

BCR10CM-16LH

800V - 10A - Triac

Medium Power Use

R07DS0320EJ0300

Rev.3.00

Feb. 1, 2019

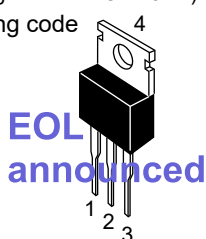
Features

- $I_T(RMS)$: 10 A
- V_{DRM} : 800 V
- I_{FGT1} , I_{RGT1} , $I_{RGT III}$: 50 mA or 35 mA(I_{GT} item:1)
- T_j : 150°C
- Planar Passivation Type
- High Commutation

Outline

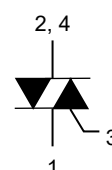
RENESAS Package code: PRSS0004AG-A
(Package name: TO-220AB)

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

Application

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

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		16	
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	$I_T(RMS)$	10	A	Commercial frequency, sine full wave 360°conduction, $T_c = 128^\circ\text{C}$ ^{Note3}
Surge on-state current	I_{TSM}	100	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	41.6	A ² s	Value corresponding to 1 cycle of half wave 60 Hz, surge on-state current
Peak gate power dissipation	P_{GM}	5	W	
Average gate power dissipation	$P_{G(AV)}$	0.5	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	BCR10CM-16LH-1 (I _{GT} item:1)			BCR10CM-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}	—	—	1.5	—	—	1.5	V	T _c = 25°C, I _{TM} = 15 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}	—	—	35	—	—	50	mA	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II I _{RGTI}	—	—	35	—	—	50	mA	
	III I _{RGTIII}	—	—	35	—	—	50	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)}	—	—	1.8	—	—	1.8	°C/W	Junction to case ^{Note3,4}
Critical-rate of fall of on-state commutating current ^{Note5}	(di/dt) _c	6	—	—	10	—	—	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.

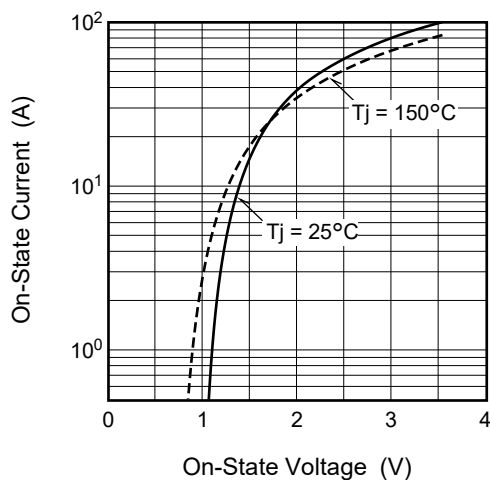
3. Case temperature is measured at the T₂ tab 1.5 mm away from the molded case.4. The contact thermal resistance R_{th(c-f)} in case of greasing is 1.0°C/W.

5. Test conditions of the critical-rate of fall of on-state commutation current are shown in the table below.

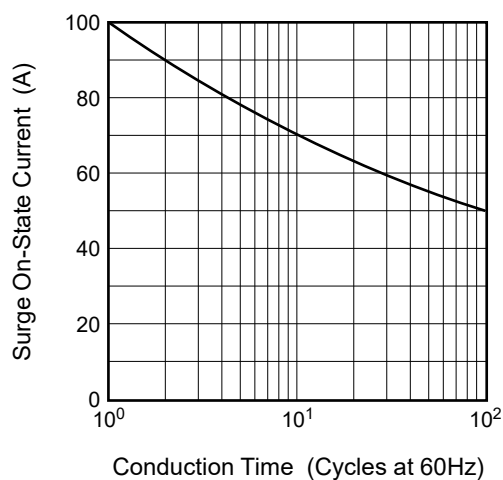
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T _j = 125°C 2. Peak off-state voltage V _D = 400 V 3. Rate of rise of off-state commutating voltage (dv/dt) _c < 100 V/μs	

