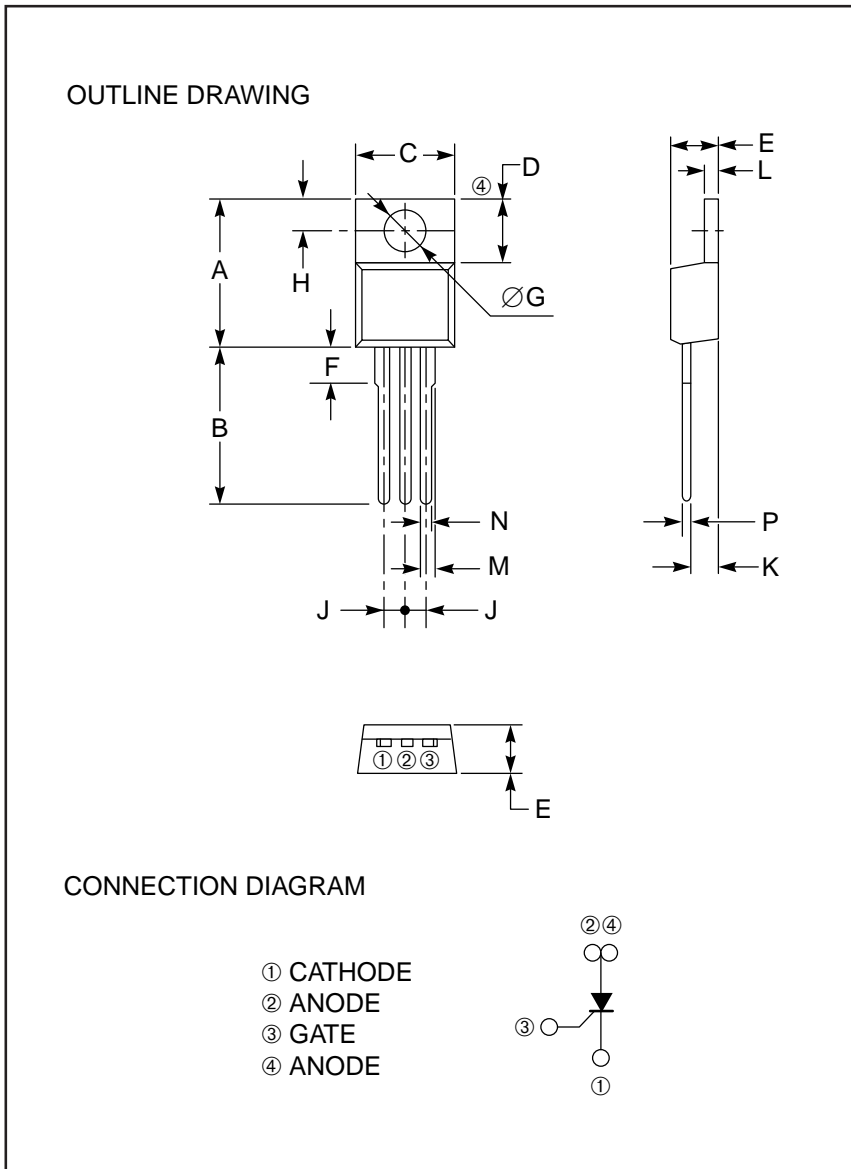


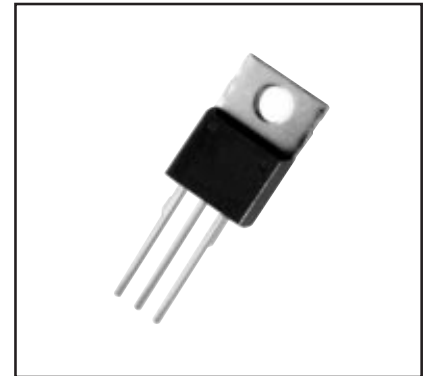
### Lead-mount, Phase Control SCR 8 Amperes/400-600 Volts



Outline Drawing (Conforms to TO-220)

Dimensions	Inches	Millimeters
A	0.63 Max.	16 Max.
B	0.49 Min.	12.5 Min.
C	0.41	10.5
D	0.28	7
E	0.18	4.5
F	0.15 Max.	3.8 Max.
G	0.142 ± 0.008 Dia.	3.6 ± 0.2 Dia.

Dimensions	Inches	Millimeters
H	0.125 ± 0.008	3.2 ± 0.2
J	0.102 ± 0.016	2.6 ± 0.4
K	0.10	2.5
L	0.051	1.3
M	0.039	1.0
N	0.031	0.8
P	0.020	0.5



#### Description:

The Powerex CR8AM Lead-mount Phase Control SCRs are planar passivated thyristors for use in low power control and rectification. These devices are molded silicone plastic types.

