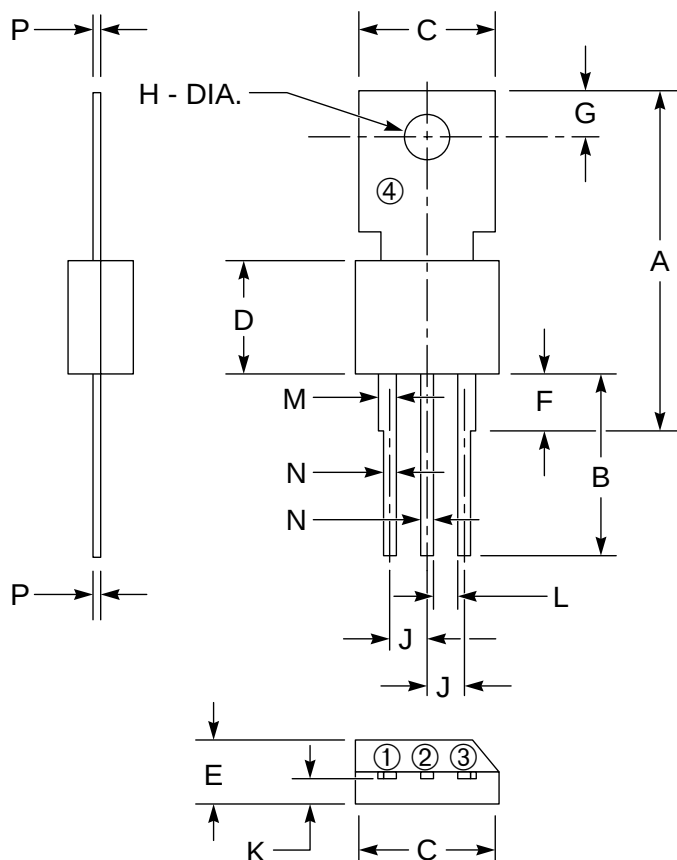


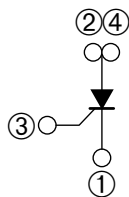
Lead-mount, Phase Control SCR 3 Amperes/400-600 Volts

OUTLINE DRAWING



CONNECTION DIAGRAM

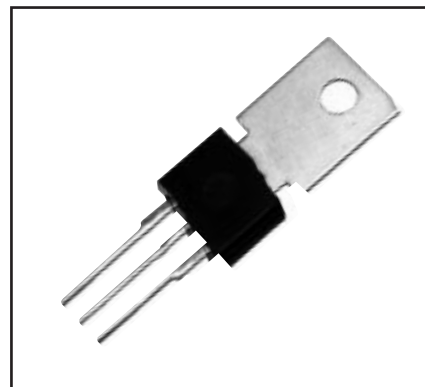
- ① CATHODE
- ② ANODE
- ③ GATE
- ④ ANODE



