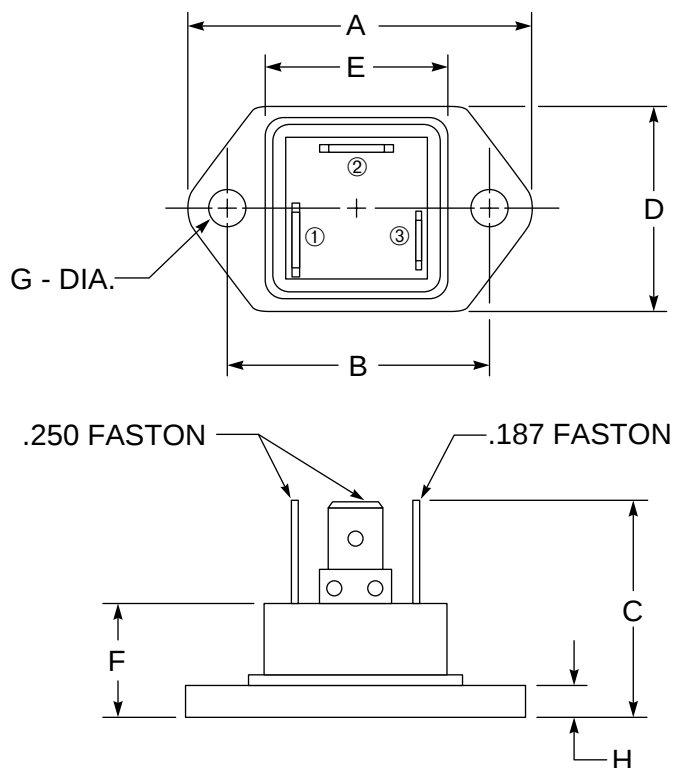


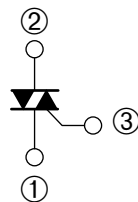
### Isolated Triac 16 Amperes/400-600 Volts

#### 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:

- ☐ Isolated TO-3 Mounting Flange
- ☐ Glass Passivation
- ☐ Quick Disconnect Terminals
- ☐ 2200 V<sub>RMS</sub> Isolation Voltage
- ☐ Selected for Inductive Loads

#### Applications:

- ☐ AC Switch
- ☐ Copiers
- ☐ Heating
- ☐ Motor Controls
- ☐ Lighting

#### Ordering Information:

Example: Select the complete eight, nine or ten digit part number you desire from the table - i.e. BCR16HM-8 is a 400 Volt, 16 Ampere Triac.

| Type    | V <sub>DRM</sub><br>Volts | Code | Inductive<br>Load* |
|---------|---------------------------|------|--------------------|
| BCR16HM | 400                       | -8   | L                  |
|         | 600                       | -12  |                    |

\*For inductive load, add L.

#### Outline Drawing

| Dimensions | Inches        | Millimeters |
|------------|---------------|-------------|
| A          | 1.54 Max.     | 39.2 Max.   |
| B          | 1.181 ± 0.008 | 30.0 ± 0.2  |
| C          | 0.89 Max.     | 22.5 Max.   |
| D          | 0.91 Max.     | 23 Max.     |
| E          | 0.80 Max.     | 20.2 Max.   |
| F          | 0.43 Max.     | 11 Max.     |
| G          | 0.165 Dia.    | 4.2 Dia.    |
| H          | 0.10          | 2.6 Max.    |

