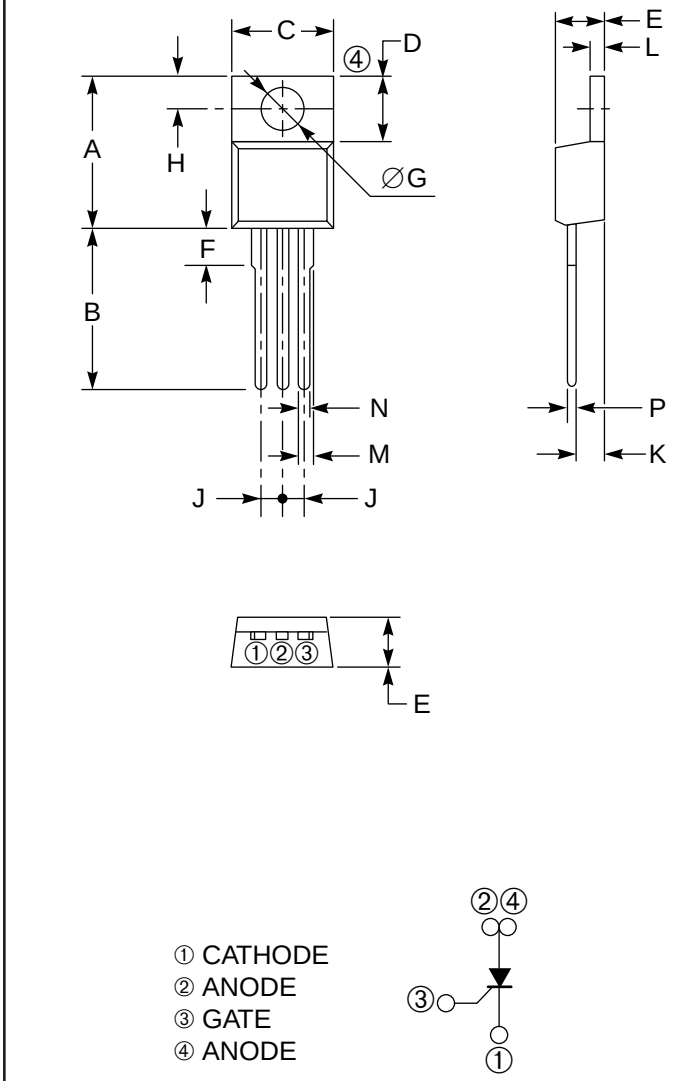
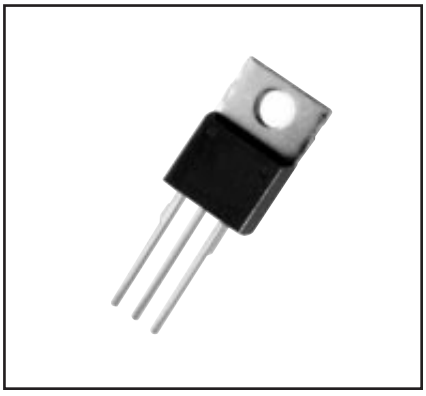
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272

Inverter SCR for Strobe Flasher Applications

0.8 Amperes/400 Volts





Description:
The Powerex CR3JM is a glass passivated and molded silicone plastic thyristor for use in automatic strobe flashers.

Features:
- ☐ Large Pulse
- ☐ Glass Passivation
- ☐ Short Turn-off Time
- ☐ Easy Application for Printed Circuits

Applications:
- ☐ Strobe Flasher

Ordering Information:
Example: Select the complete six digit part number you desire from the table - i.e. CR3JM-8 is a 400 Volt, 0.8 Ampere Average SCR.