#### Features:

- Easy Application for Printed Circuits
- Glass Passivated
- High Surge Current

#### Applications:

- Heater Control
- Motor Control
- Switching Mode Power Supply
- Regulator for Motorcycles

#### Ordering Information:

Example: Select the complete six or seven digit part number you desire from the table - i.e. CR8AM-8 is a 400 Volt, 8 Ampere Phase Control SCR.

Type	V <sub>DRM</sub> /V <sub>RRM</sub> Volts	Code
CR8AM	400	-8
	600	-12



Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

**CR8AM**

**Lead-mount, Phase Control SCR**

8 Amperes/400-600 Volts

**Absolute Maximum Ratings,  $T_a = 25\text{ }^\circ\text{C}$  unless otherwise specified**

Ratings	Symbol	CR8AM-8	CR8AM-12	Units
Repetitive Peak Off-state Voltage	$V_{DRM}$	400	600	Volts
Repetitive Peak Reverse Voltage	$V_{RRM}$	400	600	Volts
Non-repetitive Peak Reverse Voltage	$V_{RSM}$	500	720	Volts
DC Reverse Voltage	$V_{R(DC)}$	320	480	Volts
DC Forward Voltage	$V_{D(DC)}$	320	480	Volts
RMS On-state Current	$I_{T(RMS)}$	12.6	12.6	Amperes
Average On-state Current (Nominal, See Graphs) $T_C = 88^\circ\text{C}$	$I_{T(avg)}$	8	8	Amperes
Non-repetitive Peak Surge, On-state Current One Cycle (60 Hz)	$I_{TSM}$	120	120	Amperes
$I^2t$ for Fusing, $t = 8.3\text{ msec}$	$I^2t$	60	60	$\text{A}^2\text{sec}$
Peak Gate Power Dissipation	$P_{GM}$	5	5	Watts
Average Gate Power Dissipation	$P_{G(avg)}$	0.5	0.5	Watts
Peak Forward Gate Current	$I_{FGM}$	2	2	Amperes
Peak Forward Gate Voltage	$V_{FGM}$	6	6	Volts
Peak Reverse Gate Voltage	$V_{RGM}$	10	10	Volts
Storage Temperature	$T_{stg}$	-40 to 125	-40 to 125	$^\circ\text{C}$
Operating Junction Temperature	$T_j$	-40 to 125	-40 to 125	$^\circ\text{C}$
Weight	-	2.3	2.3	Grams



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**CR8AM**

**Lead-mount, Phase Control SCR**

8 Amperes/400-600 Volts

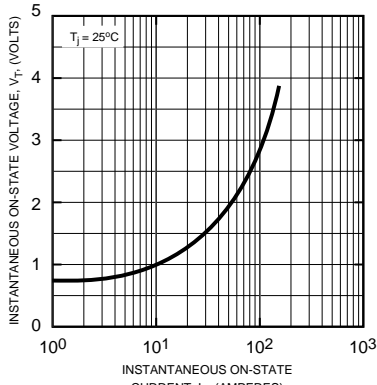
**Electrical and Thermal Characteristics,  $T_j = 25^\circ\text{C}$  unless otherwise specified**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Voltage – Blocking State						
Peak Forward Leakage	$I_{DRM}$	$T_j = 125^\circ\text{C}, V_D = V_{DRM}$	–	–	2	mA
Peak Reverse Leakage	$I_{RRM}$	$T_j = 125^\circ\text{C}, V_R = V_{RRM}$	–	–	2	mA
Current – Conducting State						
Peak On-state Voltage	$V_{TM}$	$T_C = 25^\circ\text{C}, I_{TM} = 25\text{A}$	–	–	1.4	Volts
DC Holding Current	$I_H$	$V_D = 12\text{V}, T_j = 25^\circ\text{C}$	–	15	–	mA
Thermal Resistance						
Junction-to-case	$R_{th(j-c)}$	–	–	–	3	$^\circ\text{C}/\text{W}$
Gate – Parameters						
Gate Current to Trigger	$I_{GT}$	$V_D = 6\text{V}, R_L = 6\Omega, T_j = 25^\circ\text{C}$	–	–	15	mA
Gate Voltage to Trigger	$V_{GT}$	$V_D = 6\text{V}, R_L = 6\Omega, T_j = 25^\circ\text{C}$	–	–	1.0	Volts
Non-triggering Gate Voltage	$V_{GD}$	$V_D = 1/2V_{DRM}, T_j = 125^\circ\text{C}$	0.2	–	–	Volts

