

BCR2AS-14A

700V - 2A - Triac

Low Power Use

R07DS0257EJ0101

Rev.1.01

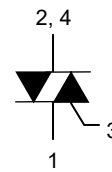
May. 10, 2019

Features

- $I_{T(RMS)}$: 2 A
- V_{DRM} : 700 V
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 10 mA
- T_j : 125 °C
- Planar Passivation Type

Outline

RENESAS Package code: PRSS0004ZG-A
(Package name: MP-3A)



1. T₁ Terminal
2. T₂ Terminal
3. Gate Terminal
4. T₂ Terminal

Application

Small motor control, heater control, and other general purpose AC control applications.

Maximum Ratings

| Parameter | Symbol | Voltage class | Unit |
|--|-----------|---------------|------|
| | | 14 | |
| Repetitive peak off-state voltage ^{Note1} | V_{DRM} | 700 | V |
| Non-repetitive peak off-state voltage ^{Note1} | V_{DSM} | 840 | V |

Notes: 1. Gate open.

| Parameter | Symbol | Ratings | Unit | Conditions |
|--------------------------------|--------------|-------------|------------------|---|
| RMS on-state current | $I_{T(RMS)}$ | 2 | A | Commercial frequency, sine full wave 360°conduction, $T_c = 112^{\circ}\text{C}$ ^{Note3} |
| Surge on-state current | I_{TSM} | 9 | A | 50 Hz sinewave 1 full cycle, peak value, non-repetitive |
| I^2t for fusing | I^2t | 0.41 | A ² s | Value corresponding to 1 cycle of half wave 50 Hz, surge on-state current |
| Peak gate power dissipation | P_{GM} | 1 | W | |
| Average gate power dissipation | $P_{G(AV)}$ | 0.1 | W | |
| Peak gate voltage | V_{GM} | 6 | V | |
| Peak gate current | I_{GM} | 1 | A | |
| Junction Temperature | T_j | -40 to +125 | °C | |
| Storage temperature | T_{stg} | -40 to +125 | °C | |

Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Test conditions |
|---|---------------|--------------|------|------|------------------------|--|
| Repetitive peak off-state current | I_{DRM} | — | — | 1.0 | mA | $T_j = 125^\circ\text{C}$, V_{DRM} applied |
| On-state voltage | V_{TM} | — | — | 2.1 | V | $T_c = 25^\circ\text{C}$, $I_{TM} = 3\text{ A}$, instantaneous measurement |
| Gate trigger voltage ^{Note2} | I | V_{FGTI} | — | — | 2.0 | $T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$ |
| | II | V_{RGTI} | — | — | 2.0 | |
| | III | V_{RGTIII} | — | — | 2.0 | |
| Gate trigger current ^{Note2} | I | I_{FGTI} | — | — | 10 | $T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$ |
| | II | I_{RGTI} | — | — | 10 | |
| | III | I_{RGTIII} | — | — | 10 | |
| Gate non-trigger voltage | V_{GD} | 0.2 | — | — | V | $T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$ |
| Thermal resistance | $R_{th(j-c)}$ | — | — | 4.0 | $^\circ\text{C/W}$ | Junction to case ^{Note3} |
| Critical-rate of rise of off-state commutating voltage ^{Note4} | $(dv/dt)_c$ | 0.5 | — | — | $\text{V}/\mu\text{s}$ | $T_j = 125^\circ\text{C}$ |