Type	V_{DRM}/V_{RRM} Volts	Code	Current Rating, $I_{T(avg)}$ Amperes (0.8)
CR3JM	400	-8	–

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 Max.	10.5 Max.
D	0.28	7.0
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	0.99	2.54
K	0.10	2.6
L	0.051	1.3
M	0.051	1.3
N	0.031	0.8
P	0.020	0.5

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Absolute Maximum Ratings, T_a = 25 °C unless otherwise specified

Ratings	Symbol	CR3JM-8	Units
Repetitive Peak Off-state Voltage	V_{DRM}	400	Volts
Repetitive Peak Reverse Voltage	V_{RRM}	400	Volts
Non-repetitive Peak Off-state Voltage	V_{DJM}	480	Volts
Non-repetitive Peak Reverse Voltage	V_{RSM}	480	Volts
Average On-state Current (Nominal, See Graphs) T_a = 37°C	$I_{T(avg)}$	0.8	Amperes
Repetitive Peak On-state Current	I_{TRM}	240	Amperes
Peak Gate Power Dissipation	P_{GM}	3	Watts
Average Gate Power Dissipation	$P_{G(avg)}$	0.3	Watts
Peak Forward Gate Current	I_{FGM}	1	Amperes
Peak Forward Gate Voltage	V_{FGM}	6	Volts
Peak Reverse Gate Voltage	V_{RGM}	6	Volts
Storage Temperature	$T_{(stg)}$	-40 to 125	°C
Operating Junction Temperature	T_j	-40 to 125	°C
Weight	–	2	Grams

Electrical and Thermal Characteristics

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Voltage Blocking State						
Peak Forward Leakage	I_{DRM}	T_j = 25°C, V_{DRM} = Rated	–	–	0.1	mA
Peak Reverse Leakage	I_{RRM}	T_j = 25°C, V_{RRM} = Rated	–	–	0.1	mA
Current – Conducting State						
Peak On-state Voltage	V_{TM}	T_c = 25°C, I_{TM} = 3A Peak	–	–	1.8	Volts
Gate – Parameters						
Gate Current to Trigger	I_{GT}	V_D = 6V, R_L = 6Ω, T_j = 25°C	–	–	50	mA
Gate Voltage to Trigger	V_{GT}	V_D = 6V, R_L = 6Ω, T_j = 25°C	–	–	2	Volts
Non-triggering Gate Voltage	V_{GD}	V_D = 1/2V_{DRM}, T_j = 125°C	0.1	–	–	Volts
Commutating Capacitor	C_C	C_M = 1800μF, V_{CM} = 350V, I_{TM} = 240A, L = 50μH, V_{GK} = -6V, T_a = 25°C	–	–	2.8	μF

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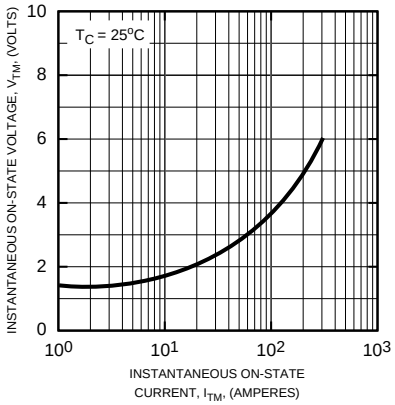
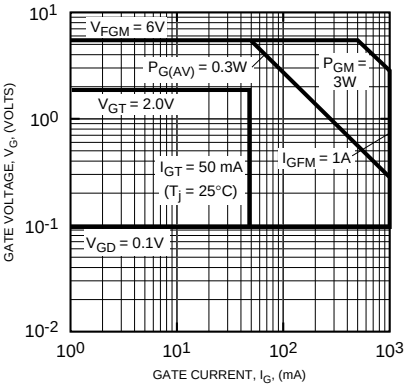
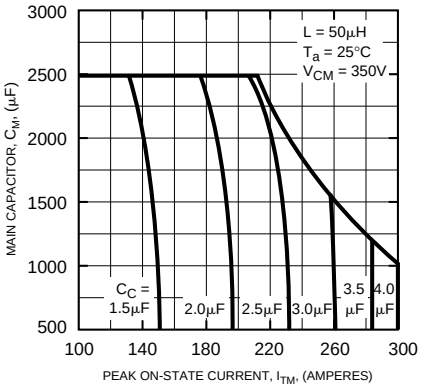
MAXIMUM ON-STATE CHARACTERISTICS