Performance Curves

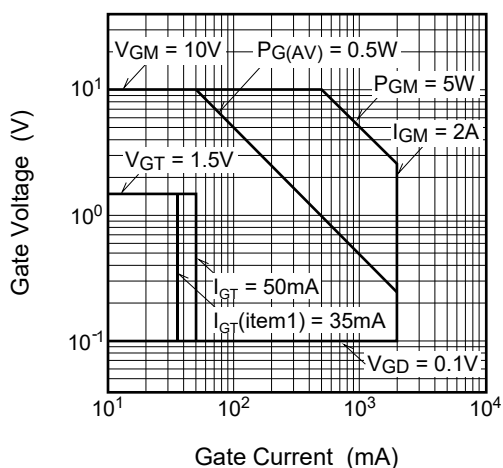
Maximum On-State Characteristics



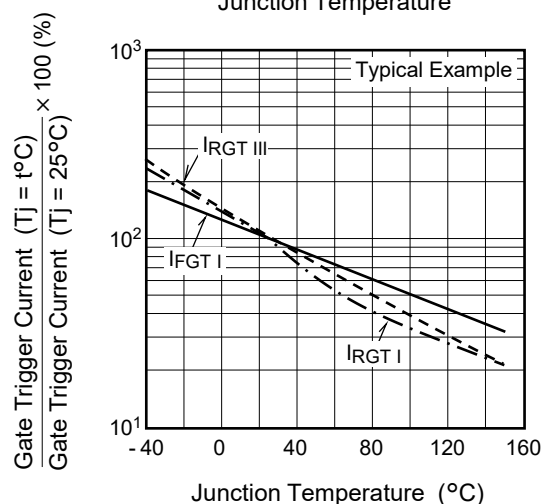
Rated Surge On-State Current



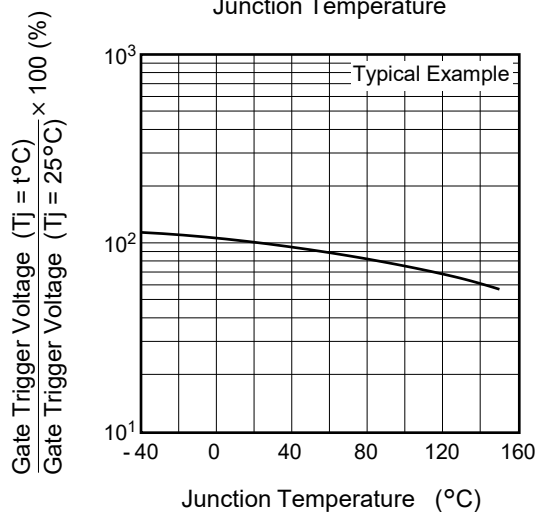
Gate Characteristics (I, II and III)



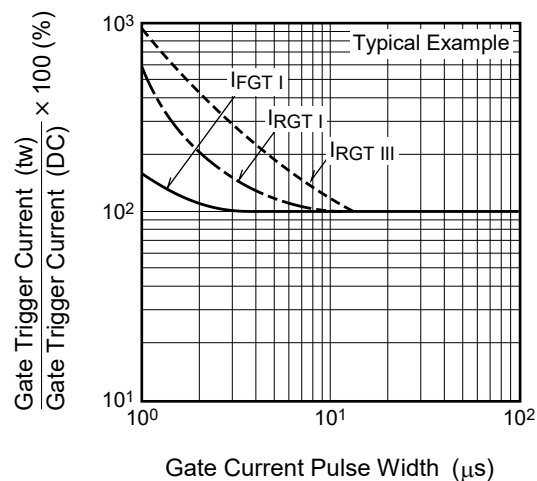
Gate Trigger Current vs. Junction Temperature

