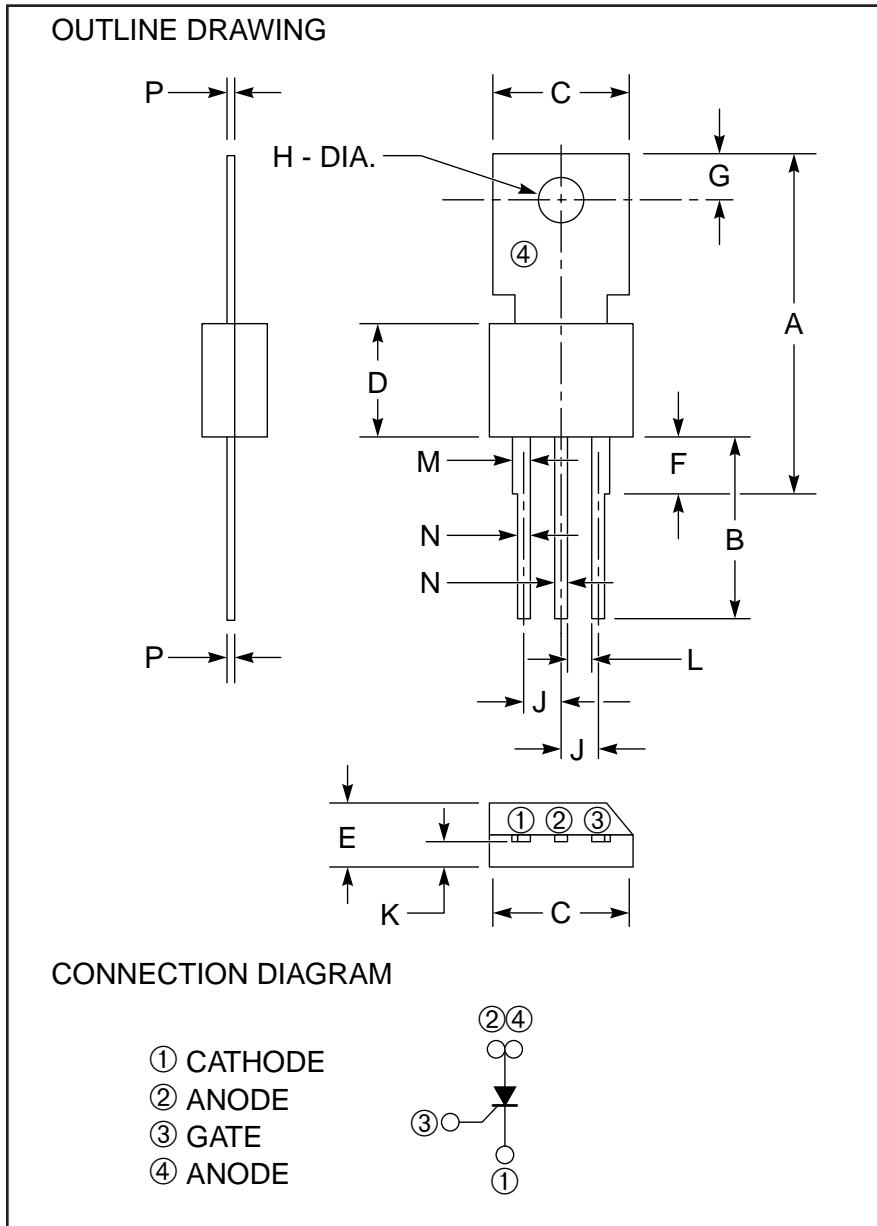


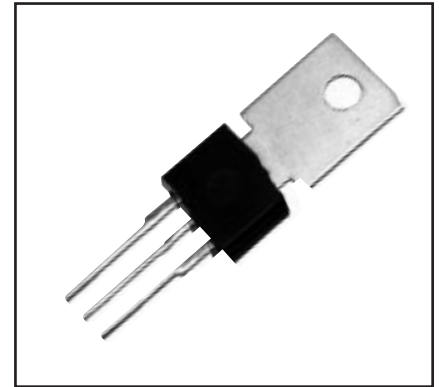
### Lead-mount, Phase Control SCR 3 Amperes/400-600 Volts



Outline Drawing (Conforms to JEDEC TO-202)

Dimensions	Inches	Millimeters
A	0.93 ± 0.02	23.7 ± 0.5
B	0.47 Min.	12.0 Mon.
C	0.39 Max.	10.0 Max.
D	0.31 Max.	8.0 Max.
E	0.18 Max.	4.5 Max.
F	0.16 Max.	4.0 Max.
G	0.126 ± 0.008	3.2 ± 0.2

Dimensions	Inches	Millimeters
H	0.126 ± 0.004 Dia.	3.2 ± 0.1 Dia.
J	0.10	2.5
K	0.061	1.55
L	0.06	1.5
M	0.05	1.2
N	0.03	0.8
P	0.02	0.5



**Description:**

The Powerex CR3CM Lead-mount Phase Control SCRs are glass-passivated thyristors for use in low power control and rectification. These devices are molded silicone plastic types.