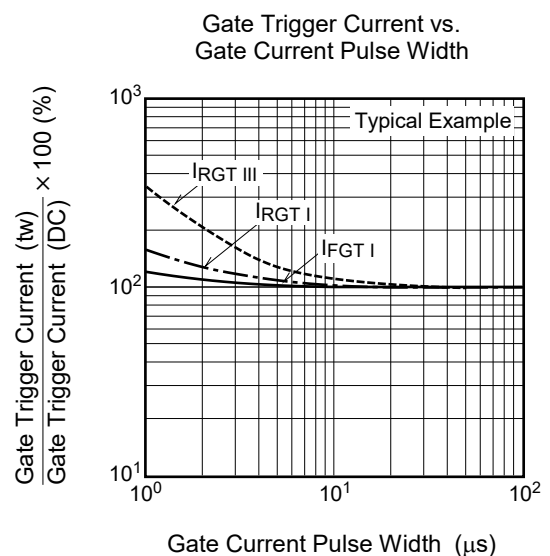
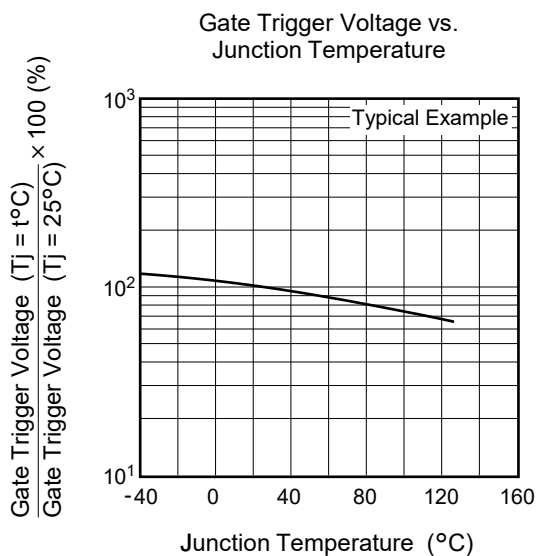
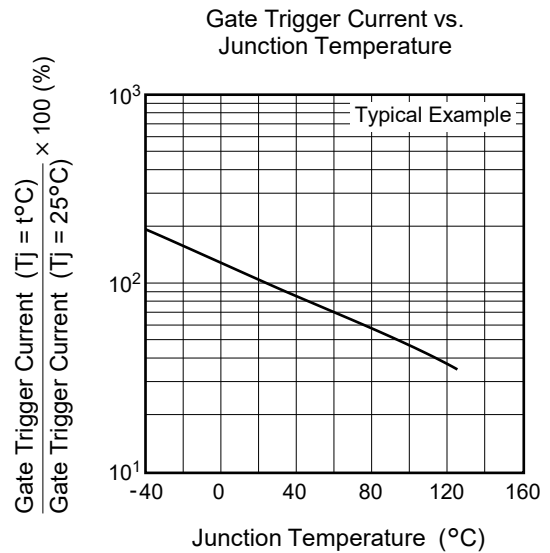
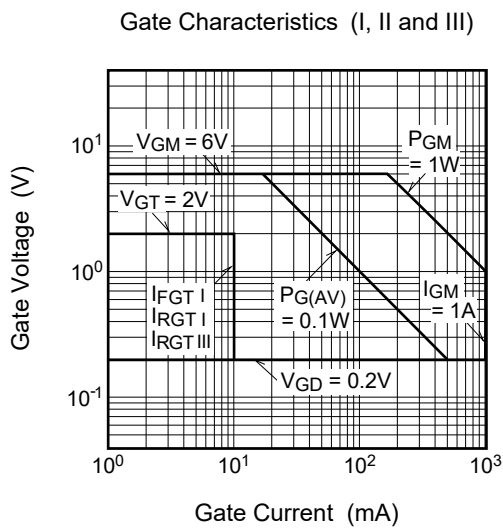
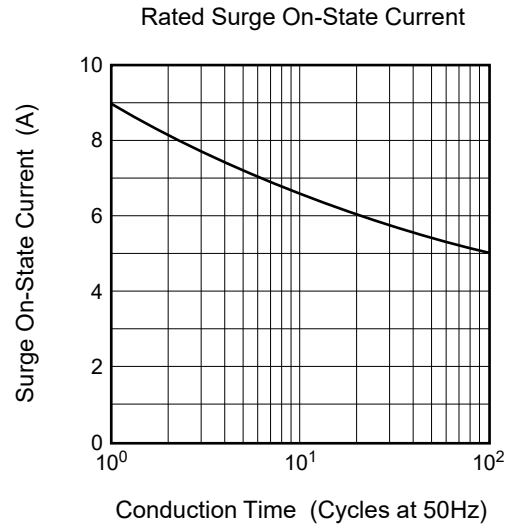
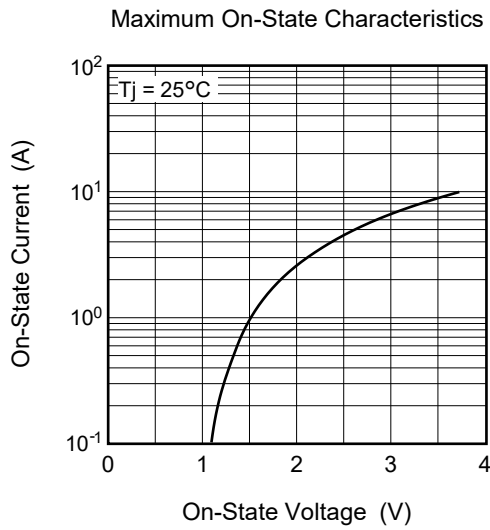
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