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

CR3CM

Lead-mount, Phase Control SCR

3 Amperes/400-600 Volts

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

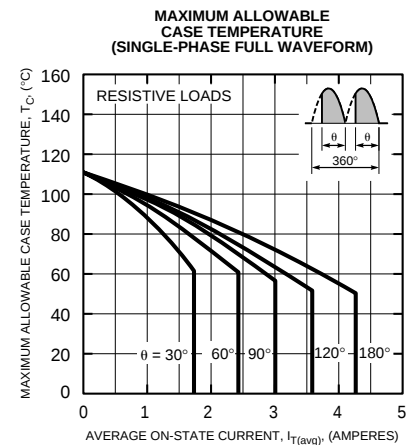
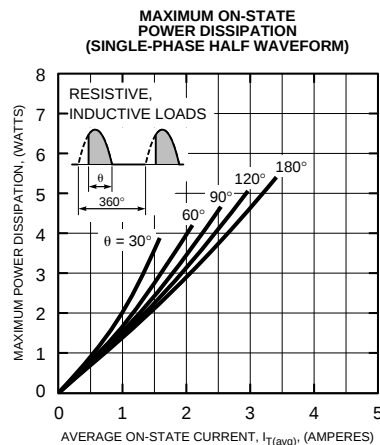
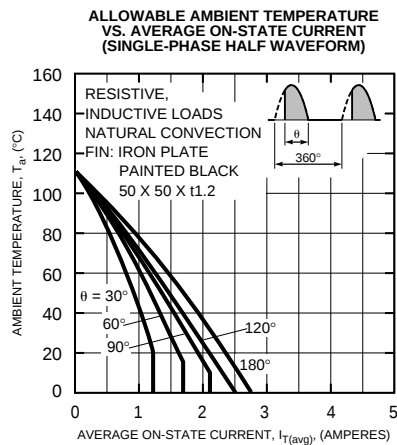
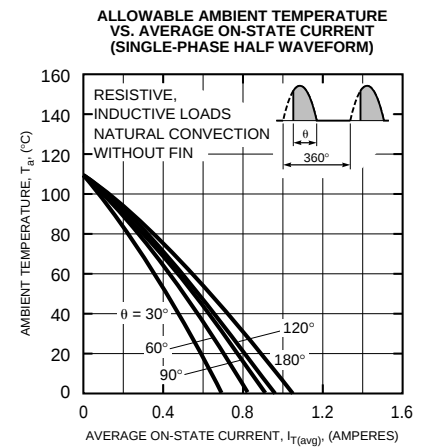
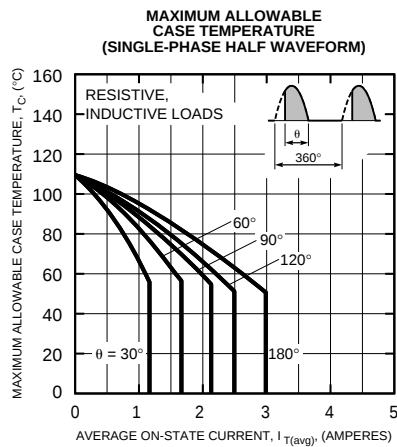
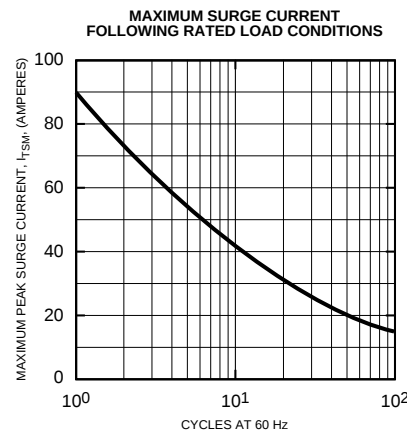
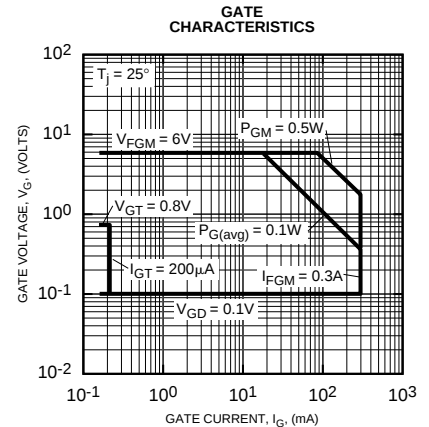
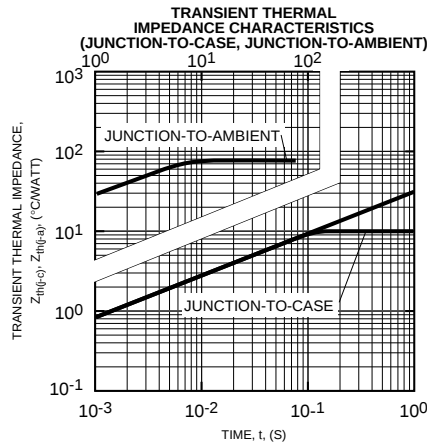
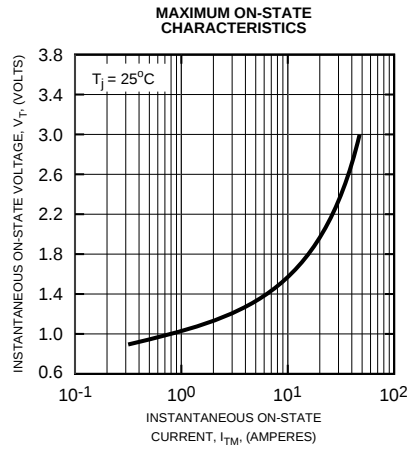
Ratings	Symbol	CR3CM-8	CR3CM-12	Units
Repetitive Peak Off-state Voltage	V_{DRM}	400	600	Volts
Repetitive Peak Reverse Voltage	V_{RRM}	400	600	Volts
Non-repetitive Peak Reverse Voltage	V_{RSM}	500	720	Volts
DC Reverse Voltage	$V_{\text{R(DC)}}$	320	480	Volts
DC Forward Voltage	$V_{\text{D(DC)}}$	320	480	Volts
RMS On-state Current	$I_{\text{T(RMS)}}$	4.7	4.7	Amperes
Average On-state Current (Nominal, See Graphs) $T_a = 50^\circ\text{C}$	$I_{\text{T(avg)}}$	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	$P_{\text{G(avg)}}$	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, $T_j = 25^\circ\text{C}$ unless otherwise specified

