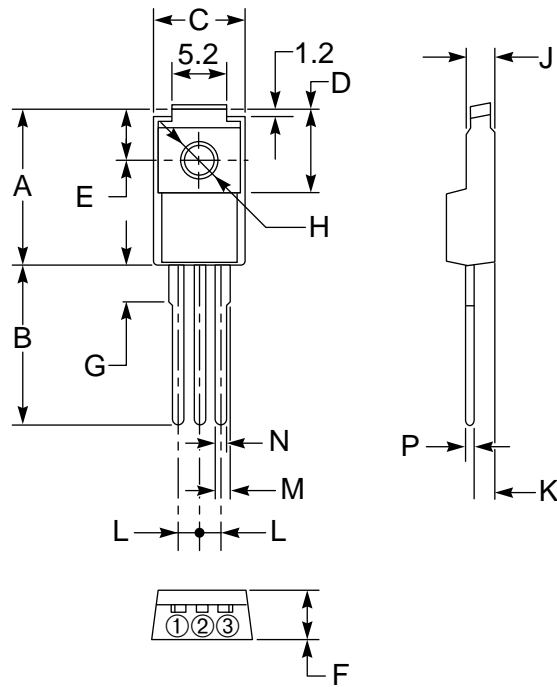


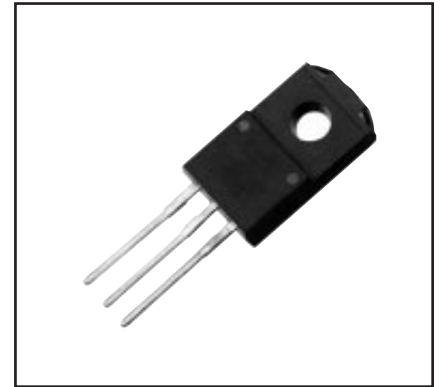
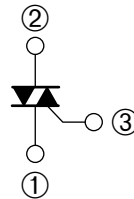
Isolated Triac 5 Amperes/400-600 Volts

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
- 1500 V_{RMS} Isolation Voltage UL Card
- Selected for Inductive Loads

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. BCR5PM-8 is a 400 Volt, 5 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* |
|--------|---------------------------|------|--------------------|
| BCR5PM | 400 | -8 | L |
| | 600 | -12 | |

*For inductive load, add L.



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

BCR5PM

Isolated Triac

5 Amperes/400-600 Volts

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

| Ratings | Symbol | BCR5PM-8 | BCR5PM-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, $T_c = 95^\circ\text{C}$ | $I_{T(RMS)}$ | 5 | 5 | Amperes |
| Non-repetitive Peak Surge, One Cycle (60 Hz) | I_{TSM} | 50 | 50 | Amperes |
| I^2t for Fusing, $t = 8.3\text{ msec}$ | I^2t | 10.4 | 10.4 | A^2sec |
| Peak Gate Power Dissipation, 20 μsec | P_{GM} | 3 | 3 | Watts |
| Average Gate Power Dissipation | $P_{G(avg)}$ | 0.3 | 0.3 | 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 Junction Temperature | T_j | -40 to 125 | -40 to 125 | $^\circ\text{C}$ |
| Isolation Voltage applied for one minute, terminal-to-case | V_{iso} | 1500 | 1500 | Volts |
| Weight | – | 2 | 2 | Grams |



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BCR5PM
Isolated Triac
 5 Amperes/400-600 Volts