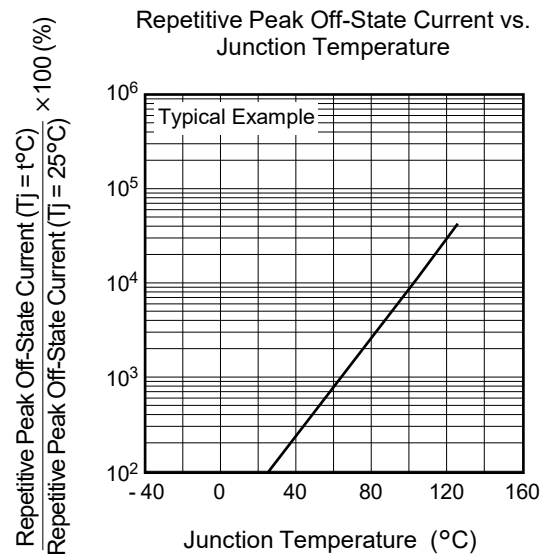
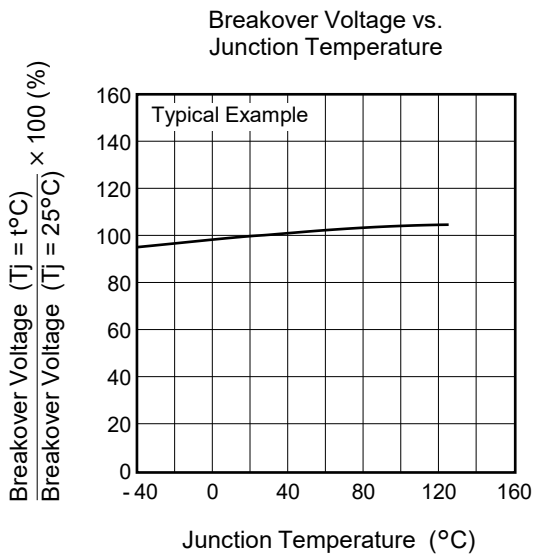
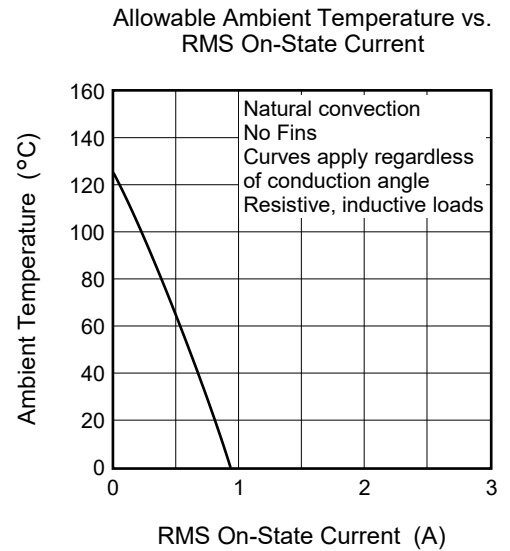
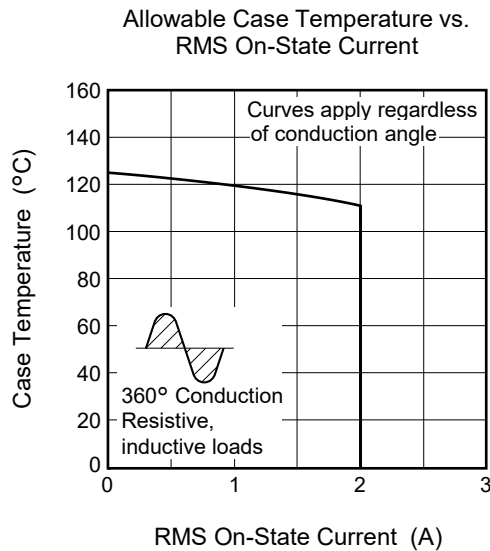
