

BCR4CM-16LH

800V - 4A - Triac

Medium Power Use

R07DS0255EJ0300

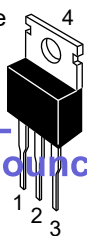
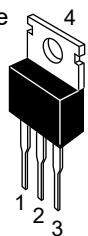
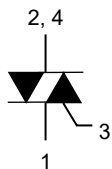
Rev.3.00

Feb. 1, 2019

Features

- $I_T (RMS)$: 4 A
- V_{DRM} : 800 V
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 35 mA or 10 mA (I_{GT} item:1)
- T_j : 150°C
- Planar Passivation Type
- High Commutation

Outline

| | | | |
|---|--|---|--|
| RENESAS Package code: PRSS0004AG-A (Package name: TO-220AB) Ordering code #BB0  | RENESAS Package code: PRSS0004AT-A (Package name: TO-220ABA) Ordering code #BH0  |  | 1. T ₁ Terminal 2. T ₂ Terminal 3. Gate Terminal 4. T ₂ Terminal |
|---|--|---|--|

EOL announced

Application

Power supply, motor control, heater control, solenoid control, and other general purpose AC control applications.

Maximum Ratings

| Parameter | Symbol | Voltage class | |
|--|-----------|---------------|------|
| | | 16 | Unit |
| Repetitive peak off-state voltage ^{Note1} | V_{DRM} | 800 | V |
| Non-repetitive peak off-state voltage ^{Note1} | V_{DSM} | 960 | V |

| Parameter | Symbol | Ratings | Unit | Conditions |
|--------------------------------|-------------|-------------|------------------|---|
| RMS on-state current | $I_T (RMS)$ | 4 | A | Commercial frequency, sine full wave 360°conduction, $T_c = 132^\circ\text{C}$ ^{Note3} |
| Surge on-state current | I_{TSM} | 30 | A | 60 Hz sinewave 1 full cycle, peak value, non-repetitive |
| I^2t for fusion | I^2t | 3.7 | A ² s | Value corresponding to 1 cycle of half wave 60 Hz, surge on-state current |
| Peak gate power dissipation | P_{GM} | 3 | W | |
| Average gate power dissipation | $P_{G(AV)}$ | 0.3 | W | |
| Peak gate voltage | V_{GM} | 10 | V | |
| Peak gate current | I_{GM} | 2 | A | |
| Junction Temperature | T_j | -40 to +150 | °C | |
| Storage temperature | T_{stg} | -40 to +150 | °C | |

