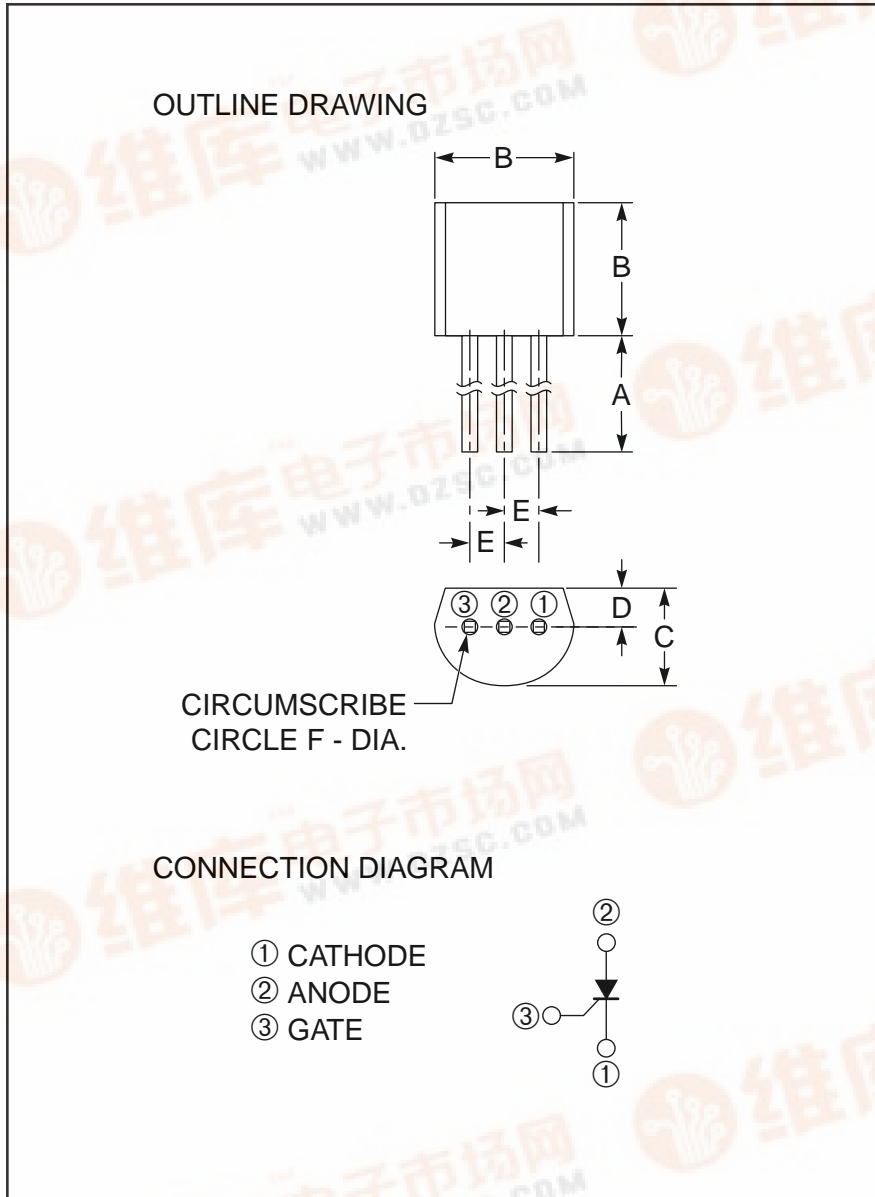




CR04AM

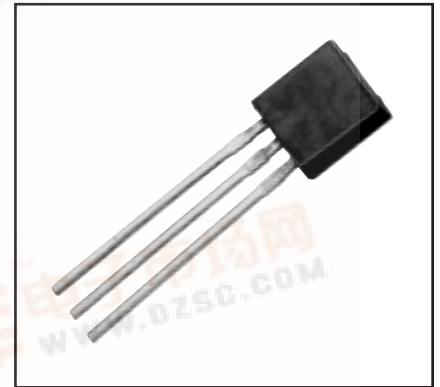
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

**Lead-Mount,
Phase Control SCR
0.4 Amperes/400-600 Volts**



Outline Drawing (Conforms to JEDEC TO-92)

Dimensions	Inches	Millimeters
A	0.5 Min.	12.5 Min.
B	0.20 Max.	5.0 Max.
C	0.15 Max.	3.9 Max.
D	0.05	1.3
E	0.05	1.25
F	0.028 Dia.	0.7 Dia.



