

BCR30GM

MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

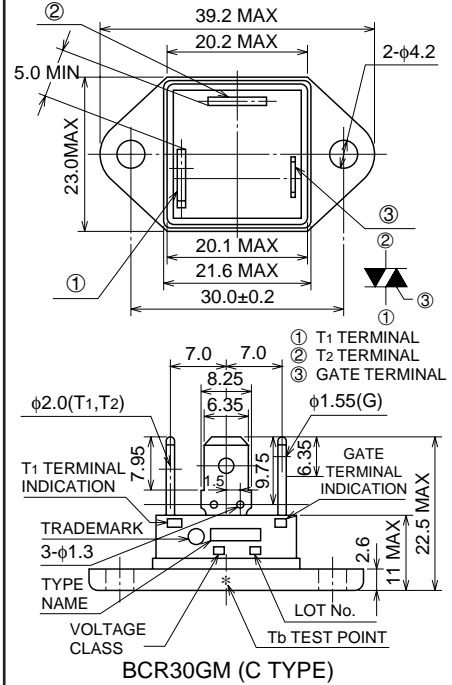
BCR30GM



- **IT (RMS)** 30A
- **VDRM** 400V/600V
- **IFGT I , IRGT I , IRGT III** 50mA
- **Viso** 2200V
- **UL Recognized: File No. E80276**

OUTLINE DRAWING

Dimensions
in mm



APPLICATION

Contactless AC switches, light dimmer,
on/off and speed control of small induction motors, on/off control of copier lamps,
microwave ovens

MAXIMUM RATINGS

| Symbol | Parameter | Voltage class | | Unit |
|--------|---|---------------|-----|------|
| | | 8 | 12 | |
| VDRM | Repetitive peak off-state voltage*1 | 400 | 600 | V |
| VDSM | Non-repetitive peak off-state voltage*1 | 500 | 720 | V |

| Symbol | Parameter | Conditions | Ratings | Unit |
|------------------|--------------------------------|--|------------|------------------|
| IT (RMS) | RMS on-state current | Commercial frequency, sine full wave 360° conduction, Tb=60°C | 30 | A |
| ITSM | Surge on-state current | 60Hz sinewave 1 full cycle, peak value, non-repetitive | 300 | A |
| I ² t | I ² t for fusing | Value corresponding to 1 cycle of half wave 60Hz, surge on-state current | 375 | A ² s |
| PGM | Peak gate power dissipation | | 5 | W |
| PG (AV) | Average gate power dissipation | | 0.5 | W |
| VGM | Peak gate voltage | | 10 | V |
| IGM | Peak gate current | | 2 | A |
| Tj | Junction temperature | | -40 ~ +125 | °C |
| Tstg | Storage temperature | | -40 ~ +125 | °C |
| — | Mounting torque | Screw M4 | 15 | kg-cm |
| | | | 1.47 | N-cm |
| — | Weight | Typical value | 26 | g |
| Viso | Isolation voltage | Ta=25°C, AC 1 minute, T2 · T1 · G terminal to base | 2200 | V |

*1. Gate open.