**Features:**

- Glass Passivated

**Applications:**

- Static Switch
- Motor Control
- Strobe Flasher

**Ordering Information:**

Example: Select the complete six or seven digit part number you desire from the table - i.e. CR3CM-8 is a 400 Volt, 3 Ampere Phase Control SCR.

Type	V <sub>DRM</sub> /V <sub>RRM</sub> Volts	Code
CR3CM	400	-8
	600	-12

**CR3CM**

**Lead-mount, Phase Control SCR**

3 Amperes/400-600 Volts

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

Ratings	Symbol	CR3CM-8	CR3CM-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	$I_{T(RMS)}$	4.7	4.7	Amperes
Average On-state Current (Nominal, See Graphs) $T_a = 50\text{ }^\circ\text{C}$	$I_{T(avg)}$	3	3	Amperes
Non-repetitive Peak Surge, On-state Current One Cycle (60 Hz)	$I_{TSM}$	90	90	Amperes
$I^2t$ for Fusing, $t = 8.3$ msec	$I^2t$	33	33	$A^2\text{sec}$
Peak Gate Power Dissipation	$P_{GM}$	0.5	0.5	Watts
Average Gate Power Dissipation	$P_{G(avg)}$	0.1	0.1	Watts
Peak Forward Gate Current	$I_{FGM}$	0.3	0.3	Amperes
Peak Forward Gate Voltage	$V_{FGM}$	6	6	Volts
Peak Reverse Gate Voltage	$V_{RGM}$	6	6	Volts
Storage Temperature	$T_{stg}$	-40 to 125	-40 to 125	$^\circ\text{C}$
Operating Junction Temperature	$T_j$	-40 to 110	-40 to 110	$^\circ\text{C}$
Weight	-	1.6	1.6	Grams