Description:

The Powerex CR04AM Lead Mounted, Phase Control SCRs are glass-passivated thyristors for use in low power control and rectification. These devices are molded silicone plastic types.

Features:

- Glass Passivation
- Short Turn-on Time – Suitable to Pulse Use

Applications:

- Phase Control
- Triggering of High Power Thyristors, Pulse Generators and Counters
- Static Switch
- Motor Control
- Strobe Flasher

Ordering Information:

Example: Select the complete seven or eight digit part number you desire from the table - i.e. CR04AM-8 is a 400 Volt, 0.4 Ampere Phase Control SCR.

Type	V _{DRM} /V _{RRM} Volts	Code
CR04AM	400	-8
	600	-12





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CR04AM

Lead-Mount, Phase Control SCR

0.4 Amperes/400-600 Volts

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

Ratings	Symbol	CR04AM-8	CR04AM-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	$I_{T(RMS)}$	0.63	0.63	Amperes
Average On-state Current (Nominal, See Graphs) $T_a = 54\text{ }^\circ\text{C}$	$I_{T(avg)}$	0.4	0.4	Amperes
Non-repetitive Peak Surge, On-state Current One Cycle (60 Hz)	I_{TSM}	10	10	Amperes
I^2t for Fusing, $t = 8.3\text{ msec}$	I^2t	0.4	0.4	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 Temperature	T_j	-40 to 125	-40 to 125	$^\circ\text{C}$
Weight	-	0.23	0.23	Grams



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CR04AM

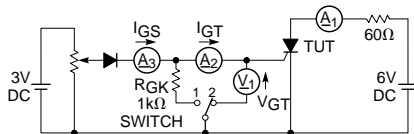
Lead-Mount, Phase Control SCR

0.4 Amperes/400-600 Volts

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						
Peak Forward Leakage	I_{DRM}	$T_j = 125^\circ\text{C}, V_D = V_{DRM}$	–	–	0.5	mA
Peak Reverse Leakage	I_{RRM}	$T_j = 125^\circ\text{C}, V_R = V_{RRM}$	–	–	0.5	mA
Current – Conducting State						
Peak On-state Voltage	V_{TM}	$T_a = 25^\circ\text{C}, I_{TM} = 1.2\text{A}$	–	–	1.2	Volts
DC Holding Current	I_H	$V_D = 12\text{V}, R_{GK} = 1\text{k}\Omega, T_j = 25^\circ\text{C}$	–	1.5	3.0	mA
Thermal Resistance, Junction-to-ambient	$R_{th(j-a)}$	–	–	–	150	$^\circ\text{C/W}$
Gate – Parameters						
Gate Current to Trigger†	I_{GT}	$V_D = 6\text{V}, R_L = 60\Omega, T_j = 25^\circ\text{C}$	1	–	100	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
Non-triggering Gate Voltage	V_{GD}	$V_D = 1/2V_{DRM}, R_{GK} = 1\text{k}\Omega, T_j = 125^\circ\text{C}$	0.2	–	–	Volts

† I_{GT}, V_{GT} Measurement Circuit



SWITCH 1: I_{GT} Measurement
 SWITCH 2: V_{GT} Measurement
 (Inner resistance of voltage meter is about $1\text{k}\Omega$)



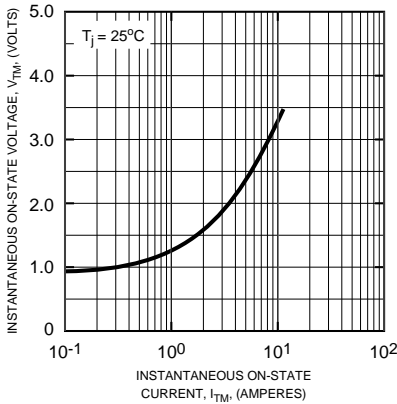
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CR04AM

