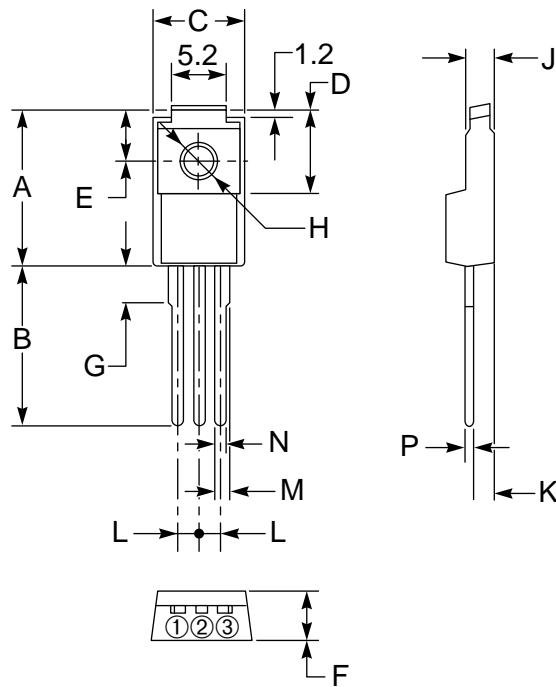
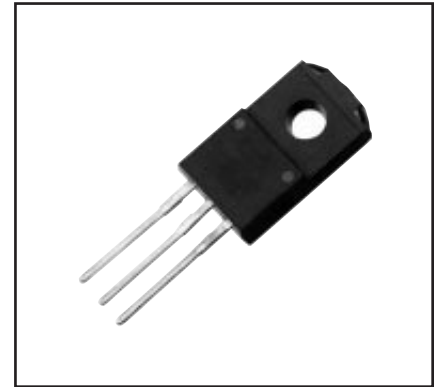
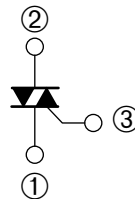


OUTLINE DRAWING



CONNECTION DIAGRAM

- ① T1 TERMINAL
- ② T2 TERMINAL
- ③ GATE TERMINAL



Description:

A triac is a solid state silicon AC switch which may be gate triggered from an off-state to an on-state for either polarity of applied voltage.

Features:

- Full Molded Isolation Package
- Glass Passivation
- Selected for Inductive Loads
- UL Approved

Applications:

- AC Switch
- Motor Controls
- Lighting

Ordering Information:

Example: Select the complete seven, eight or nine digit part number you desire from the table - i.e. BCR8PM-8 is a 400 Volt, 8 Ampere Triac.

Outline Drawing (Conforms to TO-220F)

| Dimensions | Inches | Millimeters |
|------------|-----------|-------------|
| A | 0.67 | 17.0 |
| B | 0.49 Min. | 12.5 Min. |
| C | 0.39 | 10.0 |
| D | 0.33 | 8.5 |
| E | 0.20 | 5.0 |
| F | 0.18 | 4.5 |
| G | 0.14 | 3.6 |

| Dimensions | Inches | Millimeters |
|------------|-------------------|---------------|
| H | 0.126 ±0.008 Dia. | 3.2 ±0.2 Dia. |
| J | 0.11 | 2.8 |
| K | 0.102 | 2.6 |
| L | 0.10 | 2.5 |
| M | 0.039 | 1.0 |
| N | 0.031 | 0.8 |
| P | 0.020 | 0.5 |

| Type | V _{DRM} Volts | Code | Inductive Load* |
|--------|---------------------------|-----------|--------------------|
| BCR8PM | 400 600 | -8 -12 | L |

*For inductive load, add L.



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BCR8PM

Triac

8 Amperes/400-600 Volts

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

| Ratings | Symbol | BCR8PM-8 | BCR8PM-12 | Units |
|---|---------------------|------------|------------|------------------------|
| Repetitive Peak Off-state Voltage | V_{DRM} | 400 | 600 | Volts |
| Non-repetitive Peak Off-state Voltage | V_{DSM} | 500 | 720 | Volts |
| On-state Current, $T_c = 88^\circ\text{C}$ | $I_T(\text{RMS})$ | 8 | 8 | Amperes |
| Non-repetitive Peak Surge, One Cycle (60 Hz) | I_{TSM} | 80 | 80 | Amperes |
| I^2t for Fusing, $t = 8.3\text{ msec}$ | I^2t | 26 | 26 | A^2sec |
| Peak Gate Power Dissipation, 20 μsec | P_{GM} | 5 | 5 | Watts |
| Average Gate Power Dissipation | $P_{G(\text{avg})}$ | 0.5 | 0.5 | Watts |
| Peak Gate Current | I_{GM} | 2 | 2 | Amperes |
| Peak Gate Voltage | V_{GM} | 10 | 10 | Volts |
| Storage Temperature | T_{stg} | -40 to 125 | -40 to 125 | $^\circ\text{C}$ |
| Operating Temperature | T_j | -40 to 125 | -40 to 125 | $^\circ\text{C}$ |
| Isolation Voltage | V_{iso} | 1500 | 1500 | Volts |
| Weight | – | 2 | 2 | Grams |



