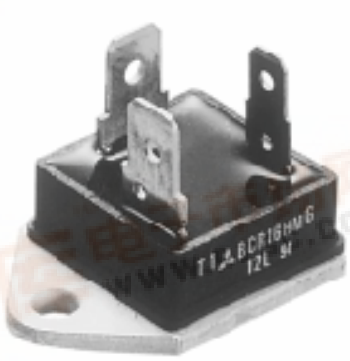


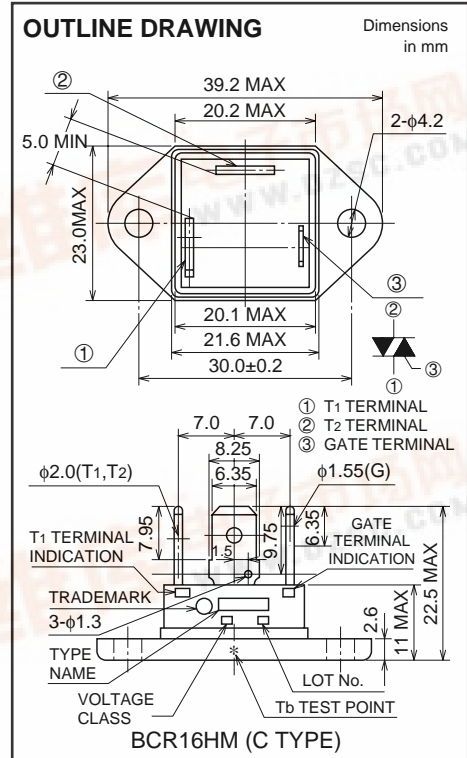
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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

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- **IT (RMS)** **16A**
- **VDRM** **400V/600V**
- **IFGT I, IRGT I, IRGT III** **30mA**
- **Viso** **2200V**
- **UL Recognized: File No. E80276**



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=82°C | 16 | A |
| ITSM | Surge on-state current | 60Hz sine wave 1 full cycle, peak value, non-repetitive | 170 | A |
| I ² t | I ² t for fusing | Value corresponding to 1 cycle of half wave 60Hz, surge on-state current | 121 | 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 |
| — | Weight | | 1.47 | N-m |
| — | Weight | | 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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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

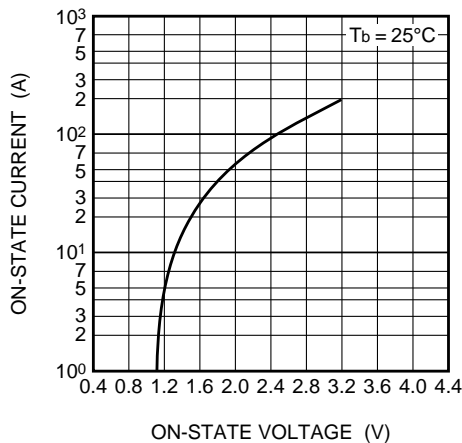
| Symbol | Parameter | Test conditions | Limits | | | Unit | |
|-----------------------|--|--|--------|------|------|------|----|
| | | | Min. | Typ. | Max. | | |
| IDRM | Repetitive peak off-state current | T _J =125°C, V _{DRM} applied | — | — | 3.0 | mA | |
| V _{TM} | On-state voltage | T _b =25°C, I _{TM} =25A, Instantaneous measurement | — | — | 1.6 | V | |
| V _{FGT I} | Gate trigger voltage *2 | T _J =25°C, V _D =6V, R _L =6Ω, R _G =330Ω | I | — | — | 1.5 | V |
| V _{RGT I} | | | II | — | — | 1.5 | V |
| V _{RGT III} | | | III | — | — | 1.5 | V |
| I _{FGT I} | Gate trigger current *2 | T _J =25°C, V _D =6V, R _L =6Ω, R _G =330Ω | I | — | — | 30 | mA |
| I _{RGT I} | | | II | — | — | 30 | mA |
| I _{RGT III} | | | III | — | — | 30 | mA |
| V _{GD} | 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 | — | — | 2.0 | °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.