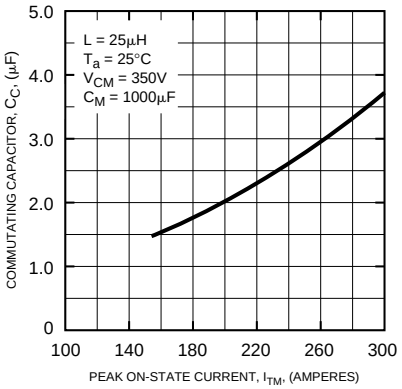
GATE CHARACTERISTICS



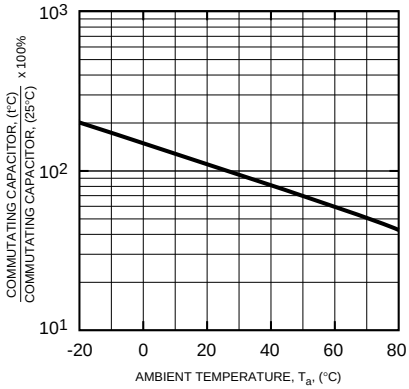
COMMUTATING CHARACTERISTICS



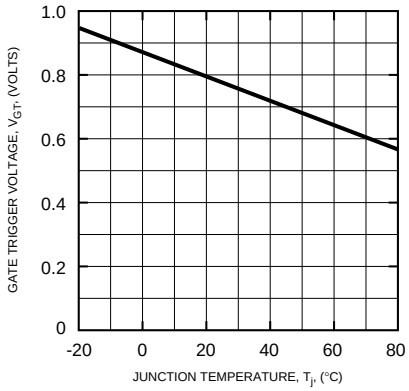
COMMUTATING CAPACITOR VS. PEAK ON-STATE CURRENT



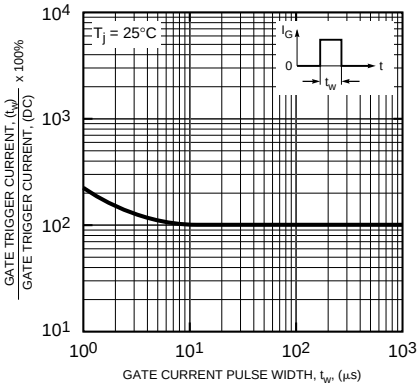
COMMUTATING CAPACITOR VS. AMBIENT TEMPERATURE (TYPICAL)



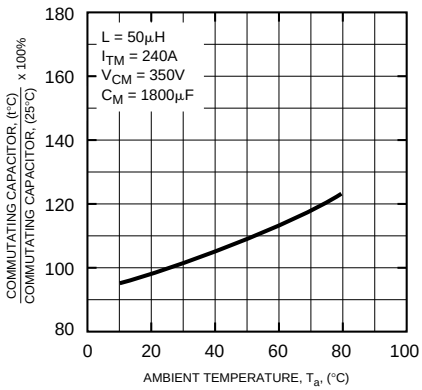
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



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



COMMUTATING CAPACITOR VS. CASE TEMPERATURE (TYPICAL)



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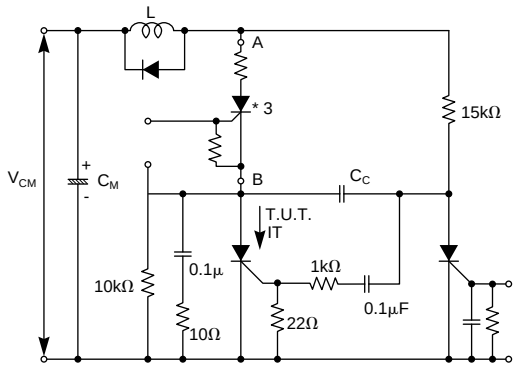
TEST CIRCUIT FOR COMMUTATING CAPACITOR



*3 The circuit between A-B is a substitute for Xenon flash tube.