# BCR2PM

**LOW POWER USE**

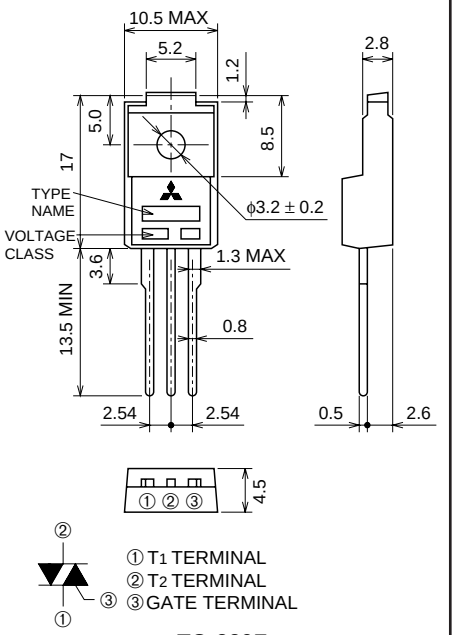
**INSULATED TYPE, PLANAR PASSIVATION TYPE**

**BCR2PM**

- $I_{T\ (RMS)}$ ..... 2A
- $V_{DRM}$ .....400V/600V
- $I_{RGT\ I}$, $I_{RGT\ III}$ ..... 10mA

**OUTLINE DRAWING**

Dimensions in mm




TO-220F

## APPLICATION

Switching mode power supply, light dimmer, electric flasher unit,
control of household equipment such as TV sets · stereo · refrigerator · washing machine · infrared kotatsu · carpet, solenoid drivers, small motor control,
copying machine, electric tool,
other general purpose control applications

## MAXIMUM RATINGS

| Symbol | Parameter | Voltage class | | Unit |
|---|---|---|---|---|
| | | 8 | 12 | |
| $V_{DRM}$ | Repetitive peak off-state voltage ✻1 | 400 | 600 | V |
| $V_{DSM}$ | Non-repetitive peak off-state voltage ✻1 | 500 | 720 | V |

| Symbol | Parameter | Conditions | Ratings | Unit |
|---|---|---|---|---|
| $I_{T\ (RMS)}$ | RMS on-state current | Commercial frequency, sine full wave 360° conduction | 2 | A |
| $I_{TSM}$ | Surge on-state current | 60Hz sinewave 1 full cycle, peak value, non-repetitive | 10 | A |
| $I^2t$ | $I^2t$ for fusing | Value corresponding to 1 cycle of half wave 60Hz, surge on-state current | 0.41 | $A^2s$ |
| $P_{GM}$ | Peak gate power dissipation | | 1 | W |
| $P_{G\ (AV)}$ | Average gate power dissipation | | 0.1 | W |
| $V_{GM}$ | Peak gate voltage | | 6 | V |
| $I_{GM}$ | Peak gate current | | 1 | A |
| $T_j$ | Junction temperature | | –40 ~ +125 | °C |
| $T_{stg}$ | Storage temperature | | –40 ~ +125 | °C |
| — | Weight | Typical value | 2.0 | g |

✻1. Gate open.



MITSUBISHI ELECTRIC

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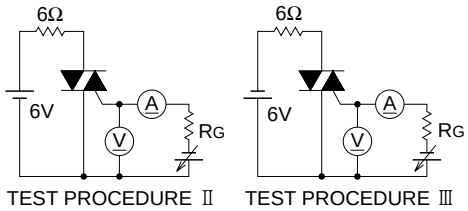
## ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | | Test conditions | Limits | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| $I_{DRM}$ | Repetitive peak off-state current | | $T_j$=125°C, $V_{DRM}$ applied | — | — | 0.5 | mA |
| $V_{TM}$ | On-state voltage | | $T_a$=25°C, $I_{TM}$=1.5A, Instantaneous measurement | — | — | 1.6 | V |
| $V_{RGT\ I}$ | Gate trigger voltage *2 | Ⅱ | $T_j$=25°C, $V_D$=6V, $R_L$=6Ω, $R_G$=330Ω | — | — | 2.0 | V |
| $V_{RGT\ Ⅲ}$ | | Ⅲ | | — | — | 2.0 | V |
| $I_{RGT\ I}$ | Gate trigger current *2 | Ⅱ | $T_j$=25°C, $V_D$=6V, $R_L$=6Ω, $R_G$=330Ω | — | — | 10 | mA |
| $I_{RGT\ Ⅲ}$ | | Ⅲ | | — | — | 10 | mA |
| $V_{GD}$ | Gate non-trigger voltage | | $T_j$=125°C, $V_D$=1/2$V_{DRM}$ | 0.1 | — | — | V |
| $R_{th\ (j-a)}$ | Thermal resistance | | Junction to ambient, Natural convection | — | — | 40 | °C/W |

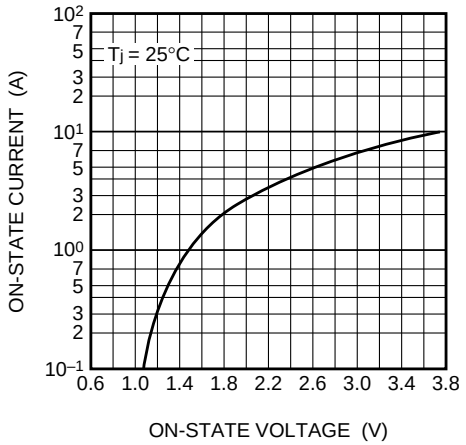
*2. Measurement using the gate trigger characteristics measurement circuit.

### GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

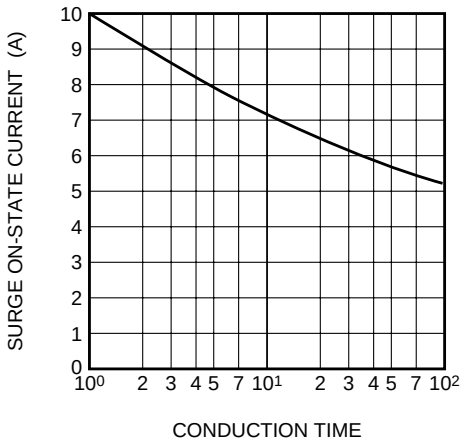



## PERFORMANCE CURVES

### MAXIMUM ON-STATE CHARACTERISTICS




### RATED SURGE ON-STATE CURRENT



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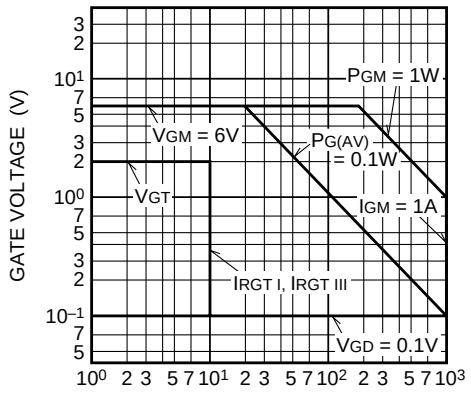
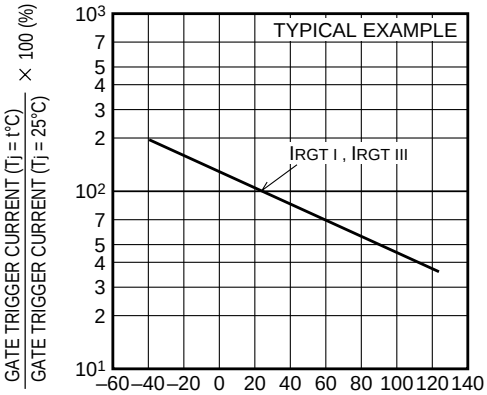
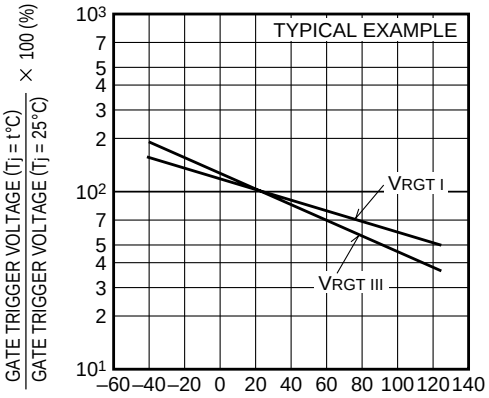
### GATE CHARACTERISTICS