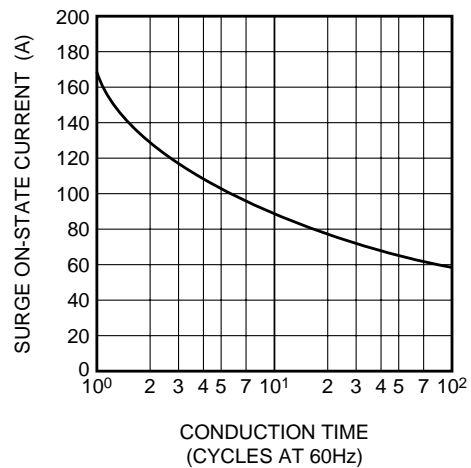
| Voltage class | V _{DRM} (V) | (dv/dt) _c | | | Test conditions | Commutating voltage and current waveforms (inductive load) |
|---------------|----------------------|----------------------|------|------|--|--|
| | | Symbol | Min. | Unit | | |
| 8 | 400 | R | — | V/μs | 1. Junction temperature T _J =125°C 2. Rate of decay of on-state commutating current (di/dt) _c =-8A/ms 3. Peak off-state voltage V _D =400V | |
| | | L | 10 | | | |
| 12 | 600 | R | — | | | |
| | | L | 10 | | | |

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



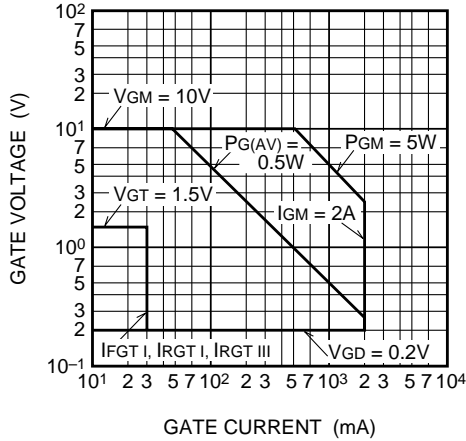
RATED SURGE ON-STATE CURRENT



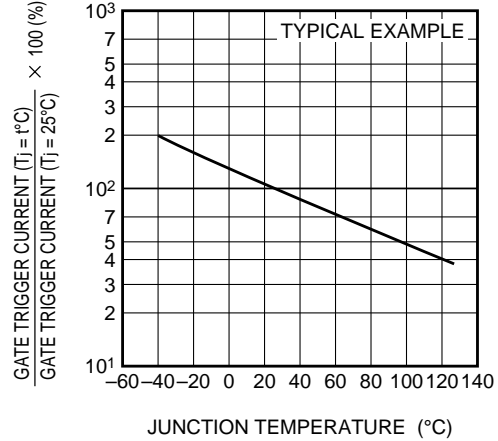
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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