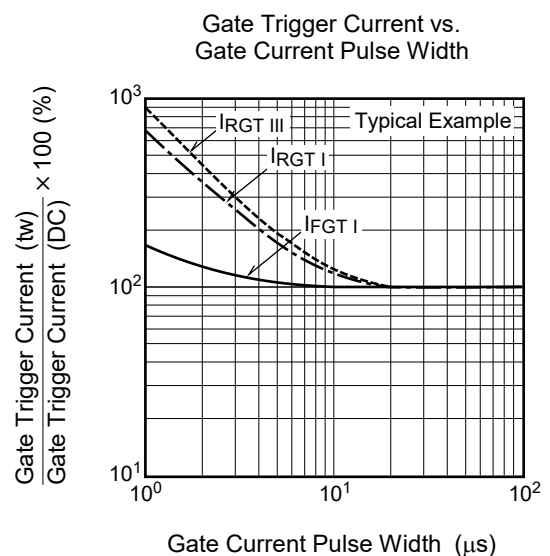
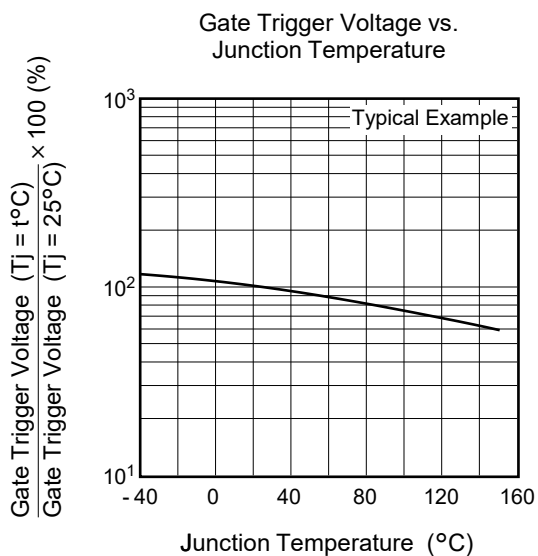
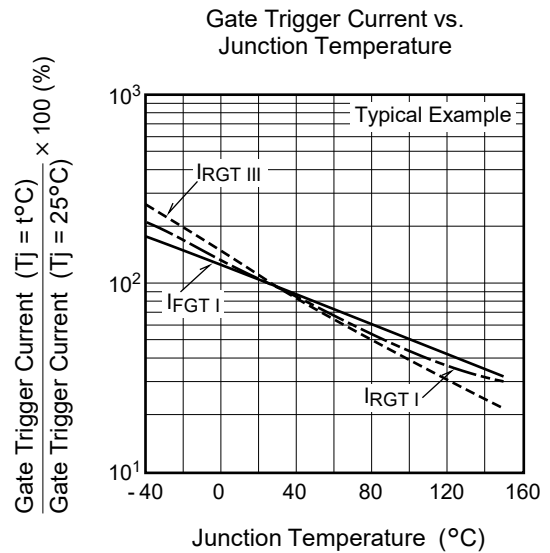
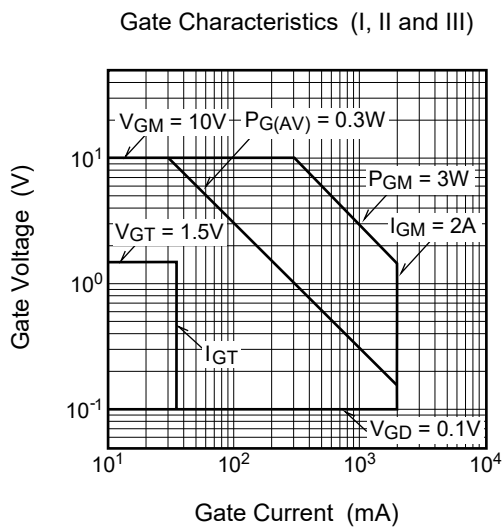
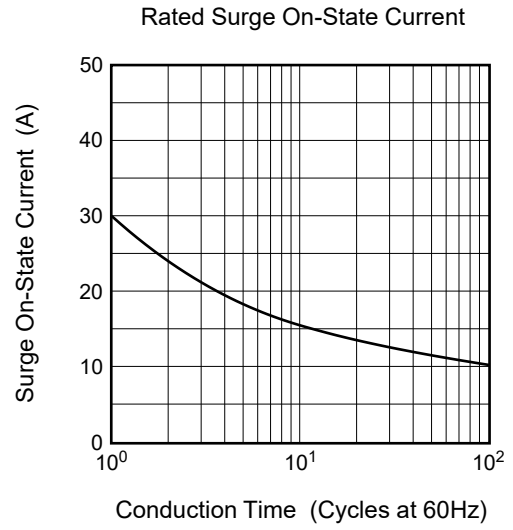
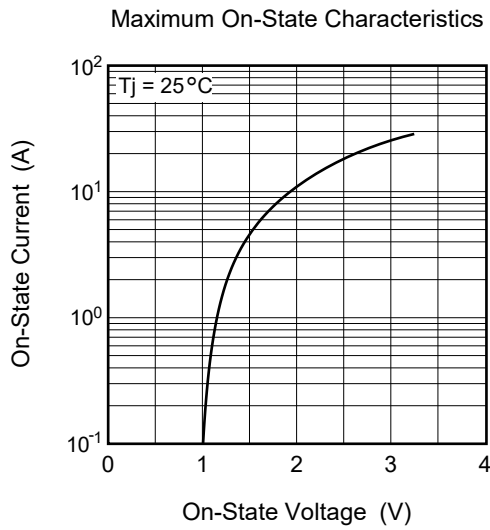
Electrical Characteristics