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BCR8PM

Triac

8 Amperes/400-600 Volts

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

| Characteristics | Symbol | Test Conditions (Trigger Mode) | | | | BCR8PM | | | Units |
|-----------------------------|----------|--------------------------------|------------|--------------|----------------------|--------|------|------|-------|
| | | V_D | R_L | R_G | T_j | Min. | Typ. | Max. | |
| Gate Parameters | | | | | | | | | |
| DC Gate Trigger Current | | | | | | | | | |
| MT2+ Gate+ | I_{GT} | 6V | 6 Ω | 330 Ω | 25 $^\circ\text{C}$ | – | – | 30 | mA |
| MT2+ Gate– | | 6V | 6 Ω | 330 Ω | 25 $^\circ\text{C}$ | – | – | 30 | mA |
| MT2– Gate– | | 6V | 6 Ω | 330 Ω | 25 $^\circ\text{C}$ | – | – | 30 | mA |
| DC Gate Trigger Voltage | | | | | | | | | |
| MT2+ Gate+ | V_{GT} | 6V | 6 Ω | 330 Ω | 25 $^\circ\text{C}$ | – | – | 1.5 | Volts |
| MT2+ Gate– | | 6V | 6 Ω | 330 Ω | 25 $^\circ\text{C}$ | – | – | 1.5 | Volts |
| MT2– Gate– | | 6V | 6 Ω | 330 Ω | 25 $^\circ\text{C}$ | – | – | 1.5 | Volts |
| DC Gate Non-trigger Voltage | | | | | | | | | |
| All | V_{GD} | 1/2 V_{DRM} | – | – | 125 $^\circ\text{C}$ | 0.2 | – | – | Volts |