## BCR16HM

### Isolated Triac

16 Amperes/400-600 Volts

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

| Ratings                                           | Symbol              | BCR16HM-8  | BCR16HM-12 | Units                  |
|---------------------------------------------------|---------------------|------------|------------|------------------------|
| Repetitive Peak Off-state Voltage                 | $V_{\text{DRM}}$    | 400        | 600        | Volts                  |
| Non-repetitive Peak Off-state Voltage (Gate Open) | $V_{\text{DSM}}$    | 500        | 720        | Volts                  |
| On-state Current, $T_a = 82^\circ\text{C}$        | $I_{\text{T(RMS)}}$ | 16         | 16         | Amperes                |
| Non-repetitive Peak Surge, One Cycle (60 Hz)      | $I_{\text{TSM}}$    | 170        | 170        | Amperes                |
| $I^2t$ for Fusing, $t = 8.3$ msec                 | $I^2t$              | 121        | 121        | $\text{A}^2\text{sec}$ |
| Peak Gate Power Dissipation, 20 $\mu\text{sec}$   | $P_{\text{GM}}$     | 5          | 5          | Watts                  |
| Average Gate Power Dissipation                    | $P_{\text{G(avg)}}$ | 0.5        | 0.5        | Watts                  |
| Peak Gate Current                                 | $I_{\text{GM}}$     | 2          | 2          | Amperes                |
| Peak Gate Voltage                                 | $V_{\text{GM}}$     | 10         | 10         | Volts                  |
| Storage Temperature                               | $T_{\text{stg}}$    | -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                                 | $V_{\text{iso}}$    | 2200       | 2200       | Volts                  |