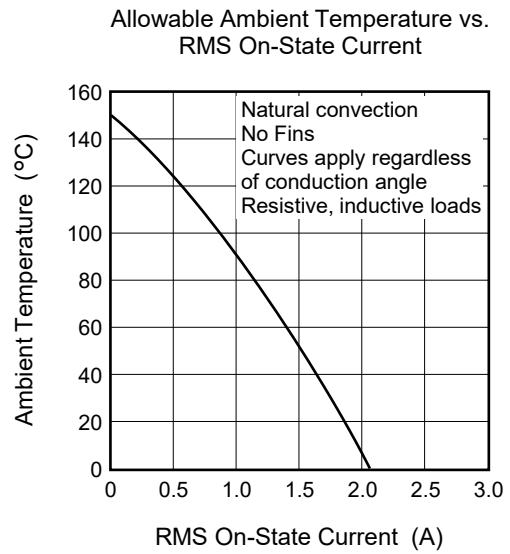
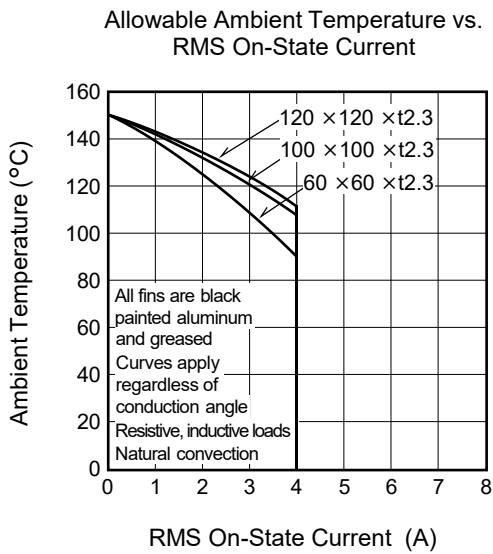
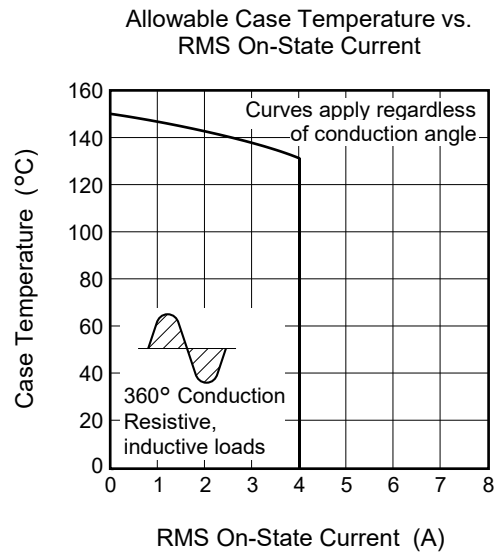
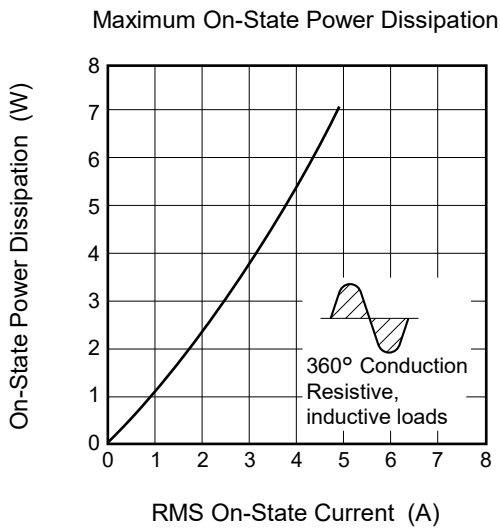
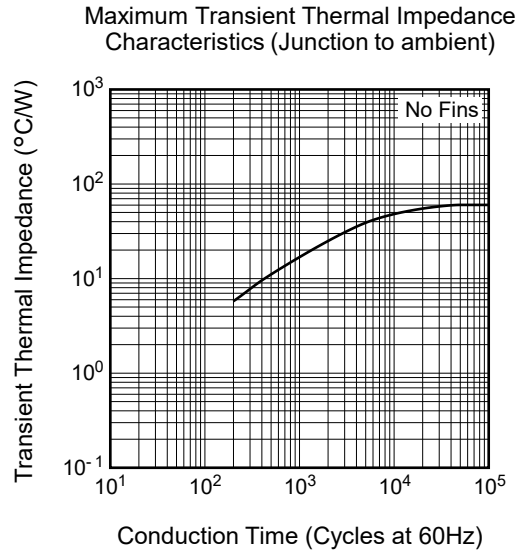
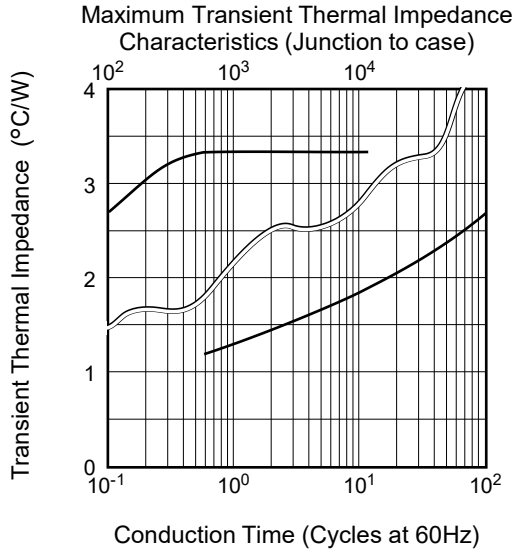
| Parameter | Symbol | BCR4CM-16LH-1 (I _{GT} item:1) | | | BCR4CM-16LH | | | Unit | Test conditions | |
|--|----------------------|---|------|------|-------------|------|------|------|--|---|
| | | Min. | Typ. | Max. | Min. | Typ. | Max. | | | |
| Repetitive peak off-state current | I _{DRM} | — | — | 2.0 | — | — | 2.0 | mA | T _J = 150°C V _{DRM} applied | |
| On-state voltage | V _{TM} | — | — | 1.6 | — | — | 1.6 | V | T _C = 25°C, I _{TM} = 6 A instantaneous measurement | |
| Gate trigger voltage ^{Note2} | I | V _{FGTI} | — | — | 1.5 | — | — | 1.5 | V | T _J = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω |
| | II | V _{RGTI} | — | — | 1.5 | — | — | 1.5 | V | |
| | III | V _{RGTIII} | — | — | 1.5 | — | — | 1.5 | V | |
| Gate trigger current ^{Note2} | I | I _{FGTI} | — | — | 10 | — | — | 35 | mA | T _J = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω |
| | II | I _{RGTI} | — | — | 10 | — | — | 35 | mA | |
| | III | I _{RGTIII} | — | — | 10 | — | — | 35 | mA | |
| Gate non-trigger voltage | V _{GD} | 0.2 | — | — | 0.2 | — | — | V | T _J = 125°C V _D = 1/2 V _{DRM} | |
| | | 0.1 | — | — | 0.1 | — | — | V | T _J = 150°C V _D = 1/2 V _{DRM} | |
| Thermal resistance | R _{th(j-c)} | — | — | 3.3 | — | — | 3.3 | °C/W | Junction to case ^{Note3,4} | |
| Critical-rate of fall of on-state commutating current ^{Note5} | (di/dt) _c | 2.5 | — | — | — | — | — | A/ms | T _J = 125°C (dv/dt) _c < 10 V/μs | |
| | | — | — | — | 3.0 | — | — | A/ms | T _J = 125°C (dv/dt) _c < 100 V/μs | |

