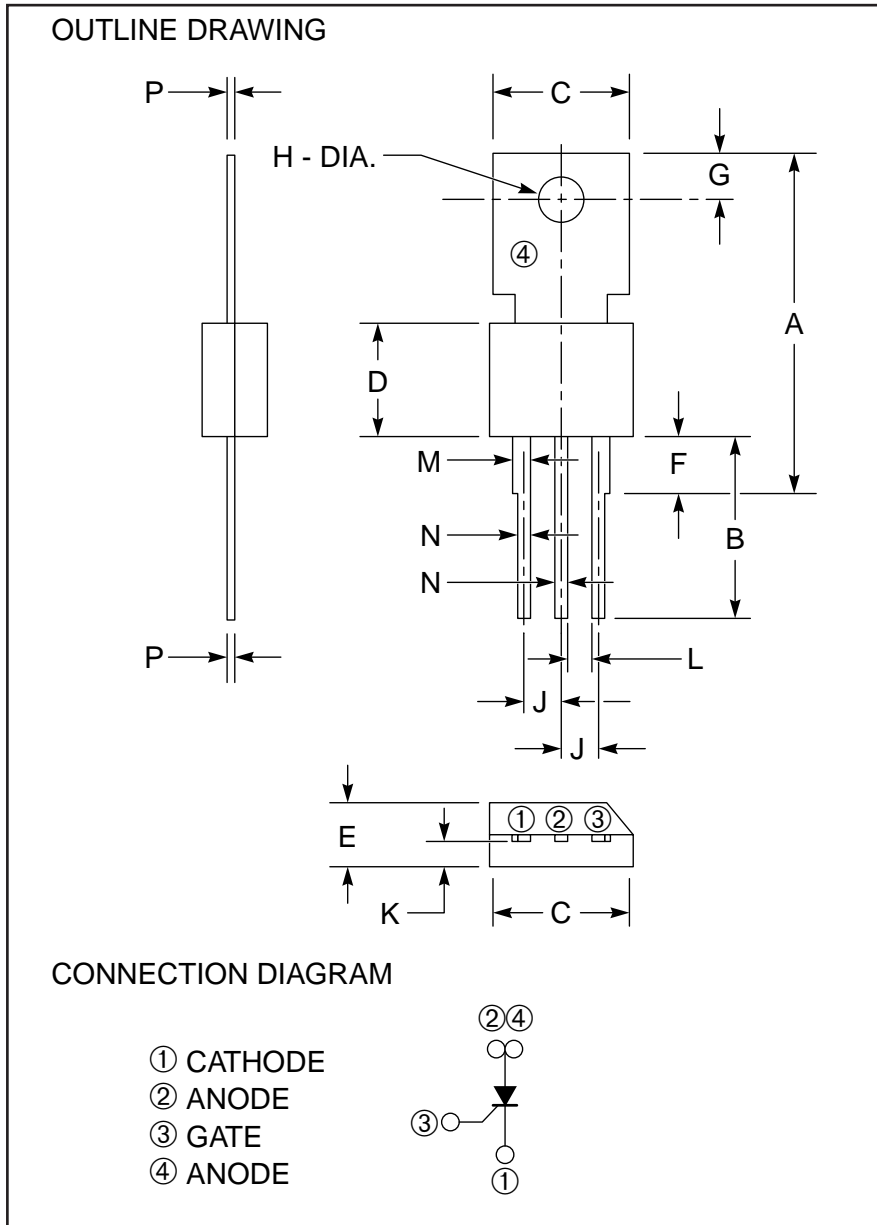


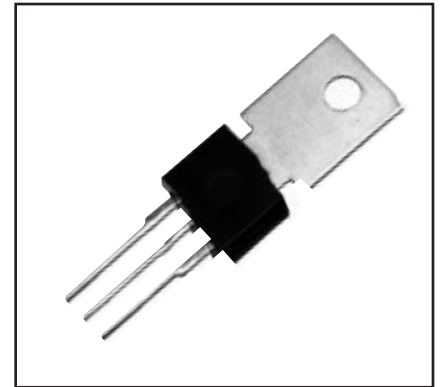
Lead-mount, Phase Control SCR 3 Amperes/400-600 Volts



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 ± 0.1Dia.
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 _{DRM} /V _{RRM} Volts	Code
CR3CM	400	-8
	600	-12



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

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^2sec
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