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

| Characteristics | Symbol | Test Conditions (Trigger Mode) | | | BCR5PM | | | Units |
|-----------------------------|----------|--------------------------------|-----------|---------------------|--------|------|------|-------|
| | | V_D | R_L | T_j | Min. | Typ. | Max. | |
| Gate Parameters | | | | | | | | |
| DC Gate Trigger Current | | | | | | | | |
| MT2+ Gate+ | I_{GT} | 6V | 6Ω | 25°C | – | – | 20 | mA |
| MT2+ Gate– | | 6V | 6Ω | 25°C | – | – | 20 | mA |
| MT2– Gate– | | 6V | 6Ω | 25°C | – | – | 20 | mA |
| DC Gate Trigger Voltage | | | | | | | | |
| MT2+ Gate+ | V_{GT} | 6V | 6Ω | 25°C | – | – | 1.5 | Volts |
| MT2+ Gate– | | 6V | 6Ω | 25°C | – | – | 1.5 | Volts |
| MT2– Gate– | | 6V | 6Ω | 25°C | – | – | 1.5 | Volts |
| DC Gate Non-trigger Voltage | | | | | | | | |
| All | V_{GD} | $1/2 V_{DRM}$ | – | 125°C | 0.2 | – | – | Volts |

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

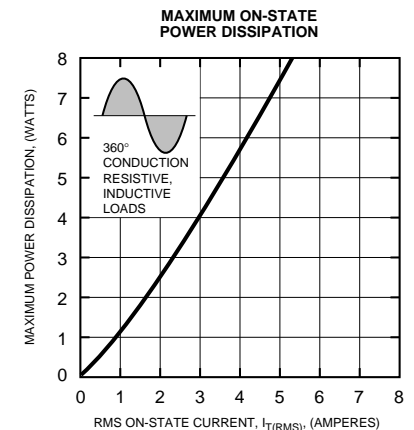
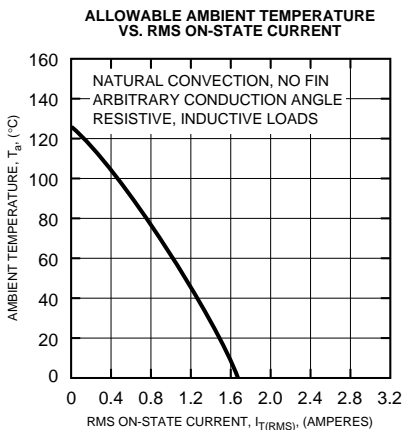
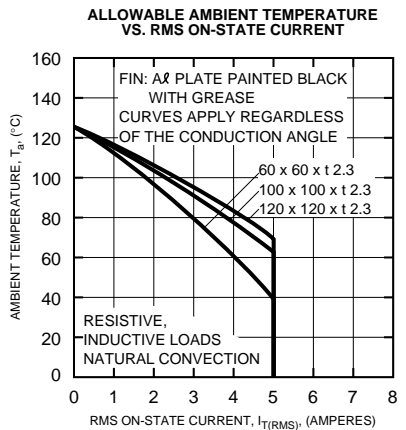
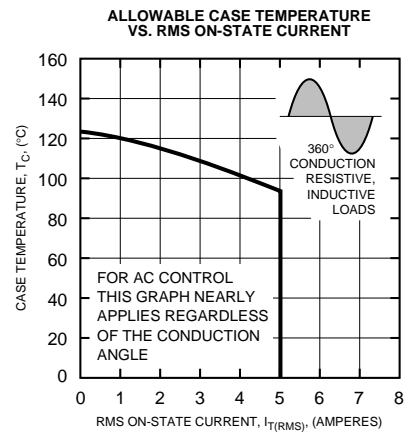
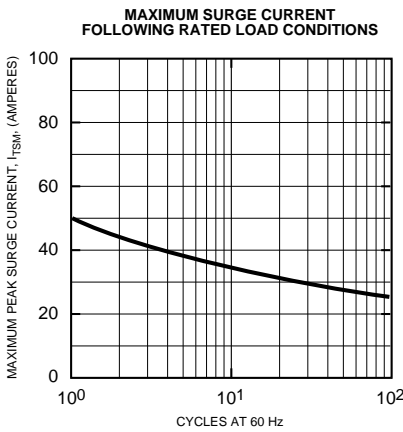
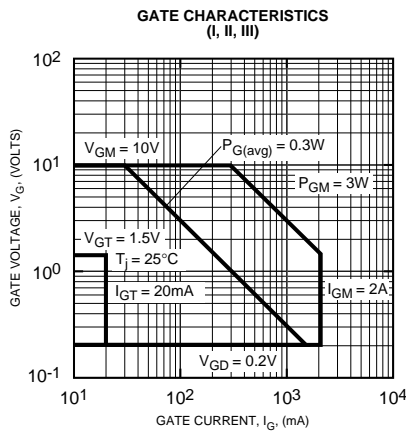
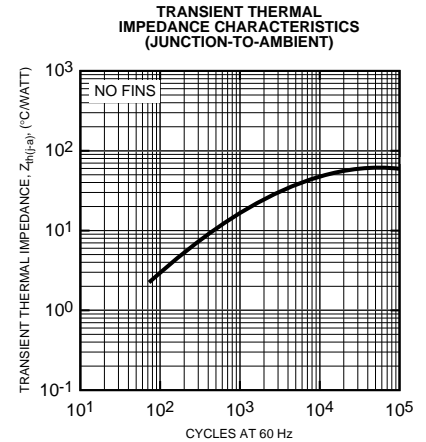
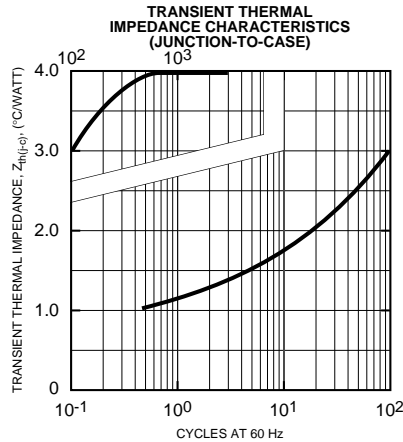
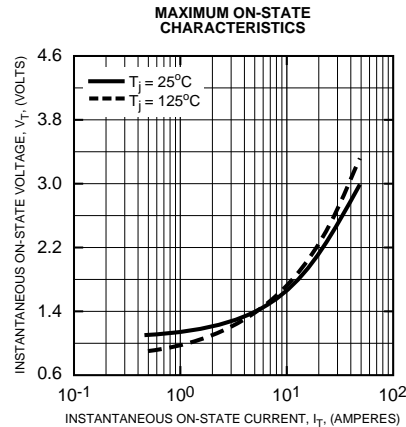