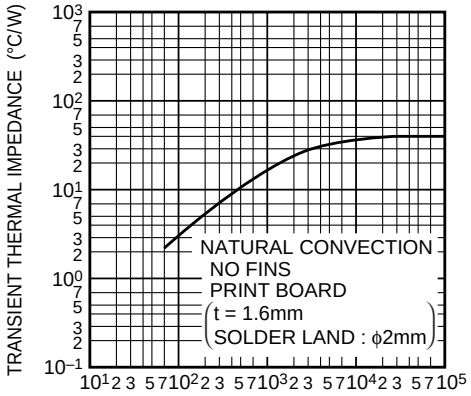

### GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



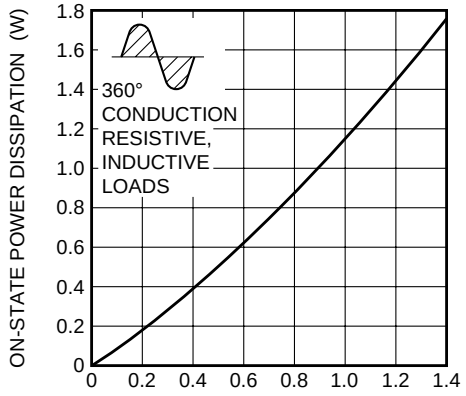

### GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



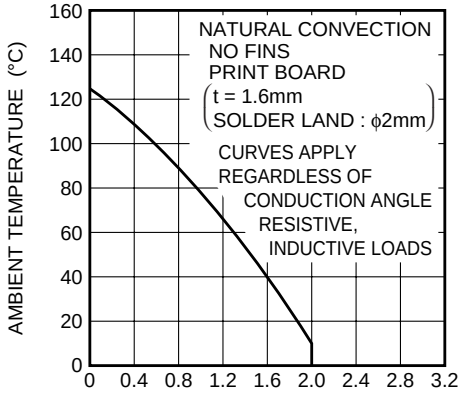

### MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)




### MAXIMUM ON-STATE POWER DISSIPATION




### ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



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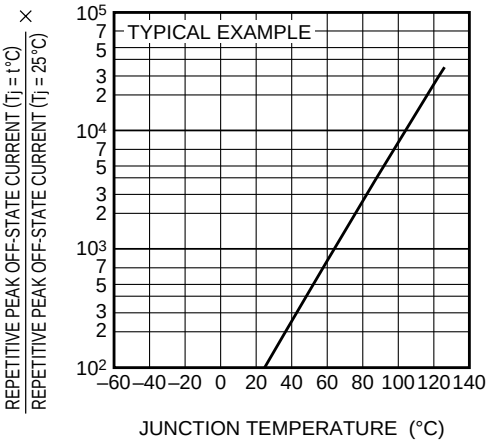
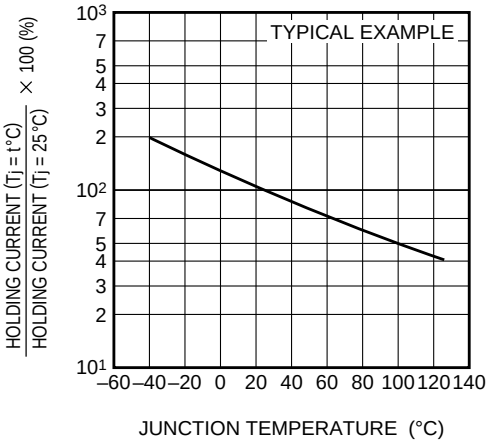
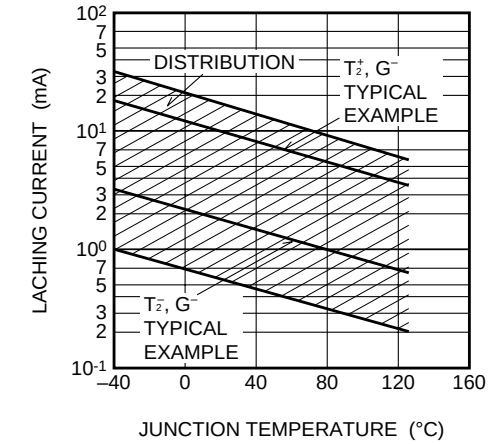
**REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE**



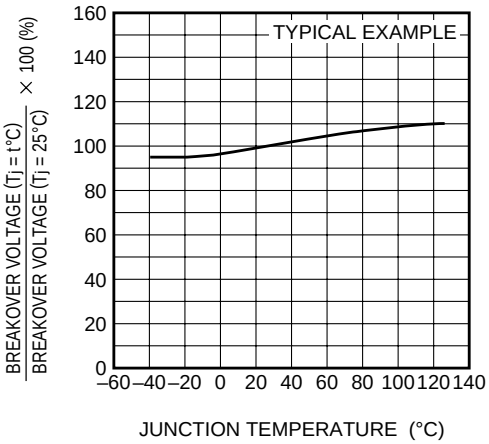

**HOLDING CURRENT VS. JUNCTION TEMPERATURE**



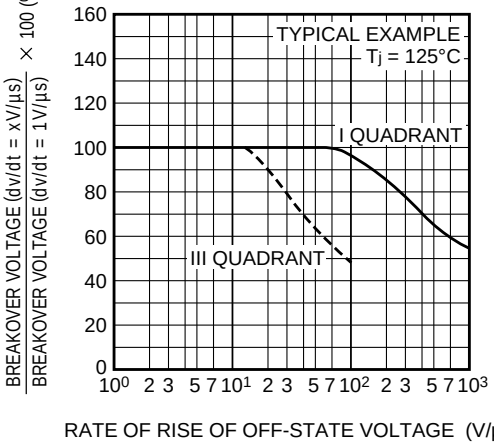

**LACHING CURRENT VS. JUNCTION TEMPERATURE**



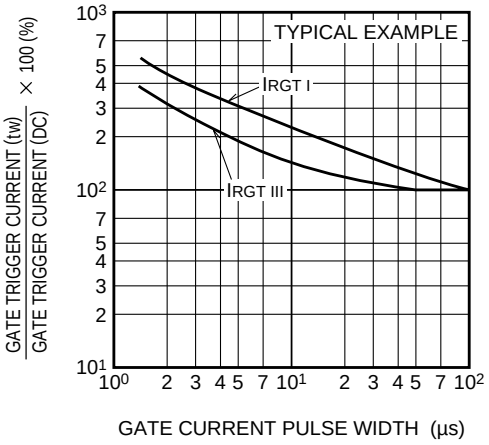

**BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE**




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




**GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH**



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