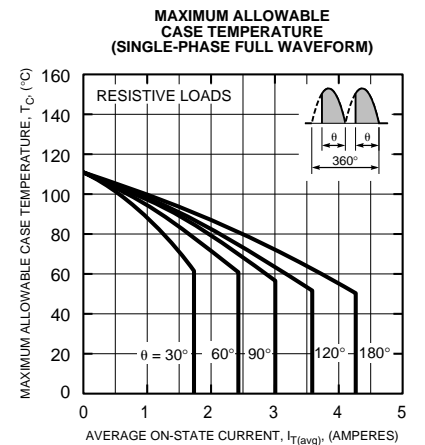
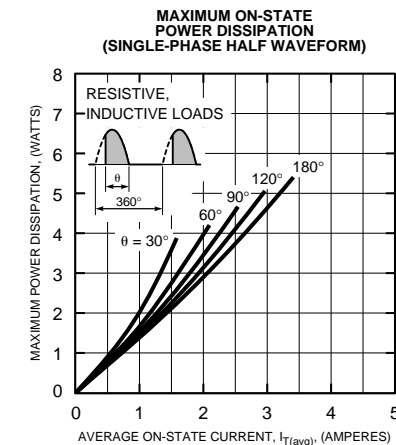
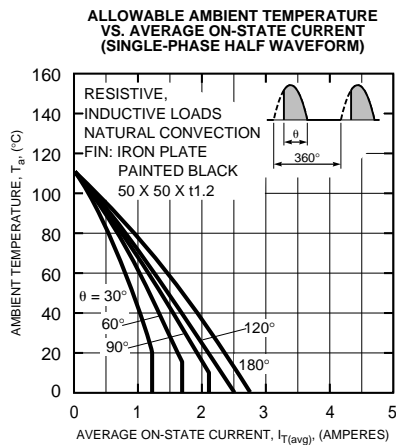
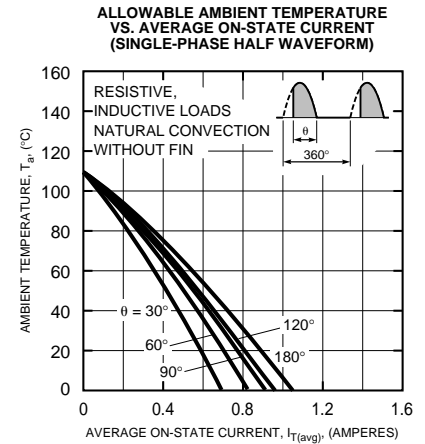
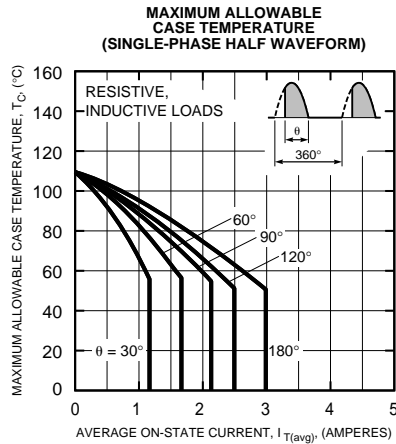
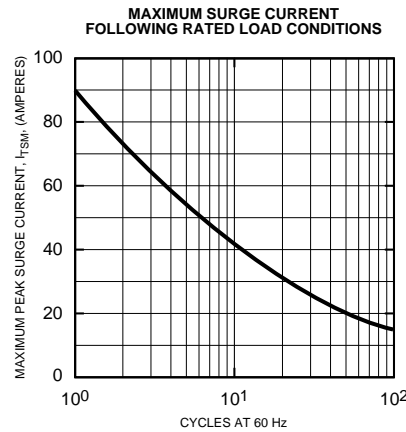
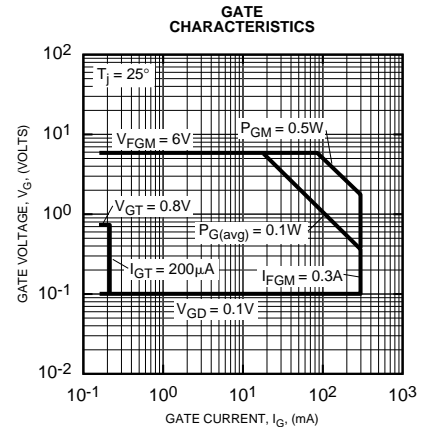
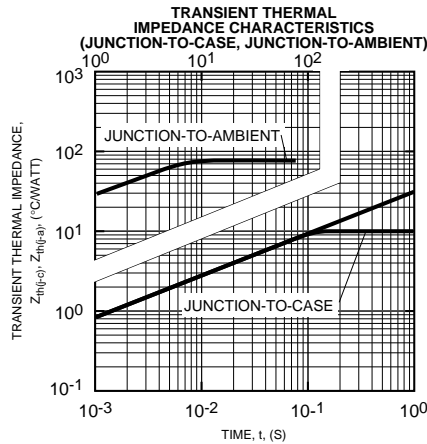
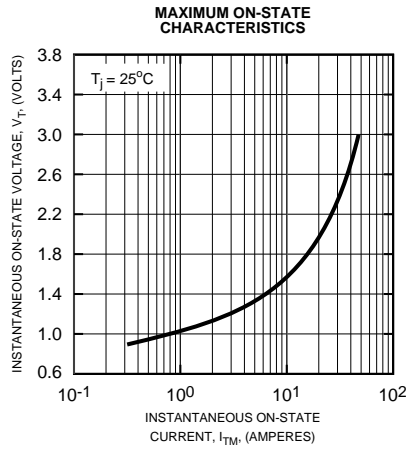
**Electrical and Thermal Characteristics,  $T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified**

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Voltage – Blocking State Maximums						
Peak Forward Leakage	$I_{DRM}$	$T_j = 110\text{ }^\circ\text{C}$ , $V_D = V_{DRM}$	-	-	1.0	mA
Peak Reverse Leakage	$I_{RRM}$	$T_j = 110\text{ }^\circ\text{C}$ , $V_R = V_{RRM}$	-	-	1.0	mA
Current – Conducting State Maximums						
Peak On-state Voltage	$V_{TM}$	$T_c = 25\text{ }^\circ\text{C}$ , $I_{TM} = 10\text{ A}$	-	-	1.6	Volts
Thermal Resistance, Junction-to-case	$R_{th(j-c)}$	-	-	-	10	$^\circ\text{C/W}$
Gate – Maximum Parameters						
Gate Current to Trigger	$I_{GT}$	$V_D = 6\text{ V}$ , $R_L = 60\Omega$ , $T_j = 25\text{ }^\circ\text{C}$	1	-	200	$\mu\text{A}$
Gate Voltage to Trigger	$V_{GT}$	$V_D = 6\text{ V}$ , $R_L = 60\Omega$ , $T_j = 25\text{ }^\circ\text{C}$	-	-	0.8	Volts
Minimum Non-triggering Gate Voltage	$V_{GD}$	$V_D = 1/2V_{DRM}$ , $R_{GK} = 1\text{ k}\Omega$ , $T_j = 110\text{ }^\circ\text{C}$	0.1	-	-	Volts