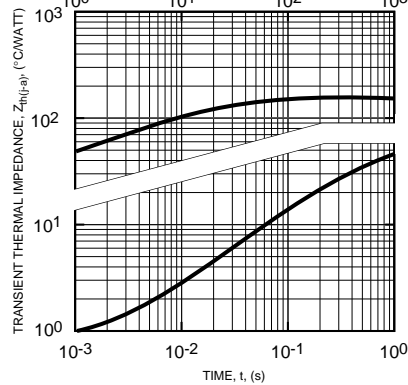
Lead-Mount, Phase Control SCR

0.4 Amperes/400-600 Volts

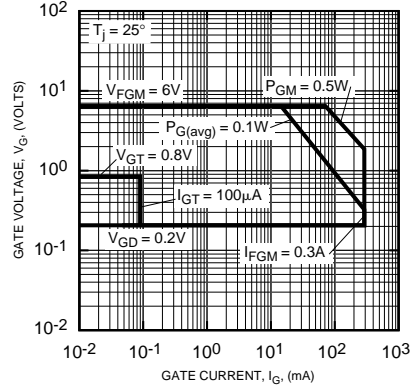
MAXIMUM ON-STATE CHARACTERISTICS



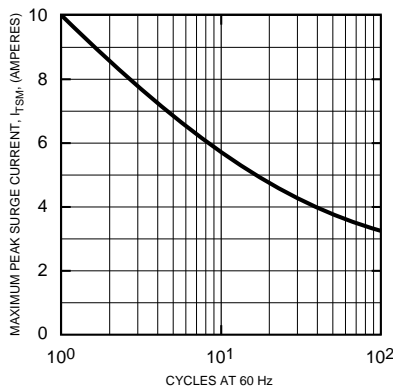
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-AMBIENT)



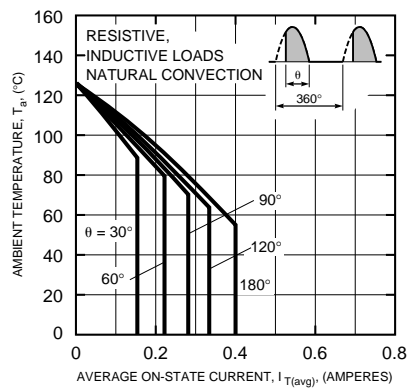
GATE CHARACTERISTICS



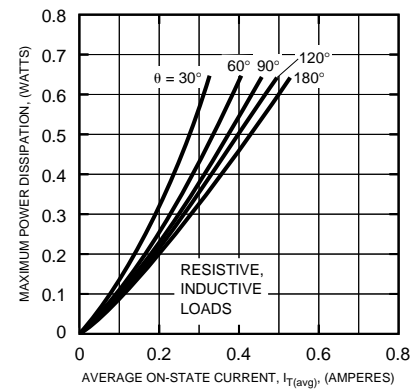
MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS



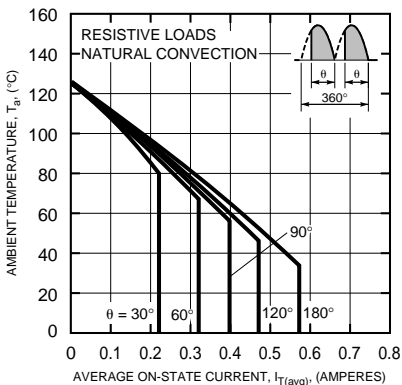
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVEFORM)



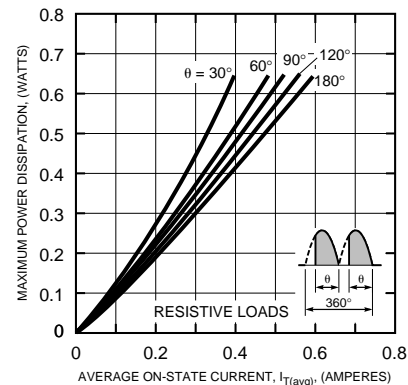
MAXIMUM ON-STATE POWER DISSIPATION (SINGLE-PHASE HALF WAVEFORM)