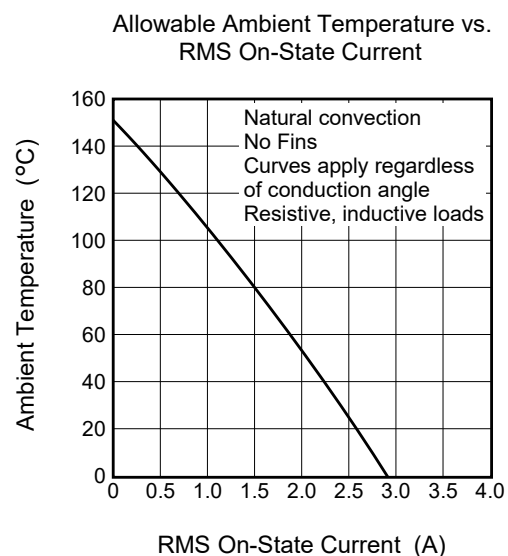
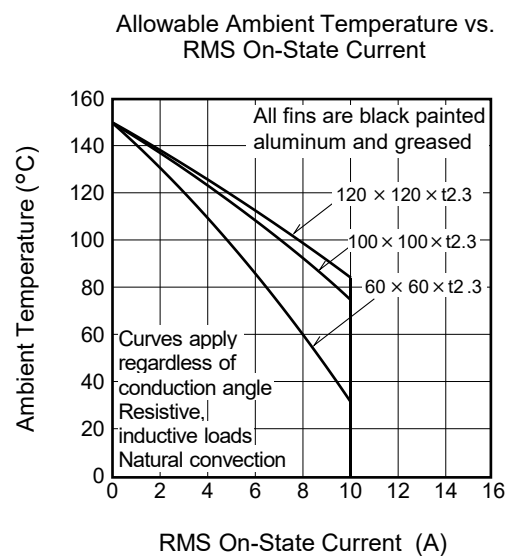
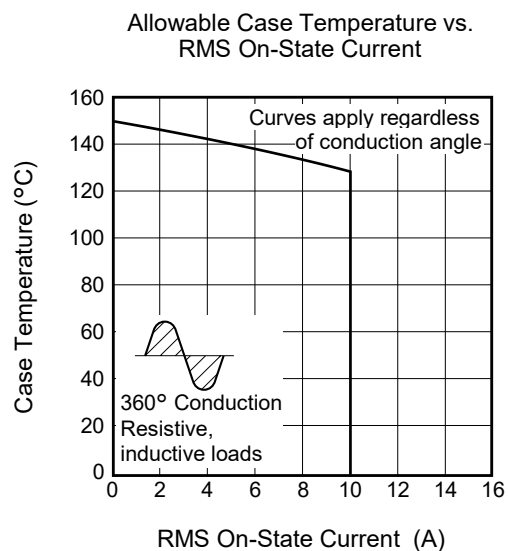
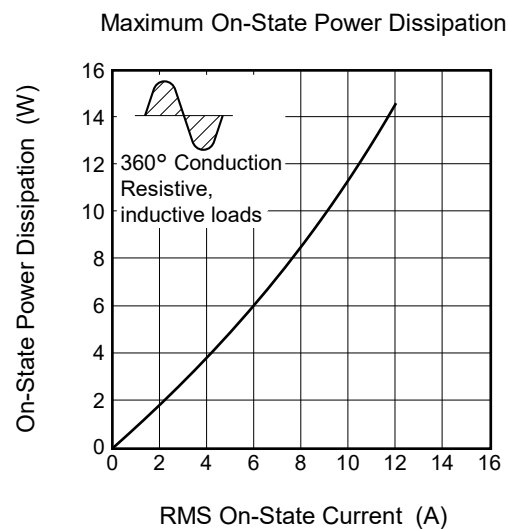
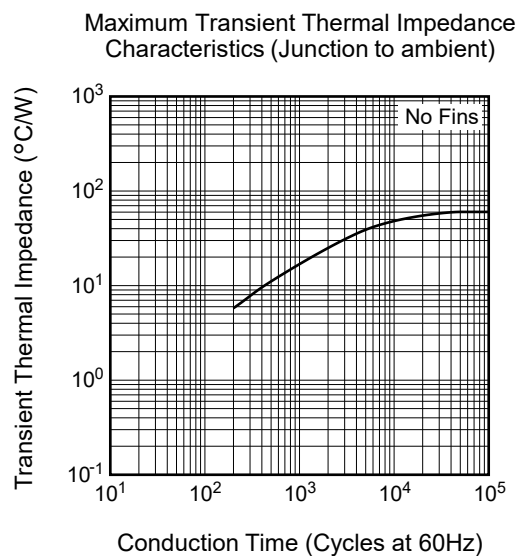
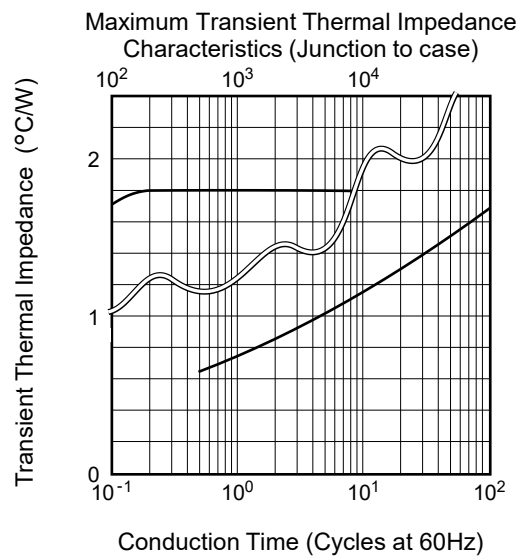