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

CR3CM

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

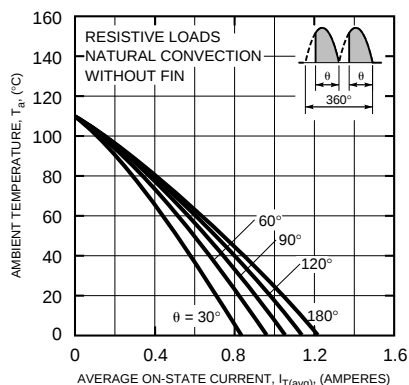


CR3CM

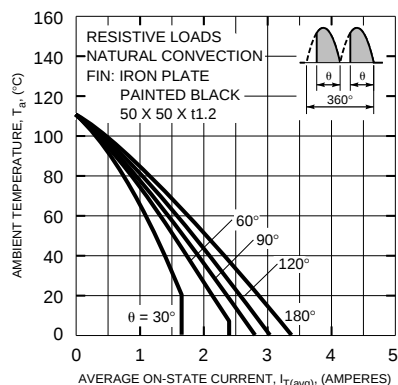
Lead-mount, Phase Control SCR

3 Amperes/400-600 Volts

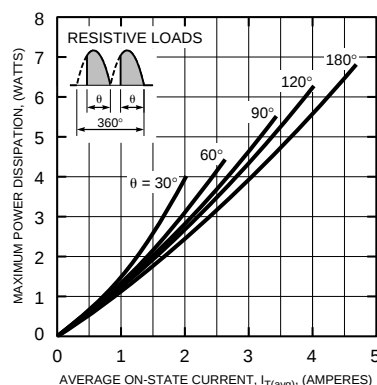
ALLOWABLE AMBIENT TEMPERATURE
VS. AVERAGE ON-STATE CURRENT
(SINGLE-PHASE FULL WAVEFORM)



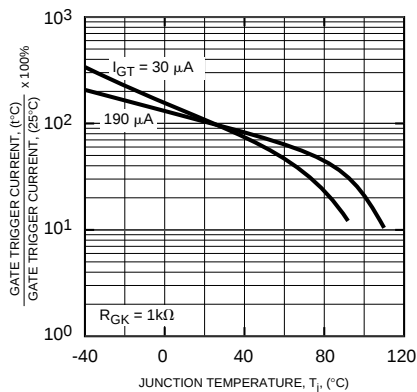
ALLOWABLE AMBIENT TEMPERATURE
VS. AVERAGE ON-STATE CURRENT
(SINGLE-PHASE FULL WAVEFORM)



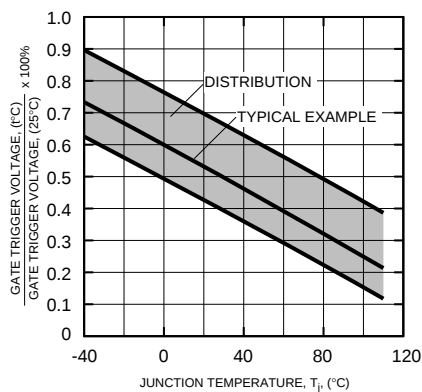
MAXIMUM ON-STATE
POWER DISSIPATION
(SINGLE-PHASE FULL WAVEFORM)



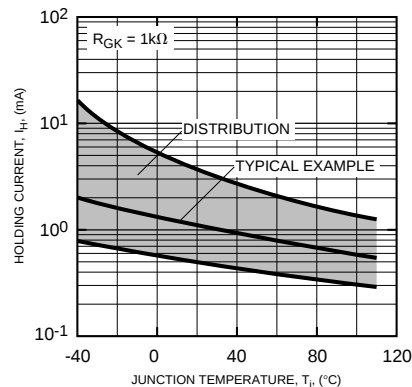
GATE TRIGGER CURRENT
VS. JUNCTION TEMPERATURE
(TYPICAL)



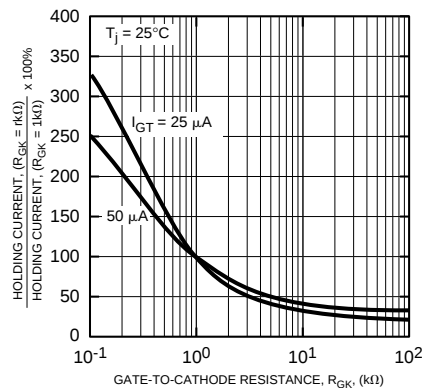
GATE TRIGGER VOLTAGE
VS. JUNCTION TEMPERATURE
(TYPICAL)



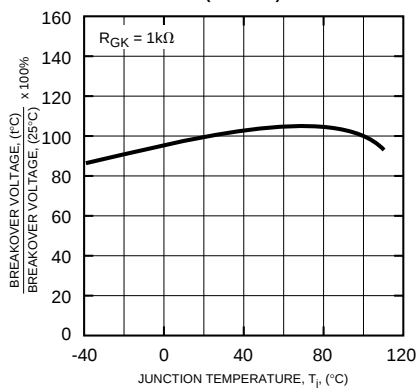
HOLDING CURRENT VS.
JUNCTION TEMPERATURE
(TYPICAL)



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



BREAKOVER VOLTAGE VS.
JUNCTION TEMPERATURE
(TYPICAL)



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