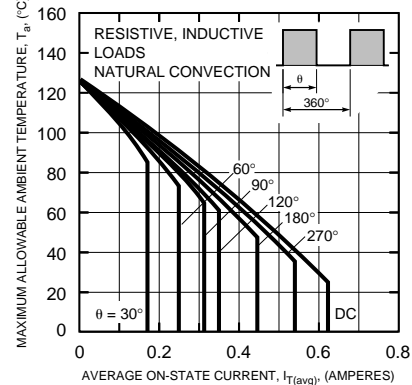
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVEFORM)



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



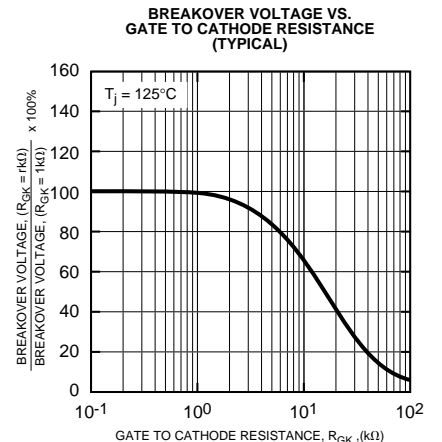
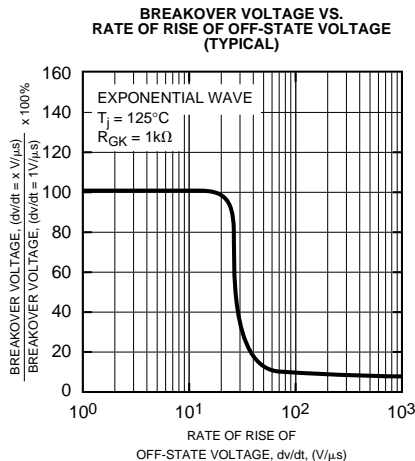
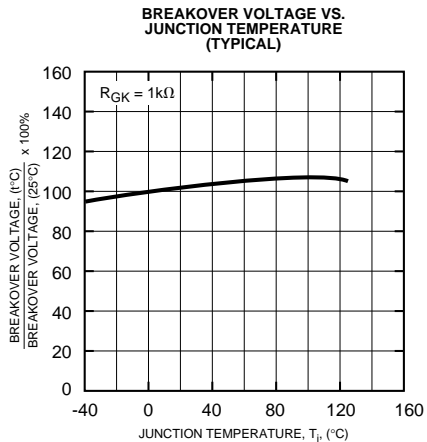
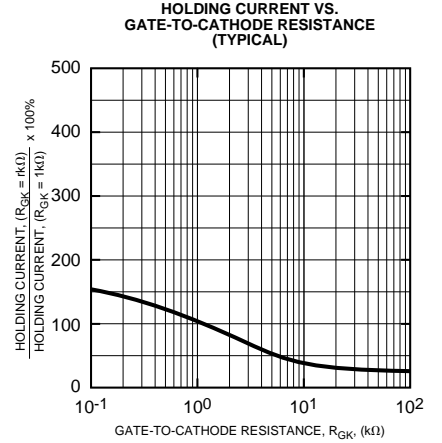
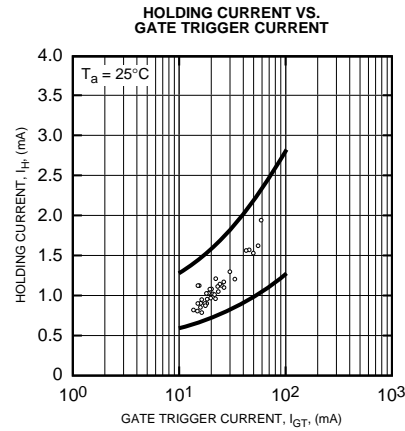
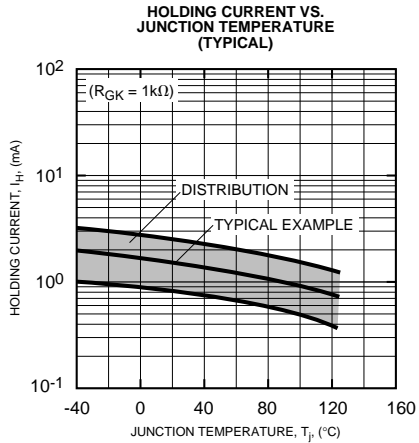
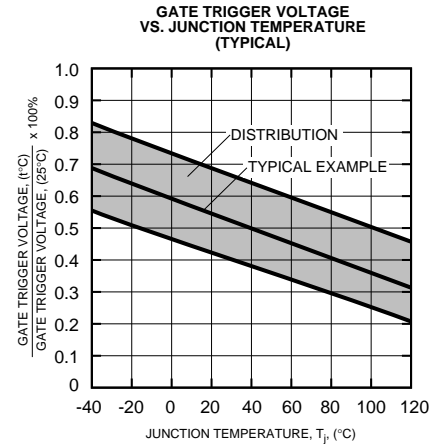
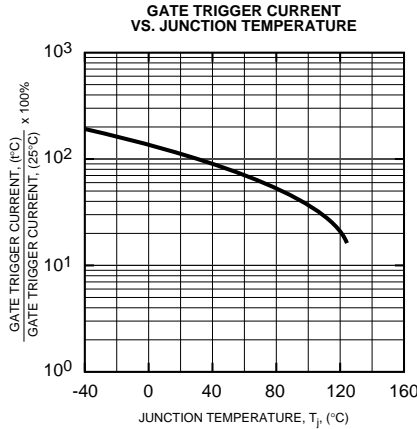
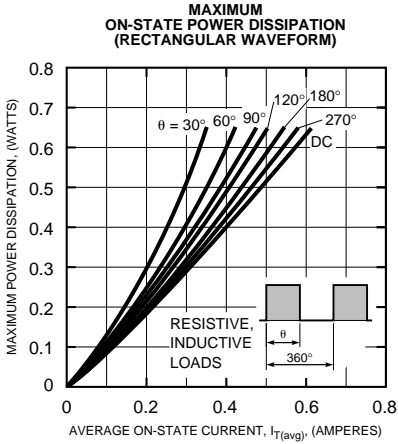
MAXIMUM ALLOWABLE AMBIENT TEMPERATURE (RECTANGULAR WAVEFORM)