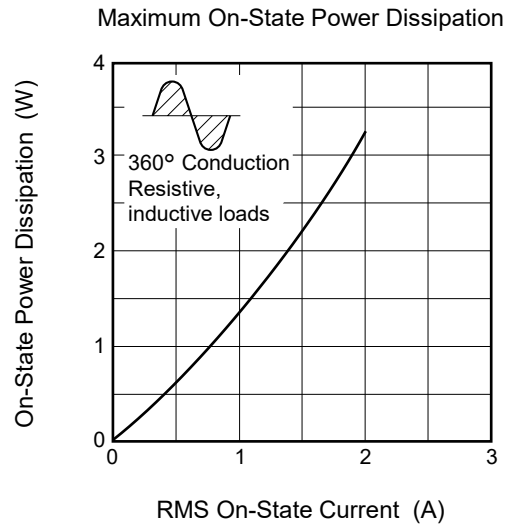
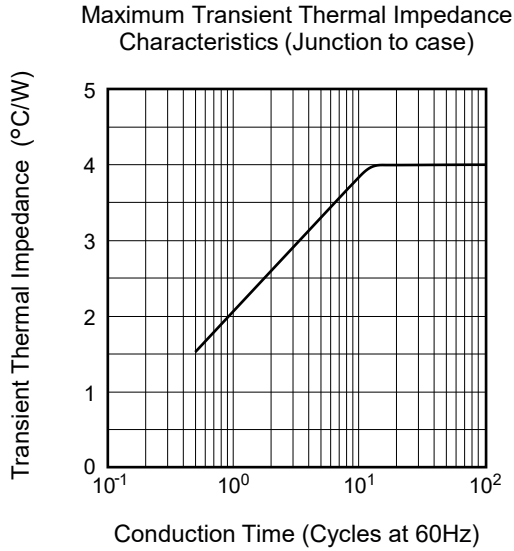
3. Case temperature is measured on the T_2 tab.