| Weight                                            | —                   | 26         | 26         | Grams                  |

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

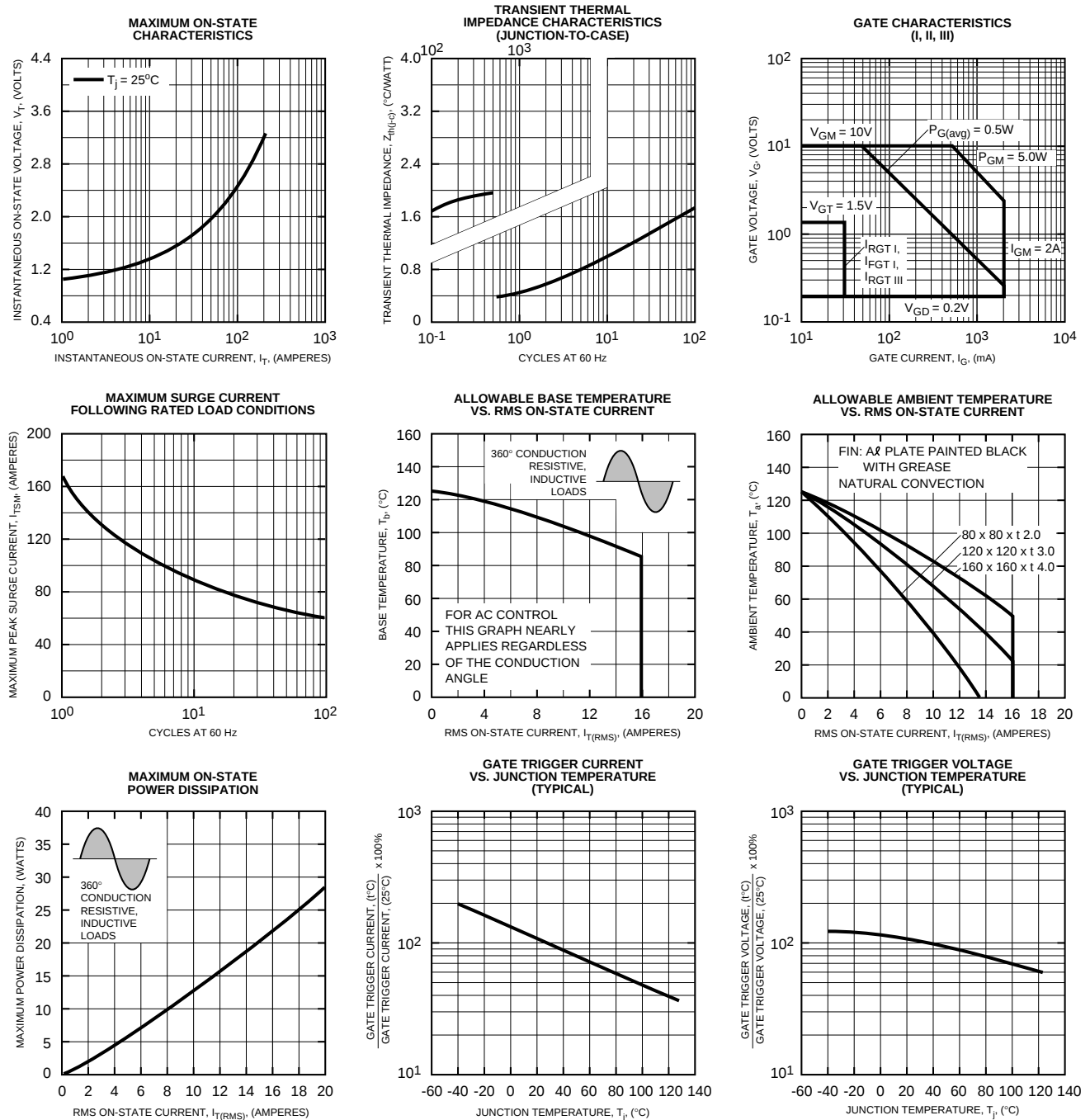
| Characteristics             | Symbol          | Test Conditions (Trigger Mode) |                |                | BCR16HM |      |      | Units |
|-----------------------------|-----------------|--------------------------------|----------------|----------------|---------|------|------|-------|
|                             |                 | V <sub>D</sub>                 | R <sub>L</sub> | T <sub>j</sub> | Min.    | Typ. | Max. |       |
| Gate Parameters             |                 |                                |                |                |         |      |      |       |
| DC Gate Trigger Current     |                 |                                |                |                |         |      |      |       |
| MT2+ Gate+                  | I <sub>GT</sub> | 6V                             | 6Ω             | 25°C           | —       | —    | 30   | mA    |
| MT2+ Gate–                  |                 | 6V                             | 6Ω             | 25°C           | —       | —    | 30   | mA    |
| MT2– Gate–                  |                 | 6V                             | 6Ω             | 25°C           | —       | —    | 30   | mA    |
| DC Gate Trigger Voltage     |                 |                                |                |                |         |      |      |       |
| MT2+ Gate+                  | V <sub>GT</sub> | 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 <sub>GD</sub> | 1/2 V <sub>DRM</sub>           | —              | 125°C          | 2       | —    | —    | Volts |