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CR04AM
Lead-Mount, Phase Control SCR
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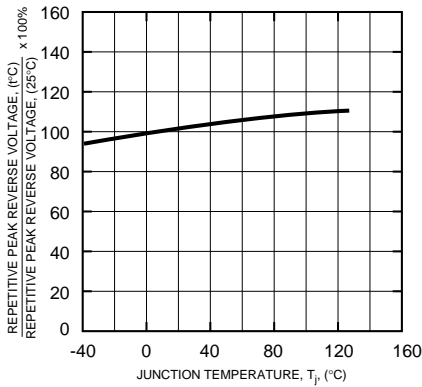
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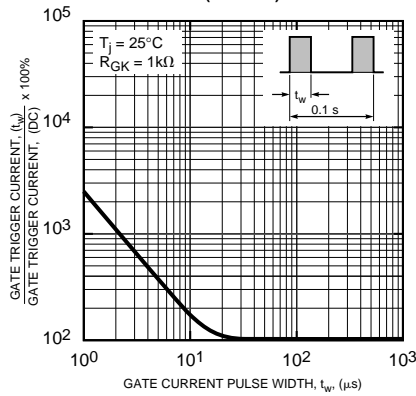
Lead-Mount, Phase Control SCR

0.4 Amperes/400-600 Volts

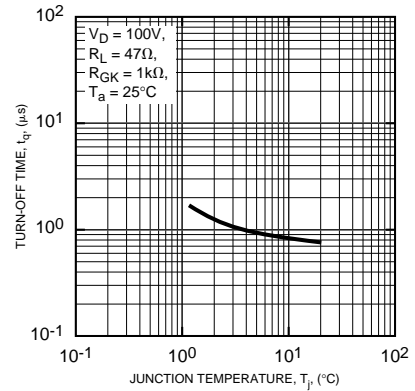
REPETITIVE PEAK REVERSE VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH (TYPICAL)



TURN-OFF TIME VS. JUNCTION TEMPERATURE (TYPICAL)



TURN-ON TIME VS. GATE CURRENT (TYPICAL)