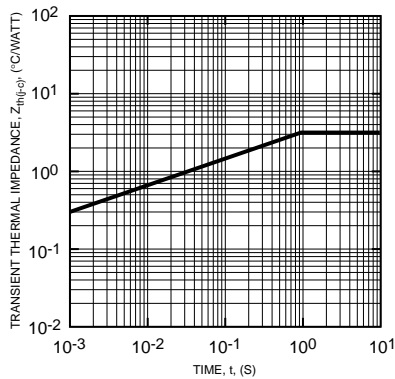
## CR8AM

Lead-mount, Phase Control SCR  
8 Amperes/400-600 Volts

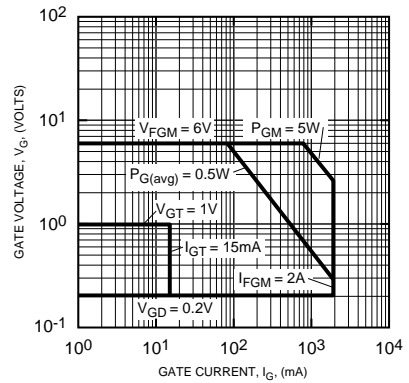
**MAXIMUM ON-STATE CHARACTERISTICS**



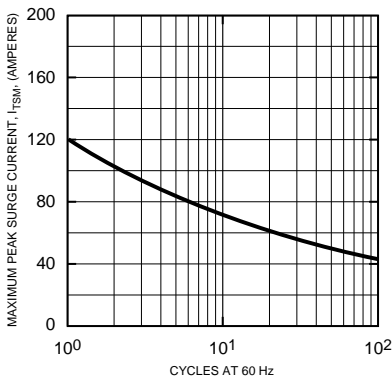
**TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE)**



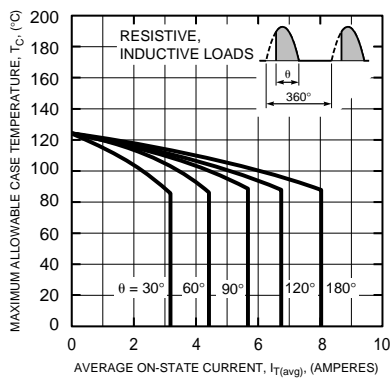
**GATE CHARACTERISTICS**



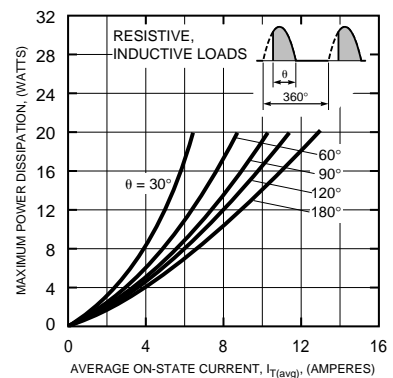
**MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS**



