$I_{T(AV)}$	750	Amperes
RMS On-State Current, $T_C = 55^\circ C$	$I_{T(RMS)}$	1260	Amperes
Average Current 180° Sine Wave, $T_C = 55^\circ C$	$I_{T(AV)}$	800	Amperes
Peak One Cycle Surge On-State Current (Non-Repetitive) 60 Hz	I_{TSM}	10500	Amperes
Peak One Cycle Surge On-State Current (Non-Repetitive) 50 Hz	I_{TSM}	9600	Amperes
Critical Rate-of-rise of On-State Current (Non-Repetitive)	di/dt	600	A/ μ sec
Critical Rate-of-rise of On-State Current (Repetitive)	di/dt	150	A/ μ sec
I^2t (for Fusing) for One Cycle, 60 Hz	I^2t	460,000	A ² sec
Peak Gate Power Dissipation	P_{GM}	16	Watts
Average Gate Power Dissipation	$P_{G(av)}$	3	Watts
Operating Temperature	T_J	-40 to +125	°C
Storage Temperature	T_{stg}	-40 to +150	°C
Approximate Weight		4	oz.
		113	g
Mounting Force		2000 to 2400	lb.
		900 to 1090	kg.

Information presented is based upon manufacturers testing and projected capabilities.
 This information is subject to change without notice.
 The manufacturer makes no claim as to the suitability of use, reliability, capability,
 or future availability of this product.



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Electrical Characteristics, T_J=25°C unless otherwise specified

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Repetitive Peak Reverse Leakage Current	I _{RRM}	T _J =125°C, V _R = V _{RRM}			30	mA
Repetitive Peak Forward Leakage Current	I _{DRM}	T _J =125°C, V _D = V _{DRM}			30	mA
Peak On-State Voltage	V _{TM}	I _{FM} =625A peak, Duty Cycle < 0.1 %			1.40	V
Threshold Voltage, Low-level	V _{(TO)1}	T _J = 125°C, I = 15%I _{T(AV)} to πI _{T(AV)}			0.97192	V
Slope Resistance, Low-level	Γ _{T1}				0.4818	mΩ
Threshold Voltage, High-level	V _{(TO)2}	T _J = 125°C, I = πI _{T(AV)} to I _{TSM}			1.4824	V
Slope Resistance, High-level	Γ _{T2}				0.2845	mΩ
V _{TM} Coefficients, Low-level		T _J = 125°C, I = 15%I _{T(AV)} to πI _{T(AV)} V _{TM} = A+ B Ln(I) +C(I) + D Sqrt(I)		A = B = C = D =	1.221 -0.1259 8.857 E-04 0.03348	
Typical Turn-On Time	t _{on}	I _T = 100A, V _D = 100 V		7		μs
Typical Turn-Off Time	t _q	T _J = 125°C, I _T = 250A, di _R /dt = 25A/μs Reapplied dv/dt = 20 V/μs Linear to 80% V _{DRM}		150		μs
Minimum Critical dv/dt – Exponential to V _{DRM}	dv/dt	T _J = 125°C	300			V/μs
Gate Trigger Current	I _{GT}	T _J = 25°C, V _D = 12 V			150	mA
Gate Trigger Voltage	V _{GT}	T _J = 25°C, V _D = 12 V			3.0	V
Non-Triggering Gate Voltage	V _{GDM}	T _J = 125°C, V _D = V _{DRM}			0.15	V
Peak Forward Gate Current	I _{GTM}				4	A
Peak Reverse Gate Voltage	V _{GRM}				5	V

Thermal Characteristics

Maximum Thermal Resistance, Double Sided Cooling		Max.	Units
Junction-to-Case	R _{Θ(J-C)}	0.04	°C/W
Case-to-Sink	R _{Θ(C-S)}	0.02	°C/W