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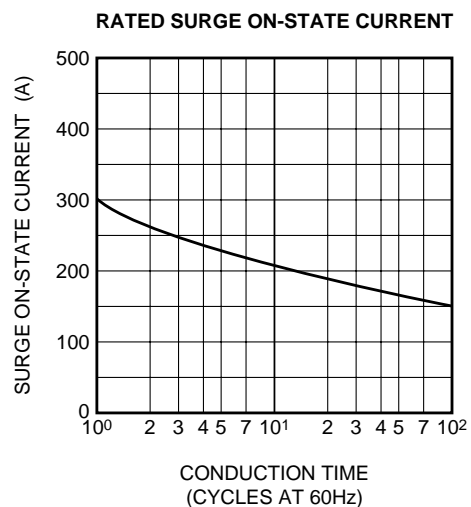
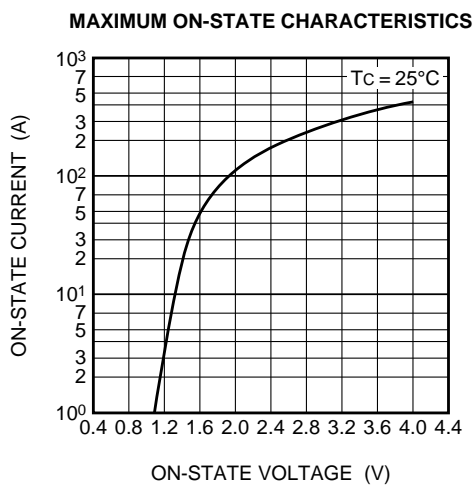
ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Test conditions | Limits | | | Unit | |
|-----------------------|--|--|--------|------|------|------|----|
| | | | Min. | Typ. | Max. | | |
| IDRM | Repetitive peak off-state current | T _j =125°C, V _{DRM} applied | — | — | 3.0 | mA | |
| VTM | On-state voltage | T _b =25°C, I _{TM} =45A, Instantaneous measurement | — | — | 1.6 | V | |
| VFGT I | Gate trigger voltage *2 | T _j =25°C, V _D =6V, R _L =6Ω, R _G =330Ω | I | — | — | 2.5 | V |
| VRGT I | | | II | — | — | 2.5 | V |
| VRGT III | | | III | — | — | 2.5 | V |
| IFGT I | Gate trigger current *2 | T _j =25°C, V _D =6V, R _L =6Ω, R _G =330Ω | I | — | — | 50 | mA |
| IRGT I | | | II | — | — | 50 | mA |
| IRGT III | | | III | — | — | 50 | mA |
| VGD | Gate non-trigger voltage | T _j =125°C, V _D =1/2V _{DRM} | 0.2 | — | — | V | |
| R _{th} (j-b) | Thermal resistance | Junction to base *4 | — | — | 1.6 | °C/W | |