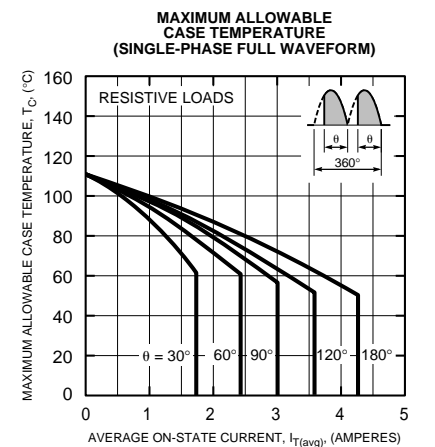
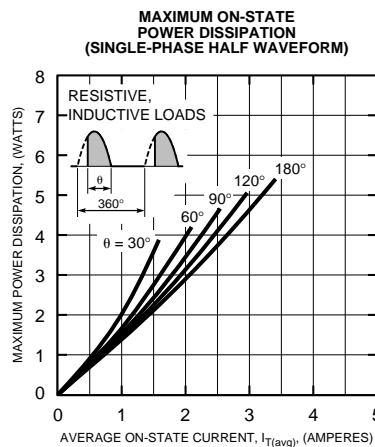
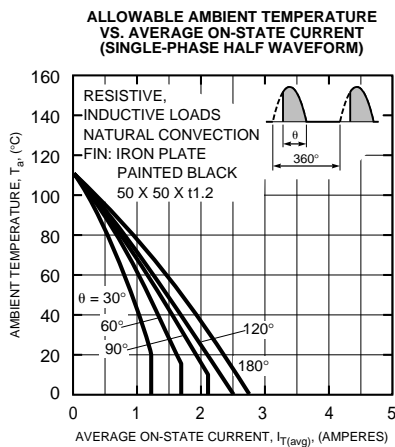
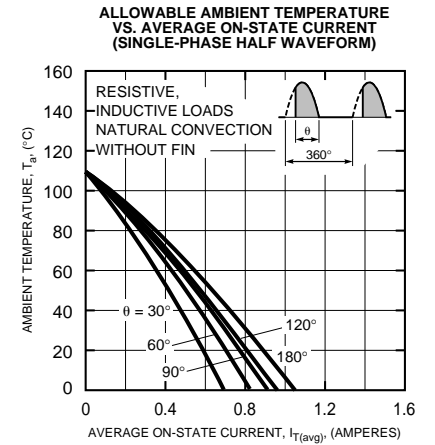
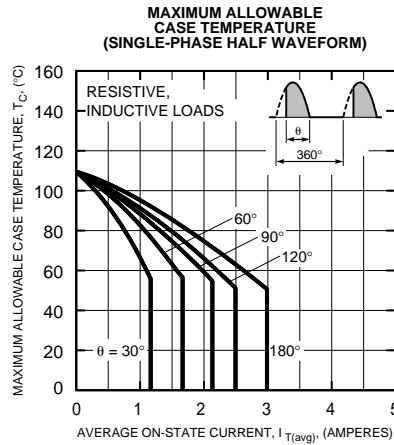
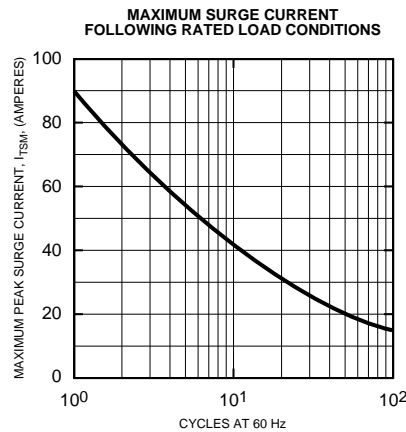
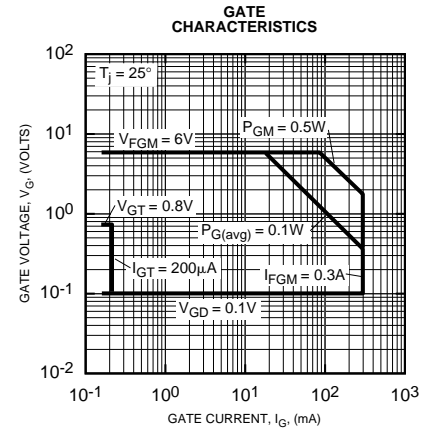
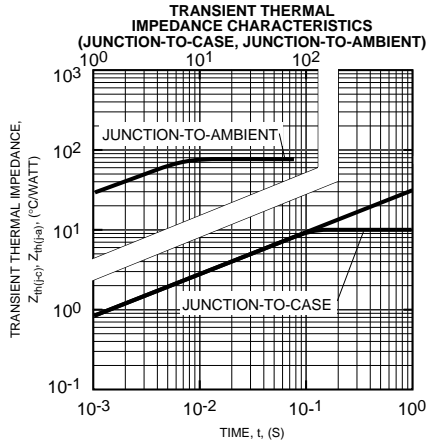
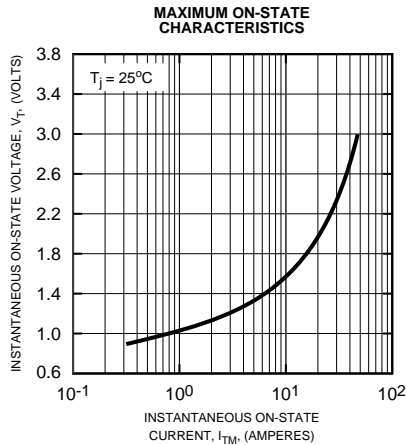
Electrical and Thermal Characteristics, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