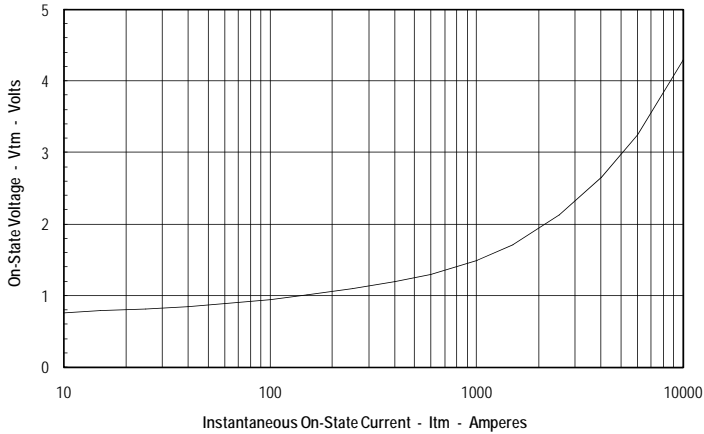
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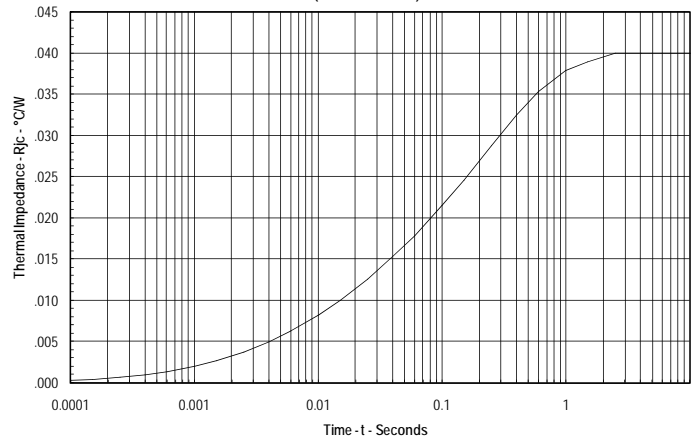
Maximum On-State Forward Voltage Drop

(T_J = 125 °C)



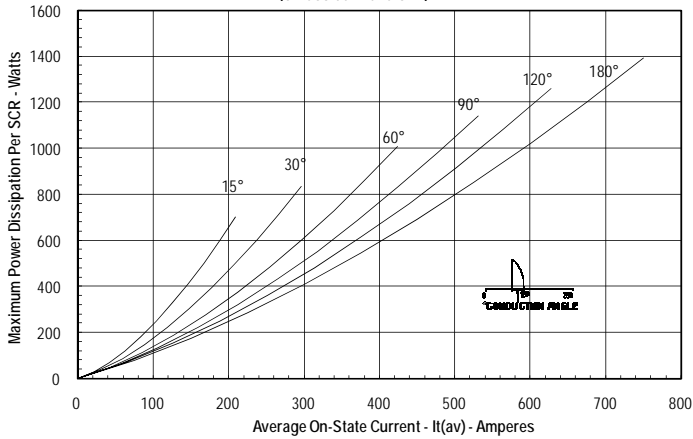
Maximum Transient Thermal Impedance

(Junction to Case)



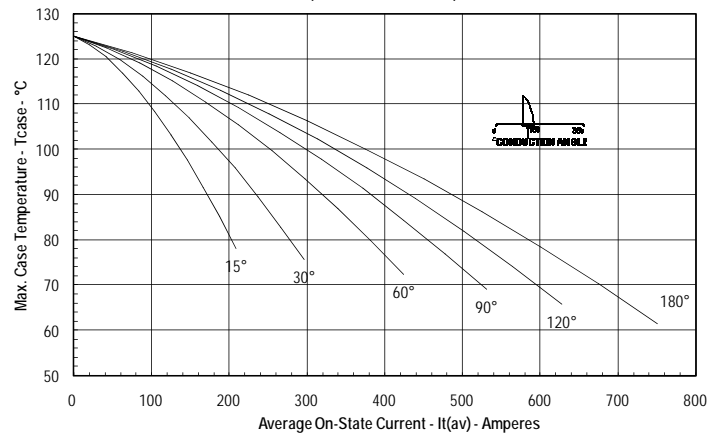
Maximum On-State Power Dissipation

(Sinusoidal Waveform)



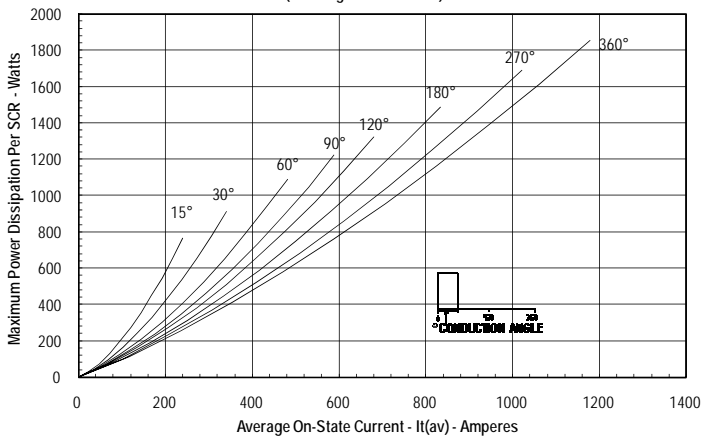
Maximum Allowable Case Temperature

(Sinusoidal Waveform)



Maximum On-State Power Dissipation

(Rectangular Waveform)



Maximum Allowable Case Temperature

(Rectangular Waveform)