| Characteristics | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|---|---------------|---|------|------|------|------------------------|
| Thermal Resistance, Junction-to-case | $R_{th(j-c)}$ | – | – | – | 4 | $^\circ\text{C/W}$ |
| Steady State Thermal Resistance, Junction-to-ambient | $R_{th(j-a)}$ | – | – | – | 60 | $^\circ\text{C/W}$ |
| 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} | $T_C = 25^\circ\text{C}$, 8.3ms Pulsewidth Duty Cycle <2%, $I_{TM} = 7\text{A Peak}$ | – | – | 1.8 | Volts |
| DC Holding Current | I_H | Main Terminal Source Voltage = 75Vdc, Peak Initiating On-state Current = 1A, $T_j = 25^\circ\text{C}$ | – | 30 | – | MA |
| 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) | Load Type | Commutating dv/dt , $(dv/dt)_c$ ($\text{V}/\mu\text{sec}$) | | Test Condition | Commutating Voltage & Current Waveform (Inductive Load) |
|----------------------|-------------------|-----------|--|--|--|---|
| | | | Minimum | | | |
| BCR5PM-8L | 400 | L | 5 | | $T_j = 125^\circ\text{C}$, | |
| BCR5PM-12L | 600 | L | 5 | | Rate of Decay On-state Commutating Current $(di/dt)_c = -2.5\text{A/msec}$; Peak Off-state Voltage $V_D = 400\text{V}$ | |

BCR5PM

Isolated Triac

5 Amperes/400-600 Volts



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Isolated Triac
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