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	μA
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



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

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

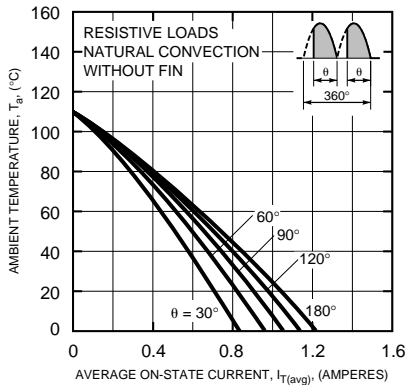




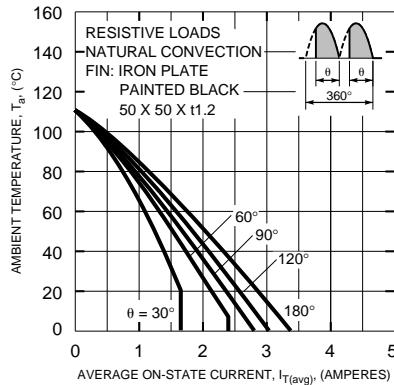
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

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

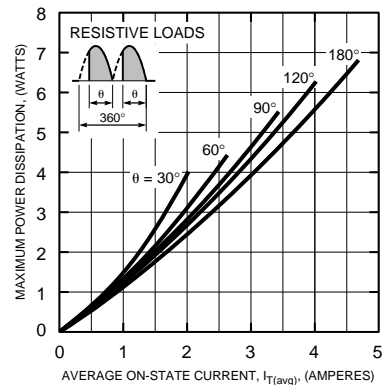
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVEFORM)



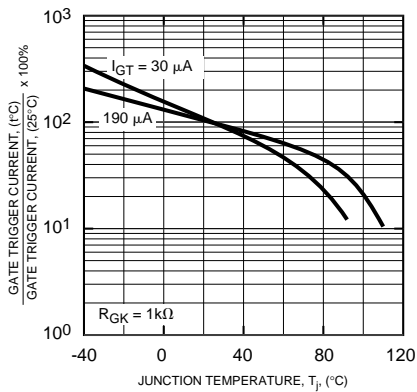
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVEFORM)



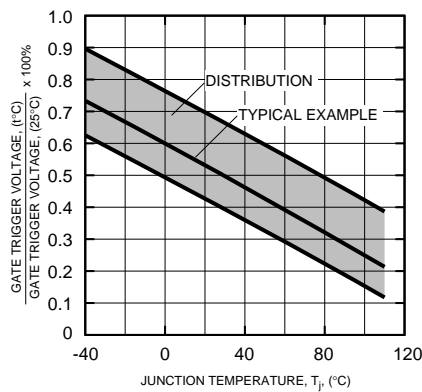
MAXIMUM ON-STATE POWER DISSIPATION (SINGLE-PHASE FULL WAVEFORM)



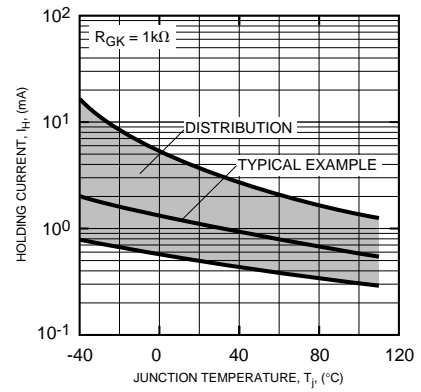
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



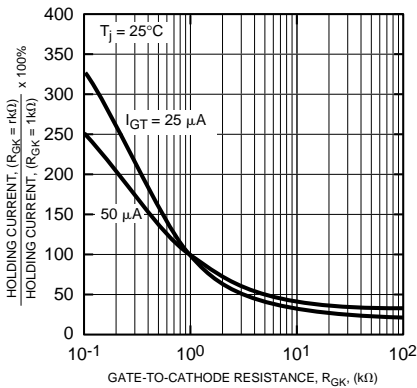
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



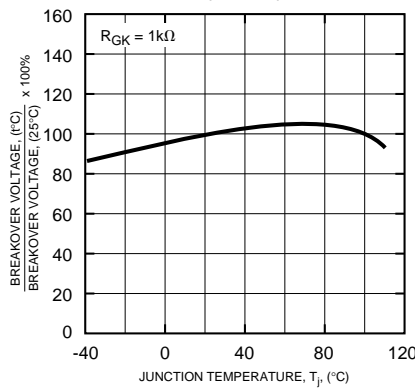
HOLDING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



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



BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



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