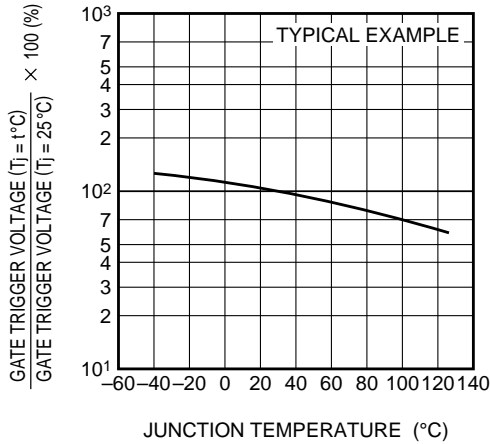
GATE CHARACTERISTICS



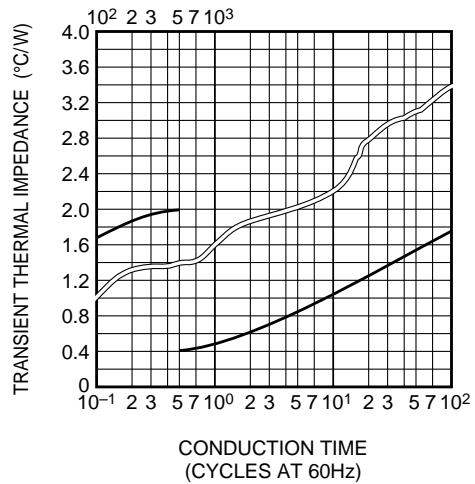
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



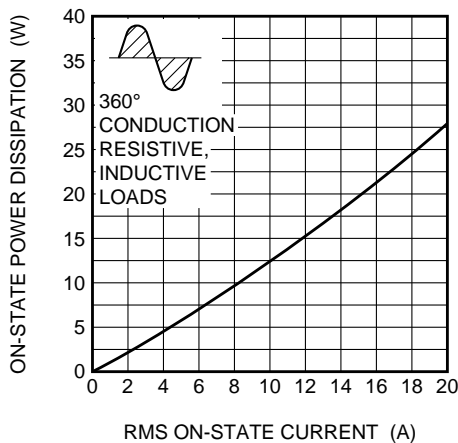
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



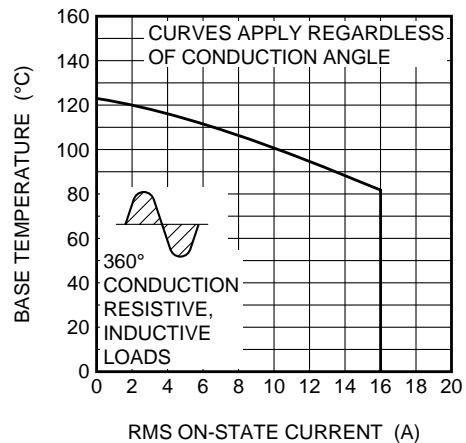
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO CASE)



MAXIMUM ON-STATE POWER DISSIPATION



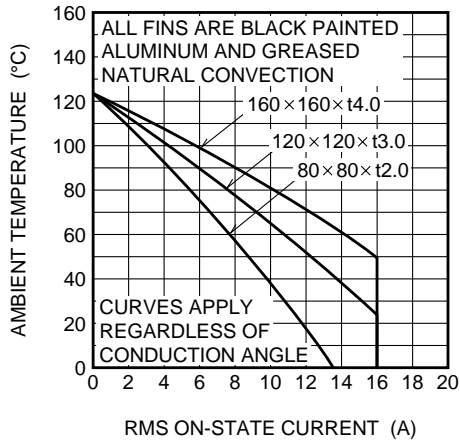
ALLOWABLE BASE TEMPERATURE VS. RMS ON-STATE CURRENT



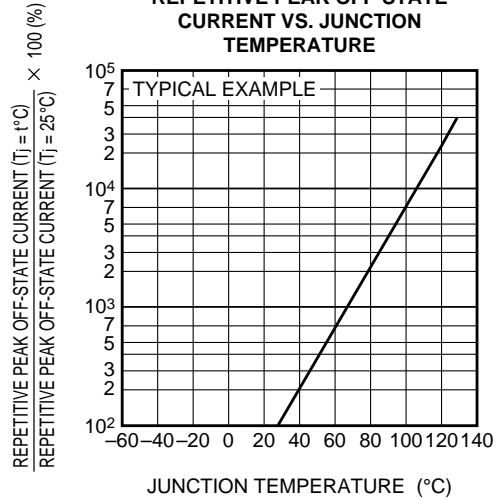
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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE

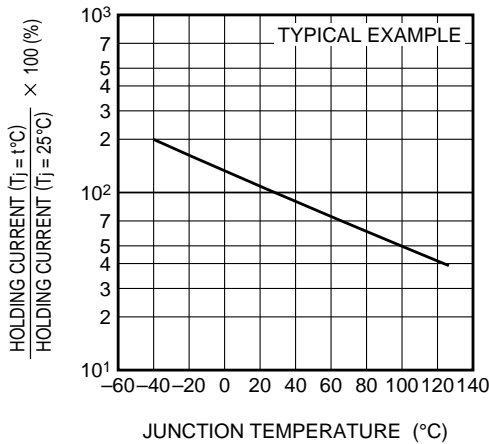
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



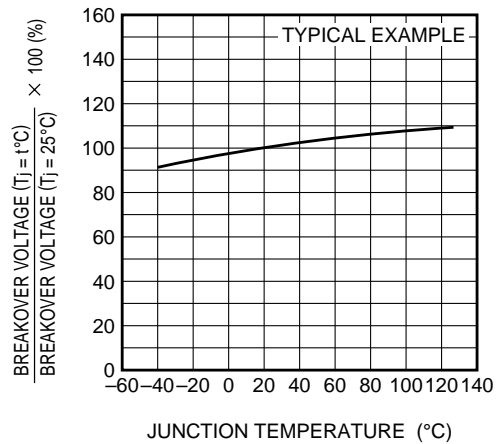
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE



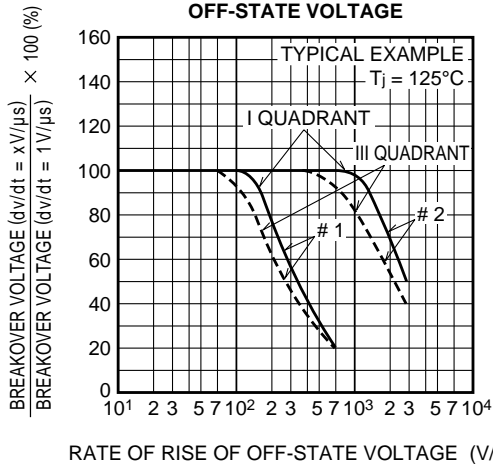
HOLDING CURRENT VS. JUNCTION TEMPERATURE



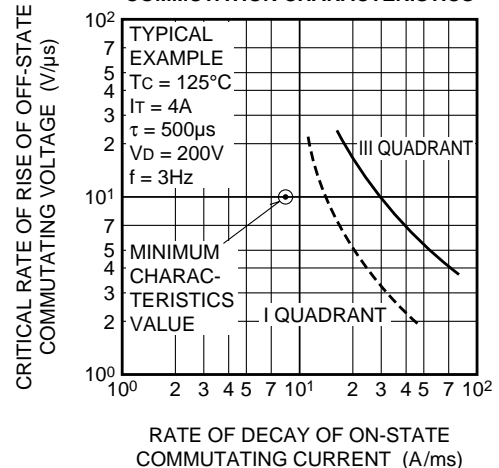
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE

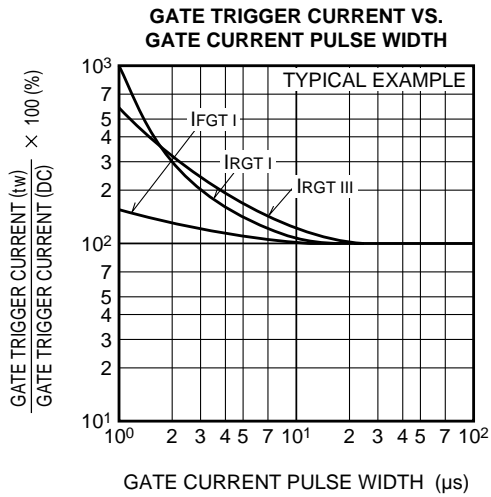


COMMUTATION CHARACTERISTICS



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MEDIUM POWER USE
INSULATED TYPE, GLASS PASSIVATION TYPE



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