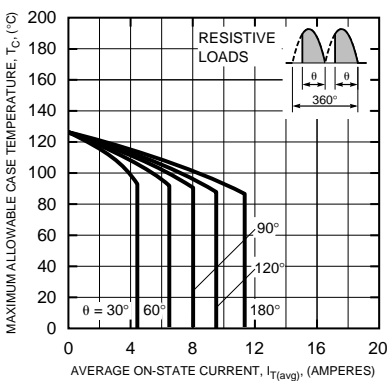
**MAXIMUM ALLOWABLE CASE TEMPERATURE (SINGLE-PHASE HALF WAVEFORM)**



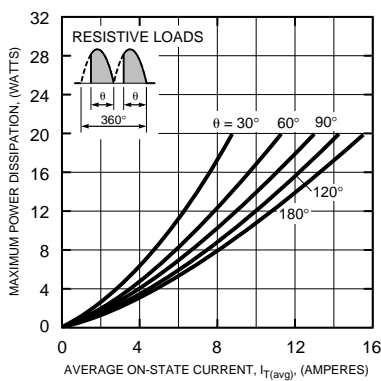
**MAXIMUM ON-STATE POWER DISSIPATION (SINGLE-PHASE HALF WAVEFORM)**



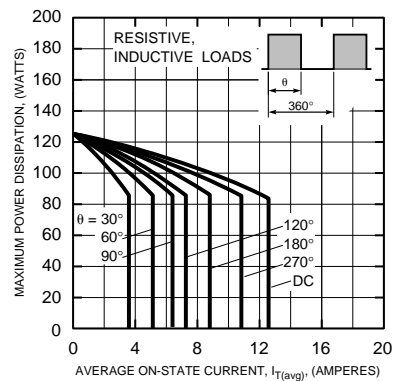
**MAXIMUM ALLOWABLE CASE TEMPERATURE (SINGLE-PHASE FULL WAVEFORM)**



**MAXIMUM ON-STATE POWER DISSIPATION (SINGLE-PHASE FULL WAVEFORM)**



**MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM)**



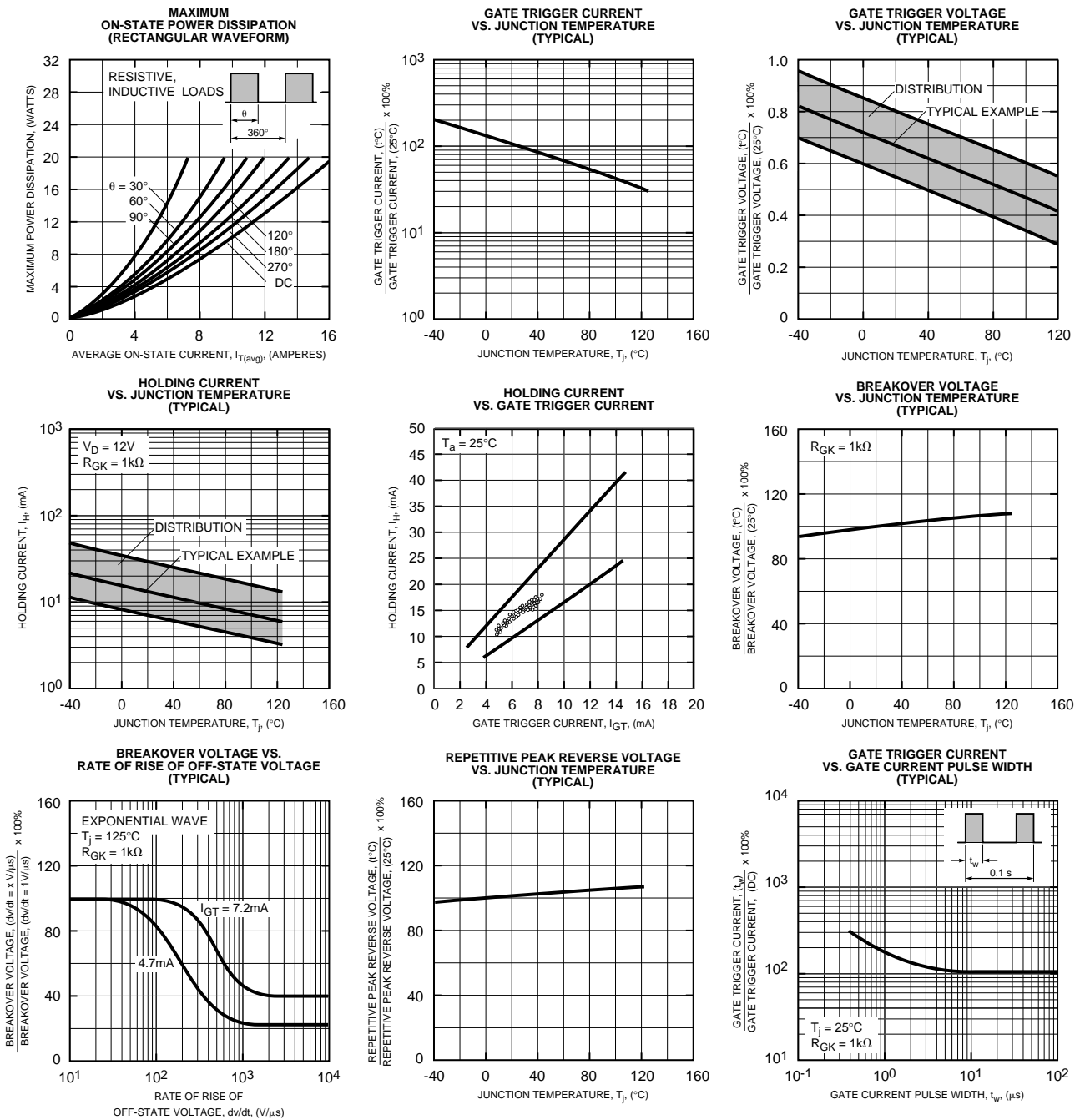


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**CR8AM**

**Lead-mount, Phase Control SCR**

8 Amperes/400-600 Volts

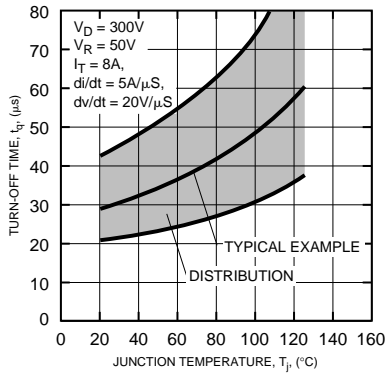


## CR8AM

### Lead-mount, Phase Control SCR

8 Amperes/400-600 Volts

TURN-OFF TIME  
VS. JUNCTION TEMPERATURE  
(TYPICAL)



TURN-ON TIME  
VS. GATE CURRENT  
(TYPICAL)