| (dv/dt) _c | Critical-rate of rise of off-state commutating voltage | | *3 | — | — | V/μs | |

*2. Measurement using the gate trigger characteristics measurement circuit.
 *3. The critical-rate of rise of the off-state commutating voltage is shown in the table below.
 *4. The contact thermal resistance R_{th} (b-f) in case of greasing is 0.5°C/W.

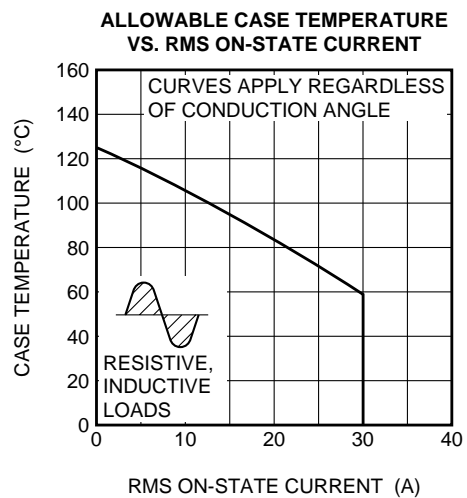
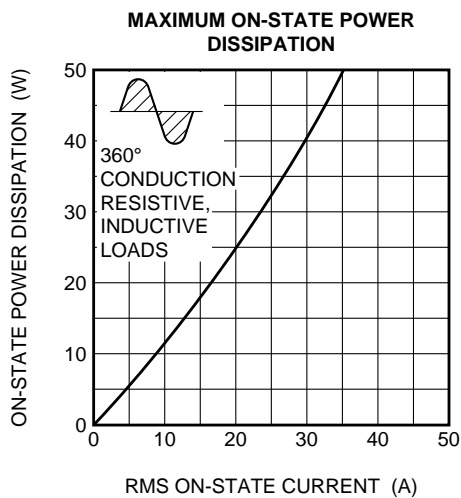
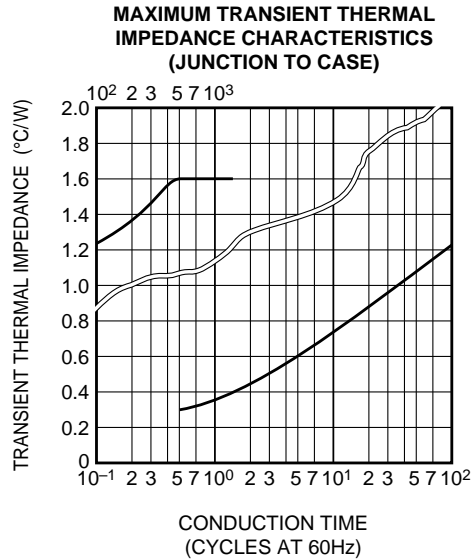
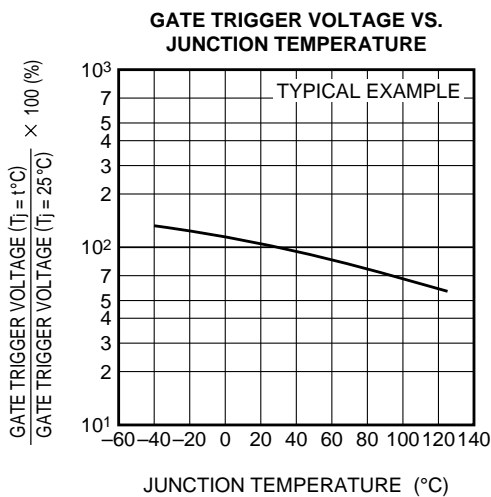
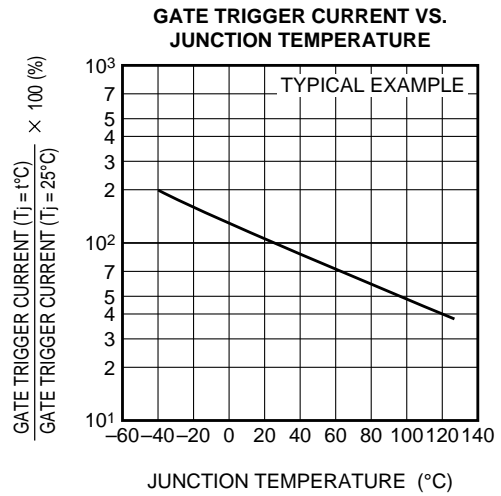
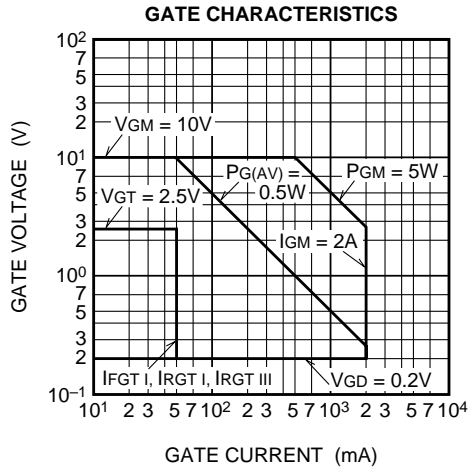
| Voltage class | V _{DRM} (V) | (dv/dt) _c | | | Test conditions | Commutating voltage and current waveforms (inductive load) |
|---------------|----------------------|----------------------|------|------|---|--|
| | | Symbol | Min. | Unit | | |
| 8 | 400 | R | — | V/μs | 1. Junction temperature T _j =125°C 2. Rate of decay of on-state commutating current (di/dt) _c =-16A/ms 3. Peak off-state voltage V _D =400V | |
| | | L | 20 | | | |
| 12 | 600 | R | — | | | |
| | | L | 20 | | | |