4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

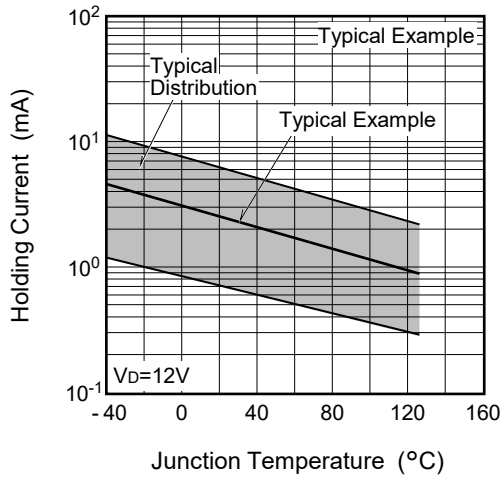
| Test conditions | Commutating voltage and current waveforms (inductive load) |
|---|--|
| 1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -1.0\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$ | |

Performance Curves

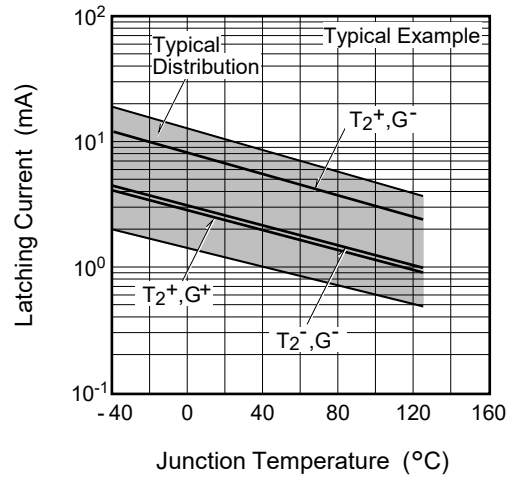




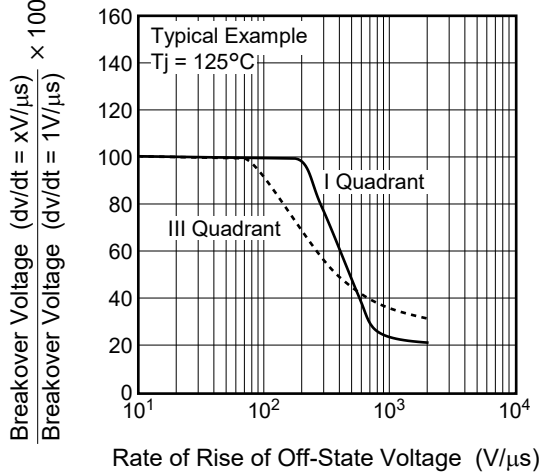
Holding Current vs. Junction Temperature



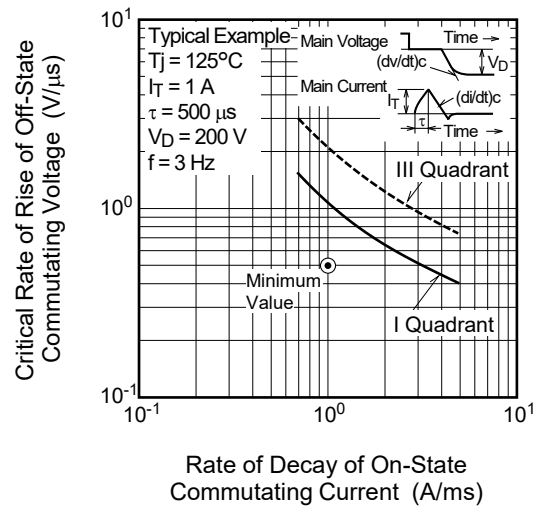
Latching Current vs. Junction Temperature



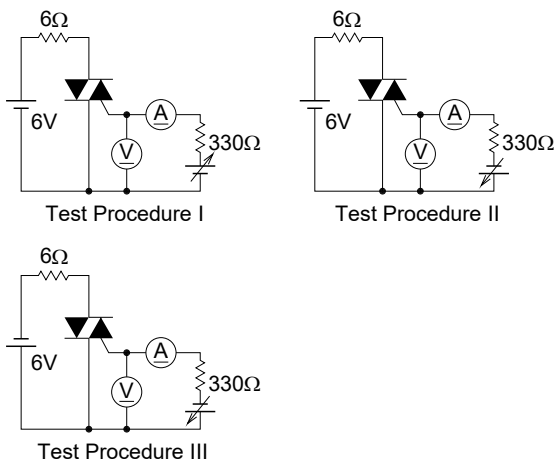
Breakover Voltage vs. Rate of Rise of Off-State Voltage (Tj=125°C)