BCR8PM

Triac

8 Amperes/400-600 Volts

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

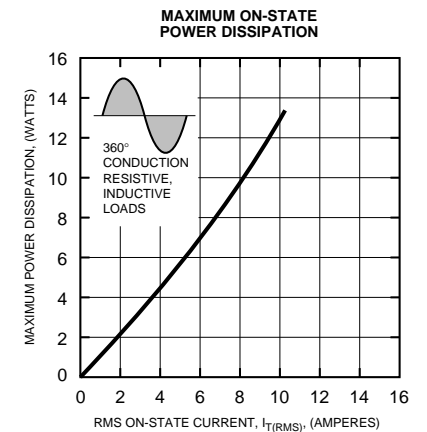
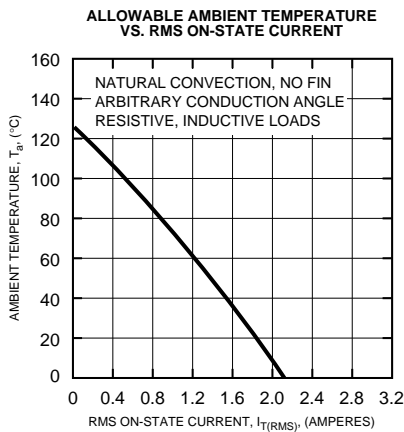
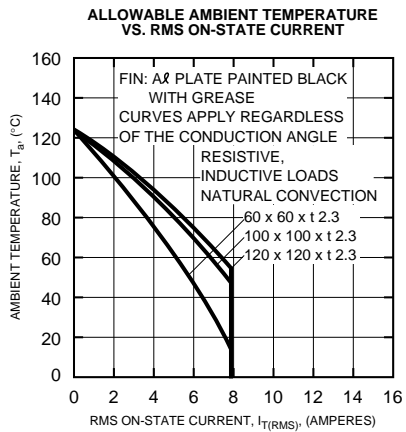
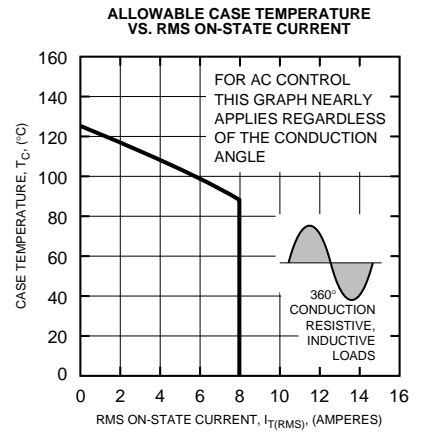
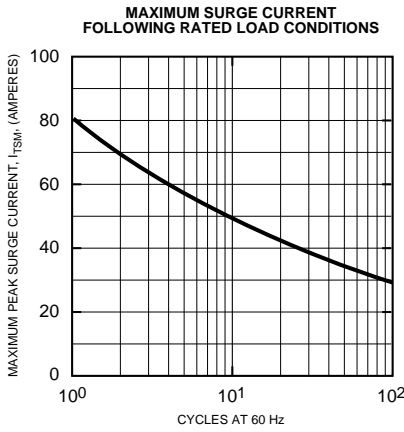
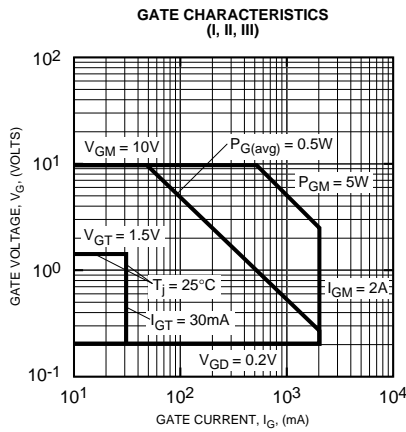
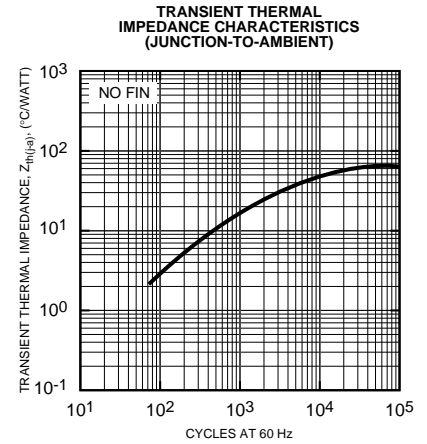
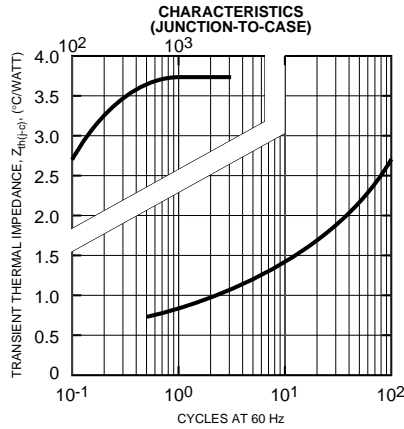
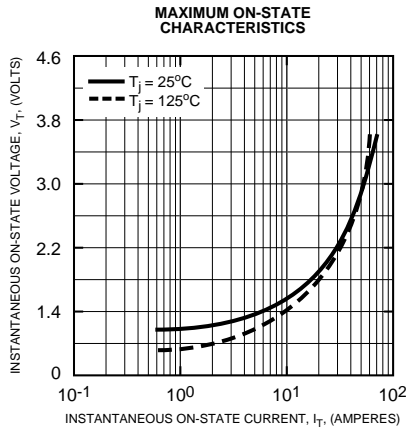
| Characteristics | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|---|---------------|---|------|------|------|------------------------|
| Thermal Resistance, Junction-to-case | $R_{th(j-c)}$ | – | – | – | 3.7 | $^\circ\text{C/W}$ |
| Voltage – Blocking State Repetitive Off-state Current | I_{DRM} | Gate Open Circuited, $V_D = V_{DRM}$, $T_j = 125^\circ\text{C}$ | – | – | 2 | mA |
| Current – Conducting State Peak On-state Voltage | V_{TM} | $T_C = 25^\circ\text{C}$ $I_{TM} = 12\text{A}$ | – | – | 1.6 | Volts |
| Critical Rate-of-rise of Commutating Off-state Voltage (Commutating dv/dt) ▲ for inductive load (L) (Switching) | $(dv/dt)_C$ | – | – | – | – | $\text{V}/\mu\text{s}$ |

| Δ Part Number | V_{DRM} (Volts) | Commutating dv/dt , $(dv/dt)_C$ ($\text{V}/\mu\text{sec}$) | | Test Condition | Commutating Voltage & Current Waveform (Inductive Load) |
|----------------------|-------------------|--|---------|---|---|
| | | Load Type | Minimum | | |
| BCR8PM-8L | 400 | L | 10 | $T_j = 125^\circ\text{C}$, Rate of Decay On-state Commutating Current $(di/dt)_C = -4\text{A/msec}$; Peak Off-state Voltage $V_D = 400\text{V}$ | |
| BCR8PM-12L | 600 | L | 10 | | |