## CR3CM

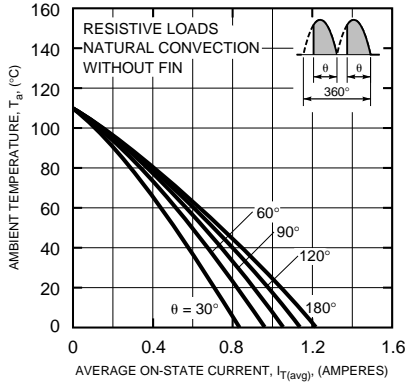
### Lead-mount, Phase Control SCR

3 Amperes/400-600 Volts

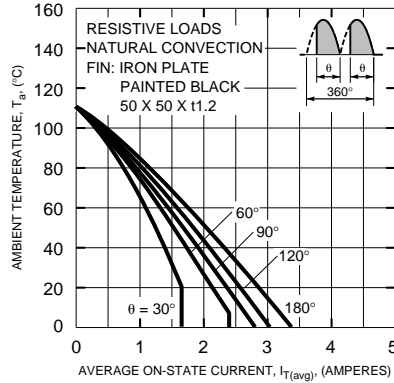


**CR3CM**  
**Lead-mount, Phase Control SCR**  
 3 Amperes/400-600 Volts

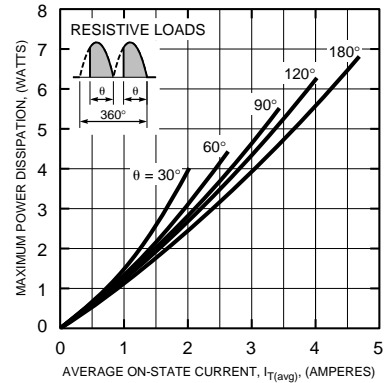
**ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVEFORM)**



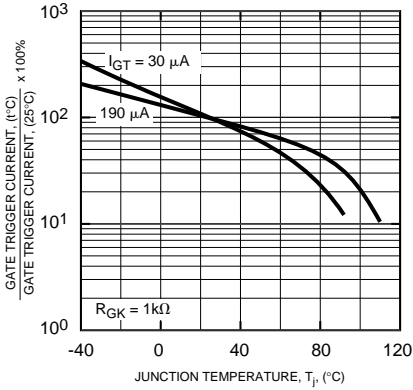
**ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVEFORM)**



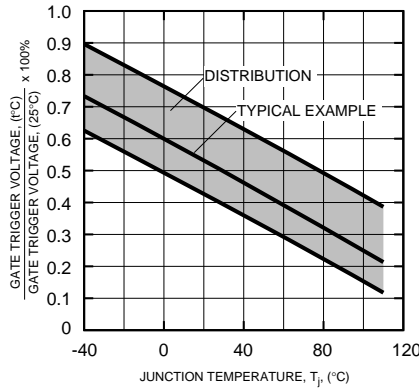
**MAXIMUM ON-STATE POWER DISSIPATION (SINGLE-PHASE FULL WAVEFORM)**



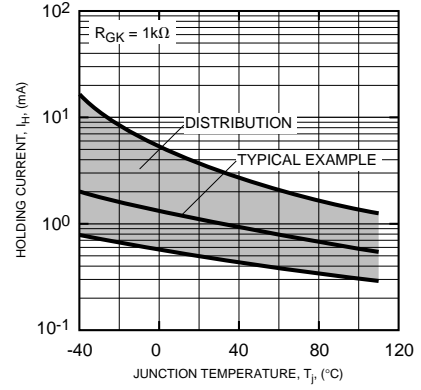
**GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)**



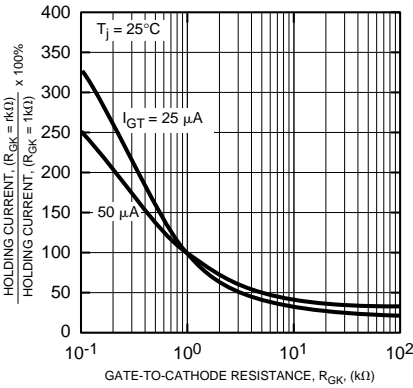
**GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)**



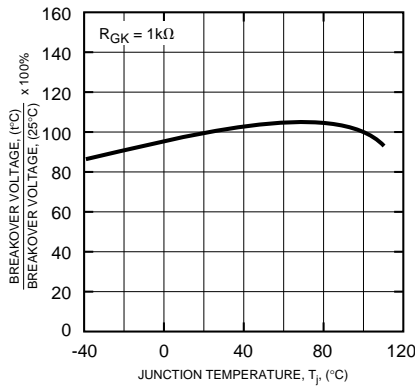
**HOLDING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)**



**HOLDING CURRENT VS. GATE-TO-CATHODE RESISTANCE (TYPICAL)**



**BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)**



**REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)**