Commutation Characteristics (Tj=125°C)

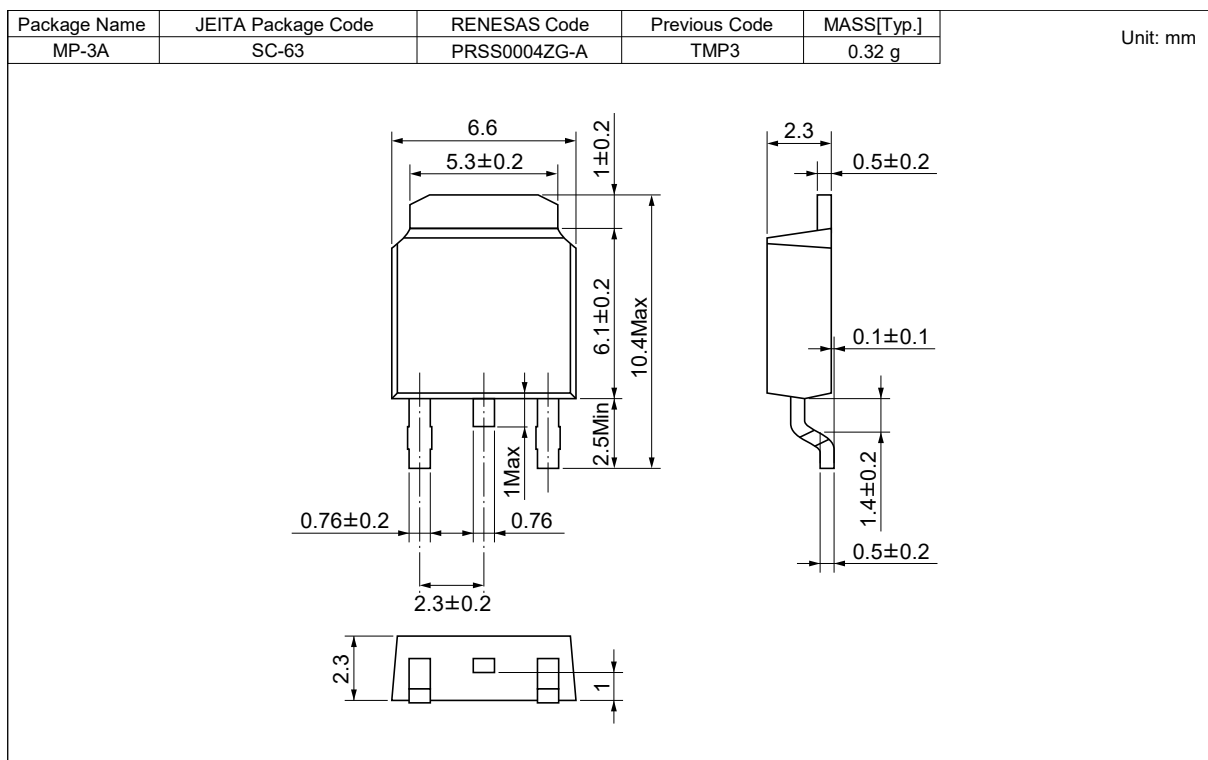


Gate Trigger Characteristics Test Circuits



Package Dimensions

Package Name: MP-3A



Ordering Information

| Orderable Part Number | Package | Packing ^{Note5} | Quantity | Remark |
|-----------------------|---------|--------------------------|-----------|----------------------------------|
| BCR2AS-14A-T13#B00 | MP-3A | Embossed tape | 3000 pcs. | |
| BCR2AS-14A#B00 | MP-3A | Tube | 75 pcs. | Tube packing is to be abolished. |

Note: 5. Please confirm the specification about the shipping in detail.

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(Rev.4.0-1 November 2017)



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