BCR8PM

Triac

8 Amperes/400-600 Volts

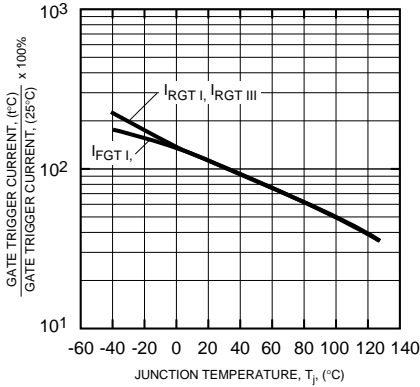


BCR8PM

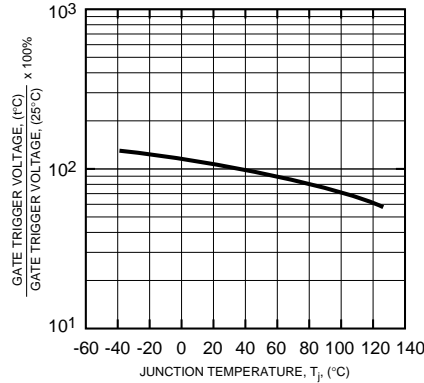
Triac

8 Amperes/400-600 Volts

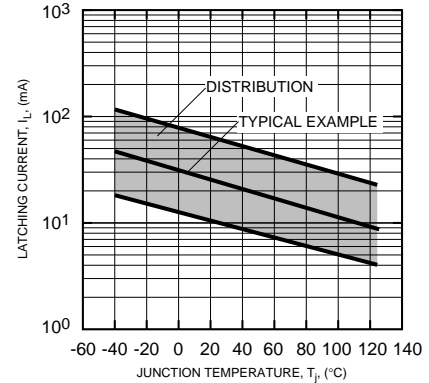
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



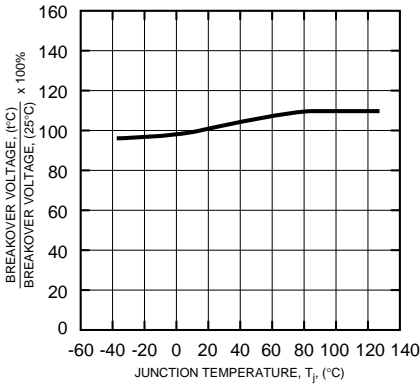
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



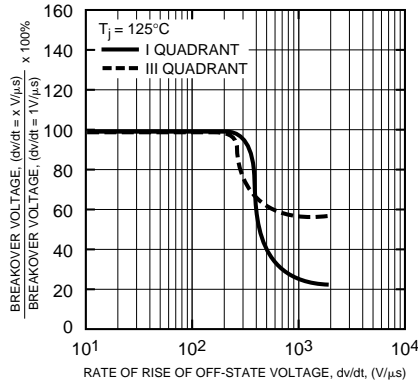
LATCHING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



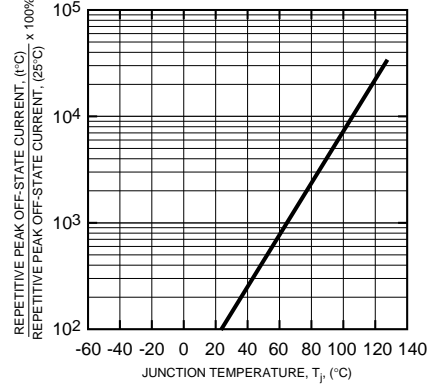
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



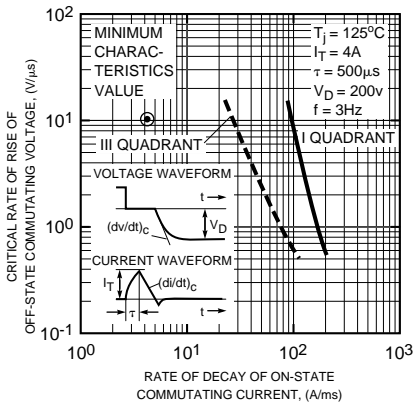
BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE (TYPICAL)



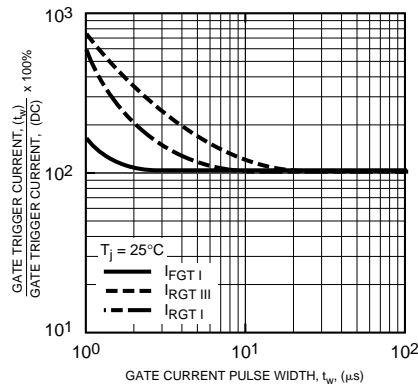
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



COMMUTATION CHARACTERISTICS (TYPICAL)



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



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