| Characteristics                                                                                                          | Symbol               | Test Conditions                                                            | Min. | Typ. | Max. | Units                  |
|--------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------|------|------|------|------------------------|
| Thermal Resistance, Junction-to-base                                                                                     | $R_{\text{th(j-b)}}$ | —                                                                          | —    | —    | 2    | $^\circ\text{C/W}$     |
| Voltage – Blocking State<br>Repetitive Off-state Current                                                                 | $I_{\text{DRM}}$     | Gate Open Circuited,<br>$V_D = V_{\text{DRM}}$ , $T_j = 125^\circ\text{C}$ | —    | —    | 3    | mA                     |
| Current – Conducting State<br>Peak On-state Voltage                                                                      | $V_{\text{TM}}$      | $T_c = 25^\circ\text{C}$ ,<br>$I_{\text{TM}} = 25\text{A Peak}$            | —    | —    | 1.6  | Volts                  |
| Critical Rate-of-rise of Commutating<br>Off-state Voltage (Commutating dv/dt)<br>▲ for inductive load (L)<br>(Switching) | $(dv/dt)_c$          | —                                                                          | —    | —    | —    | $\text{V}/\mu\text{s}$ |

## BCR16HM

### Isolated Triac

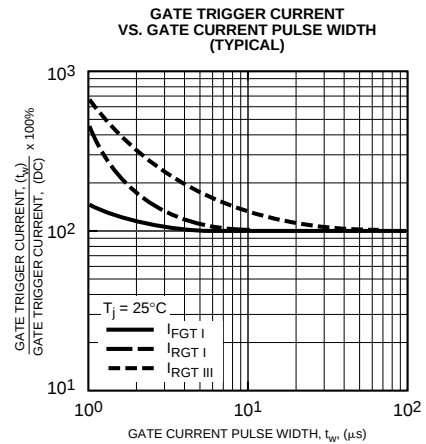
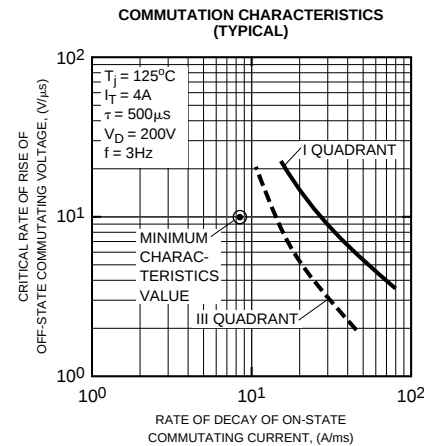
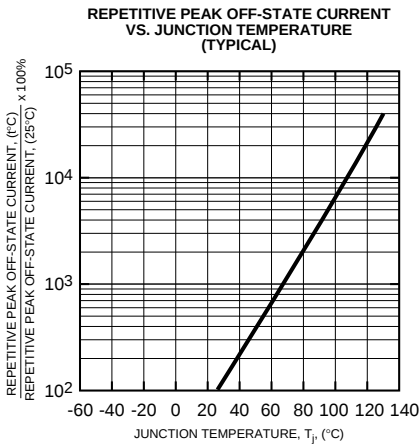
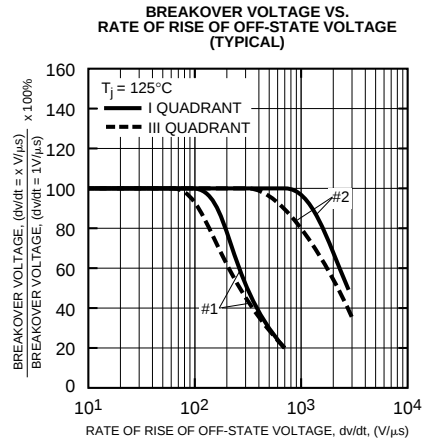
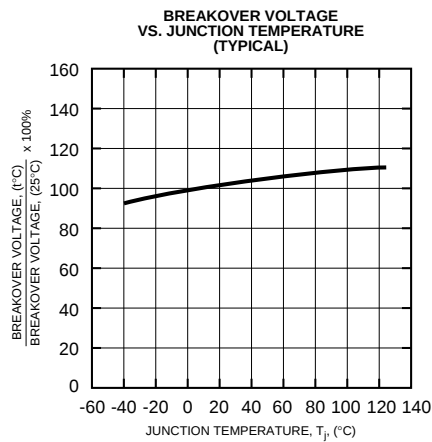
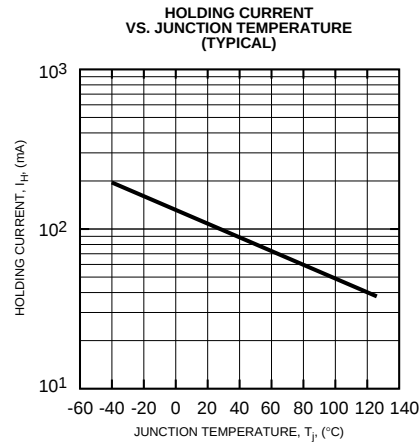
16 Amperes/400-600 Volts



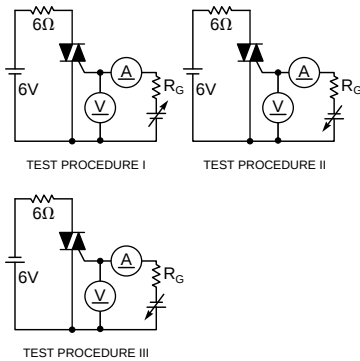
## BCR16HM

### Isolated Triac

16 Amperes/400-600 Volts



### GATE TRIGGER CHARACTERISTICS TEST CIRCUITS



| Δ Part Number | Commutating dv/dt, (dv/dt) <sub>c</sub> |                  | Test Condition                                                                                                                                         | Commutating Voltage & Current Waveform (Inductive Load) |
|---------------|-----------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
|               | V <sub>DRM</sub> (Volts)                | (V/μsec) Minimum |                                                                                                                                                        |                                                         |
| BCR16HM-8L    | 400                                     | 10               | T <sub>J</sub> = 125°C,<br>Rate of Decay On-state Commutating Current (di/dt) <sub>C</sub> = -8A/msec,<br>Peak Off-state Voltage V <sub>D</sub> = 400V |                                                         |
| BCR16HM-12L   | 600                                     | 10               |                                                                                                                                                        |                                                         |