PERFORMANCE CURVES



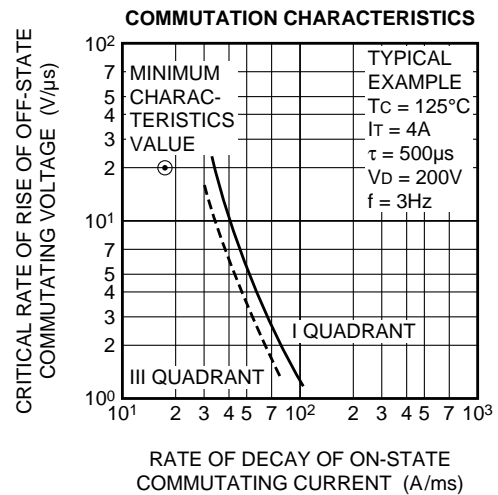
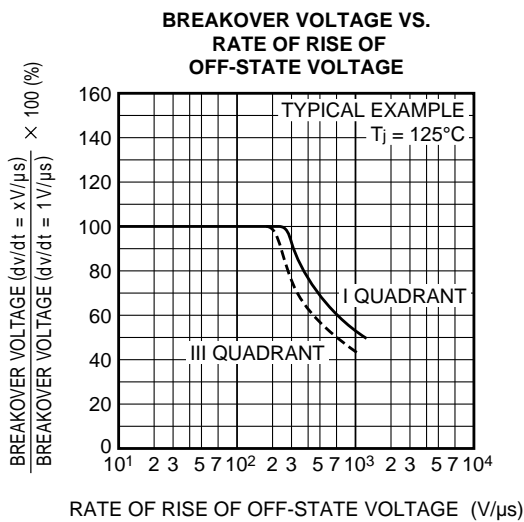
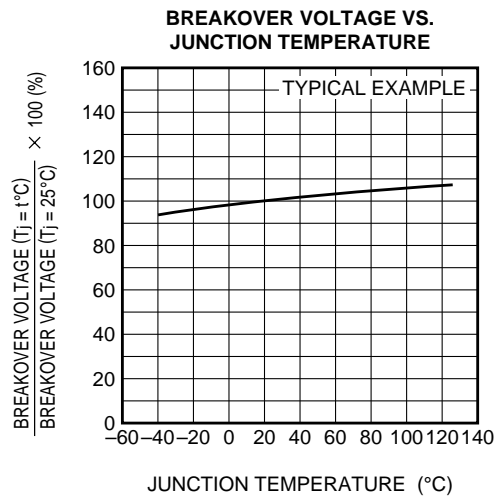
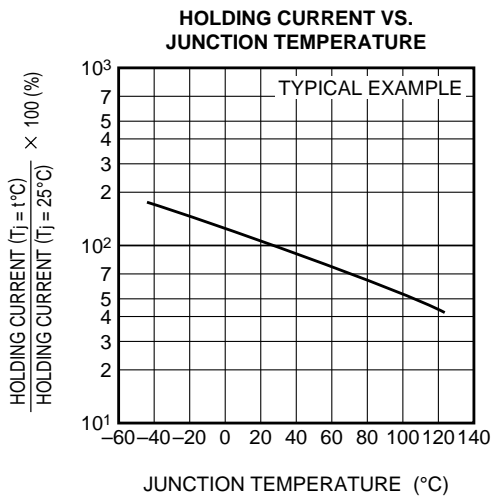
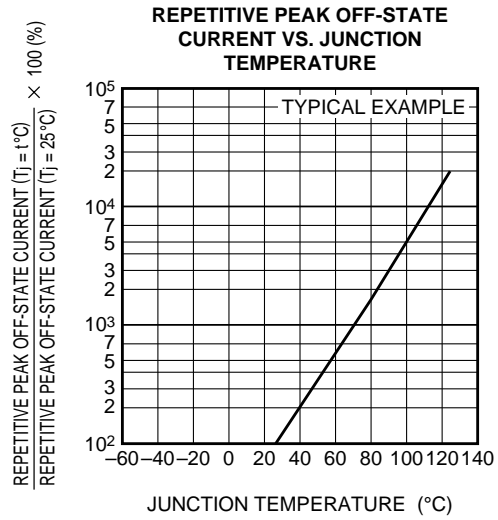
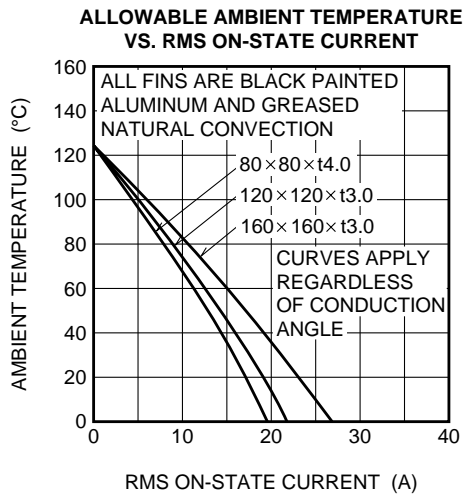
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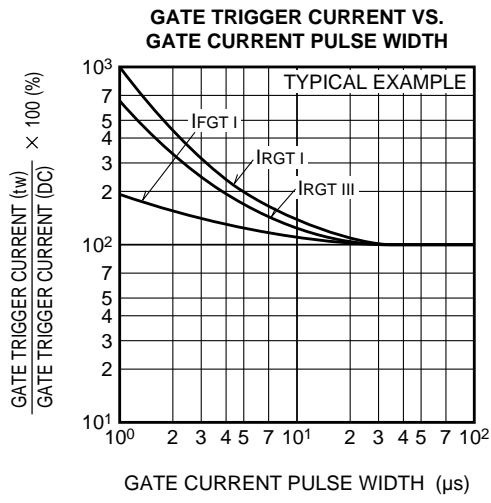
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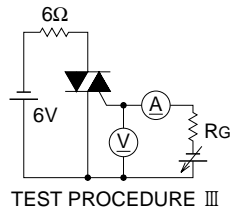
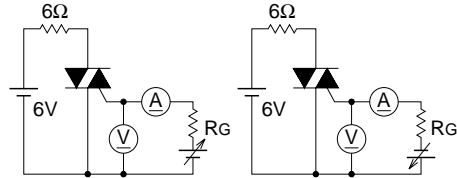


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GATE TRIGGER CHARACTERISTICS TEST CIRCUITS



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Datasheets for electronics components.