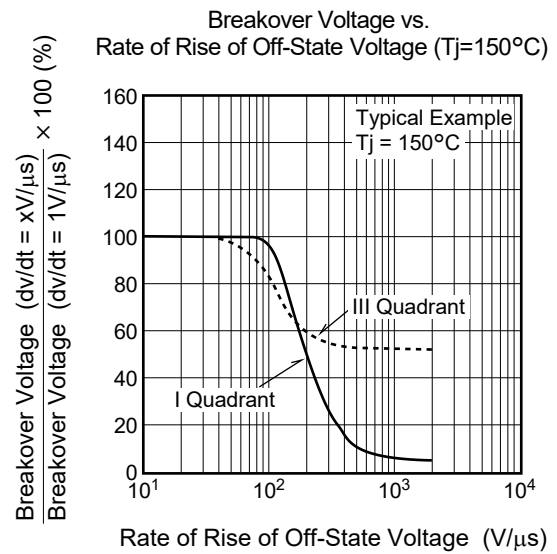
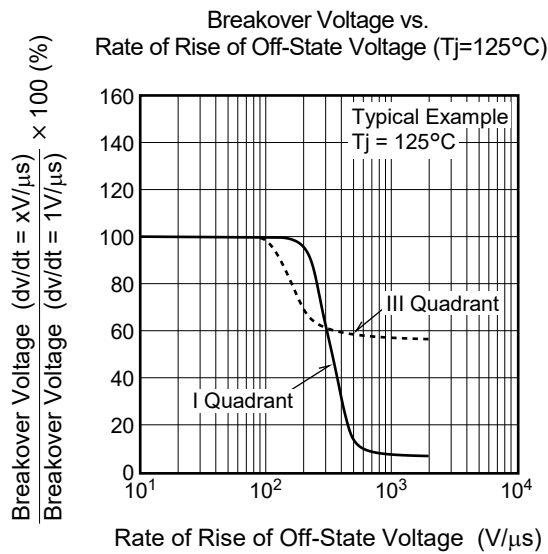
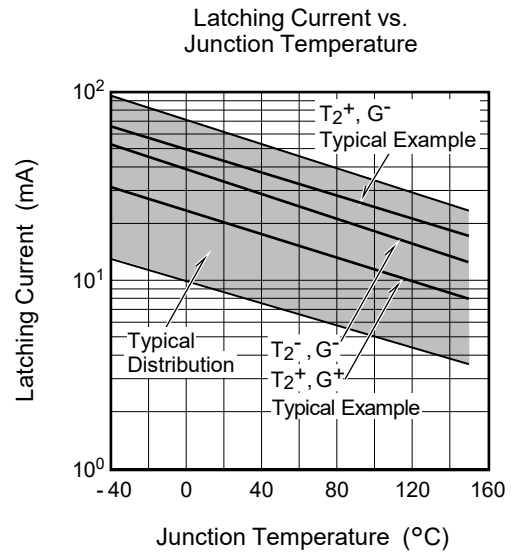
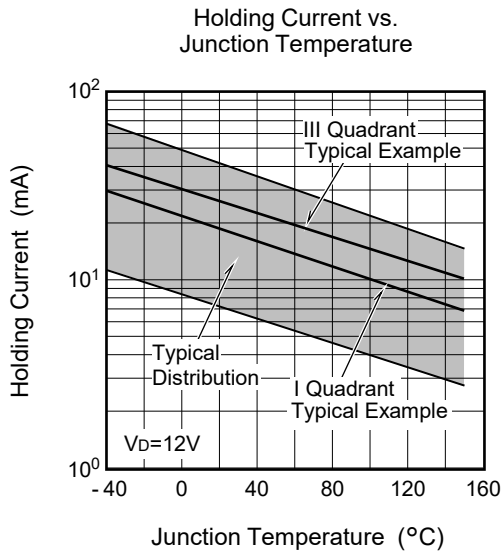
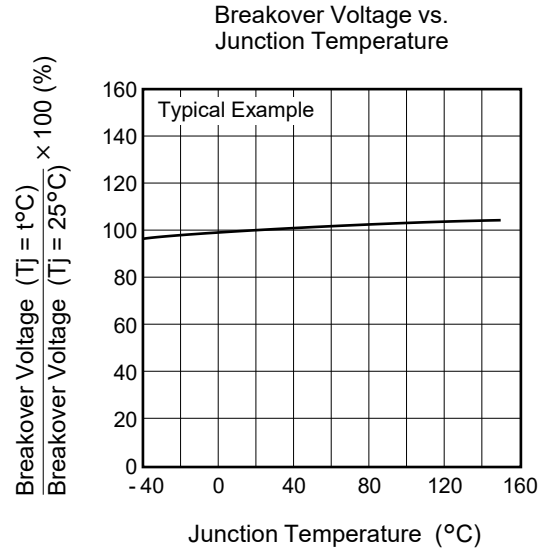
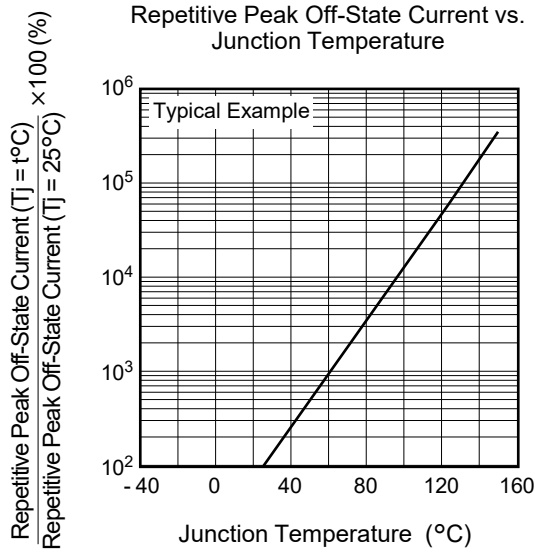
- Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. Case temperature is measured at the T₂ tab 1.5 mm away from the molded case.
4. The contact thermal resistance R_{th(c-f)} in case of greasing is 1.0°C/W.
5. Test conditions of the critical-rate of fall of on-state commutation current are shown in the table below.

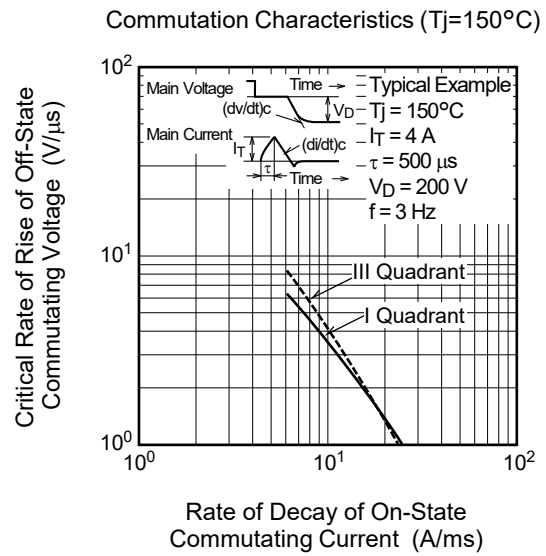
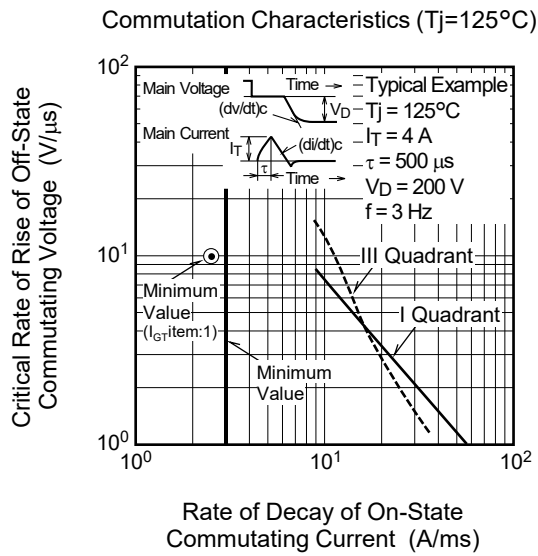
| Test conditions | Commutating voltage and current waveforms (inductive load) |
|--|---|
| 1. Junction temperature T _J = 125°C 2. Peak off-state voltage V _D = 400 V 3. Rate of rise of off-state commutating voltage (dv/dt) _c < 10 V/μs (I _{GT} item : 1) (dv/dt) _c < 100 V/μs | |

Performance Curves

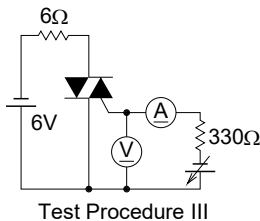
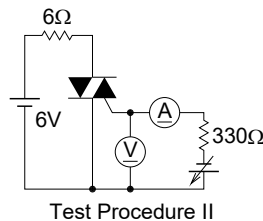
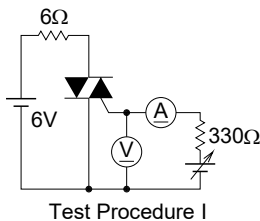




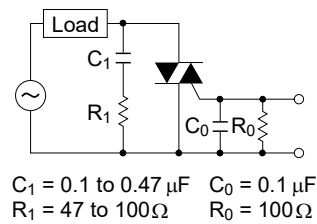




Gate Trigger Characteristics Test Circuits

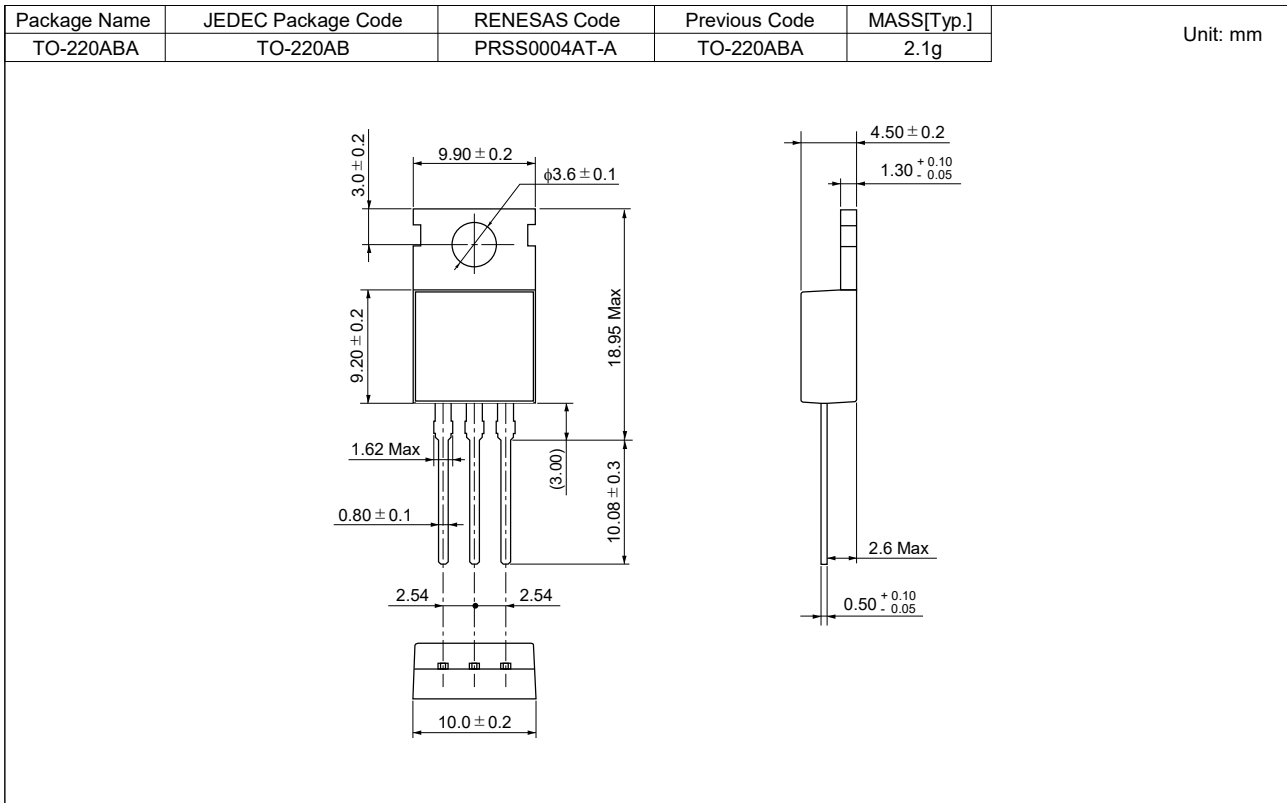


Recommended peripheral components for Triac

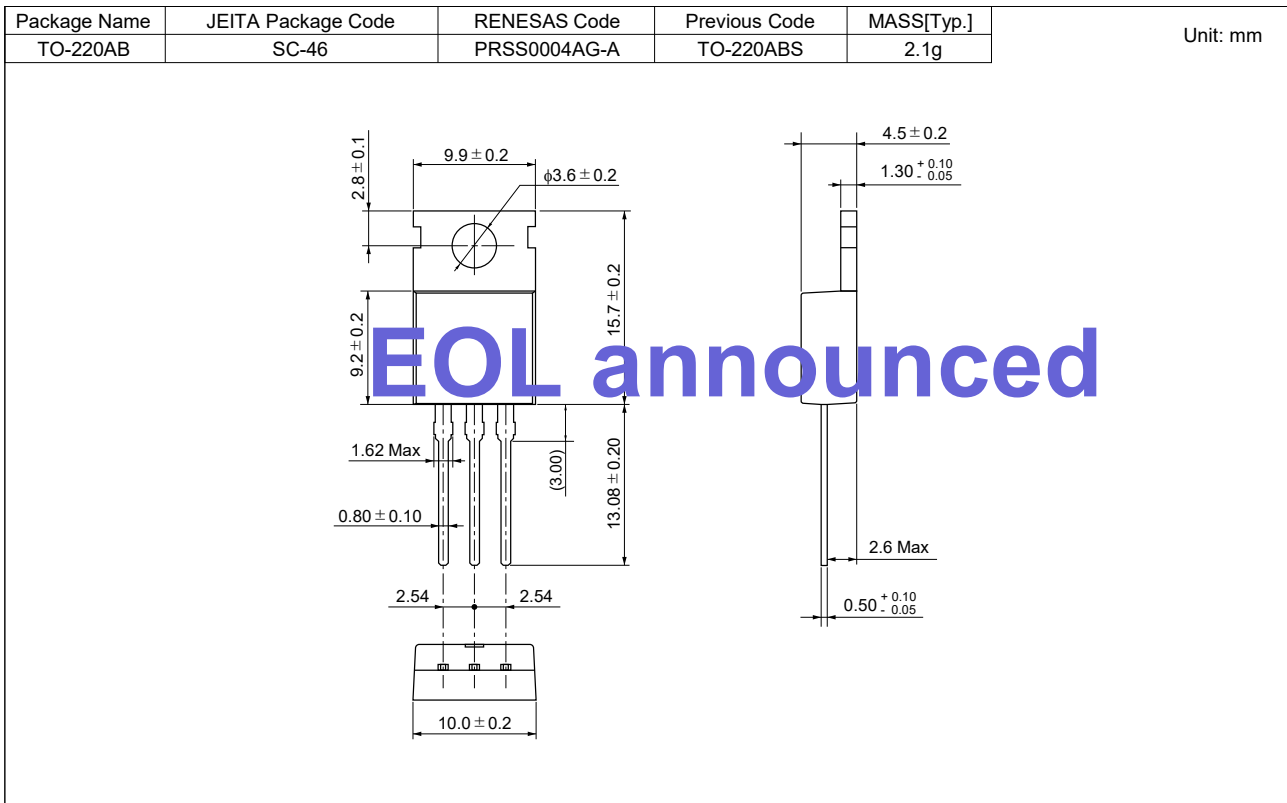


Package Dimensions

Ordering code: #BH0



Ordering code: #BB0



Ordering Information

| Orderable Part Number | Package | Quantity ^{Note6} | Remark | Status |
|-----------------------|-----------|---------------------------|---------------------------------------|-----------------|
| BCR4CM-16LH#BH0 | TO-220ABA | 50 pcs./ tube | Straight type | Mass Production |
| BCR4CM-16LH-1#BH0 | TO-220ABA | 50 pcs./ tube | Straight type, I _{GT} item:1 | |
| BCR4CM-16LH#BB0 | TO-220ABS | 50 pcs./ tube | Straight type | EOL announced |
| BCR4CM-16LH-1#BB0 | TO-220ABS | 50 pcs./ tube | Straight type, I _{GT} item:1 | |

Notes: 6. Please confirm the specification about the shipping in detail.

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