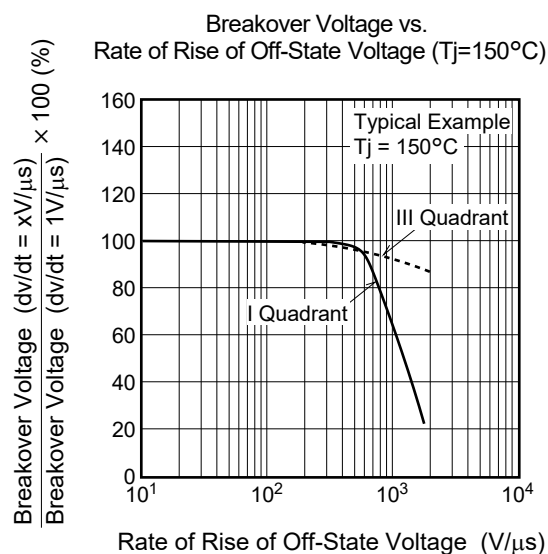
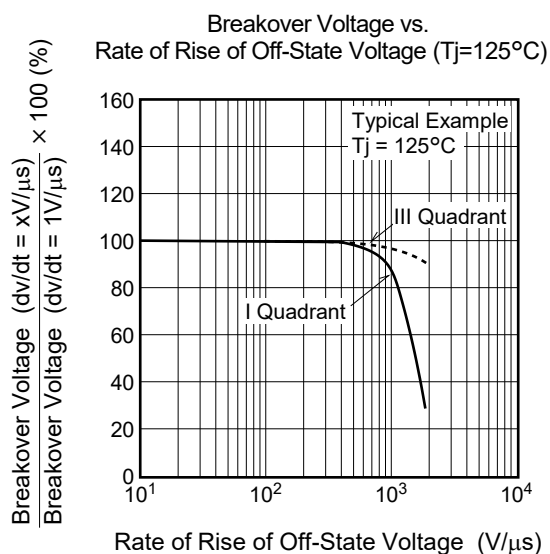
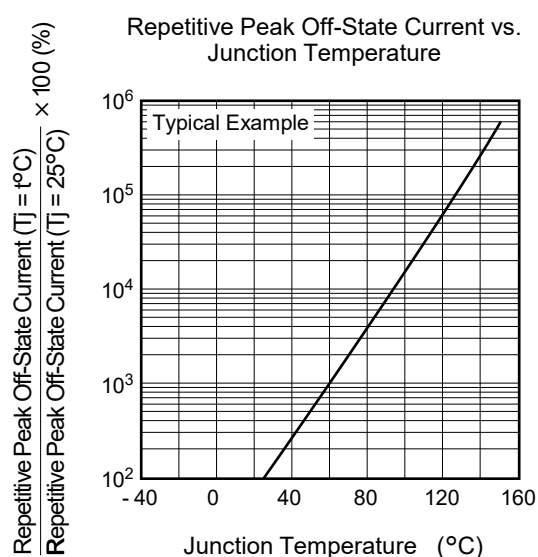
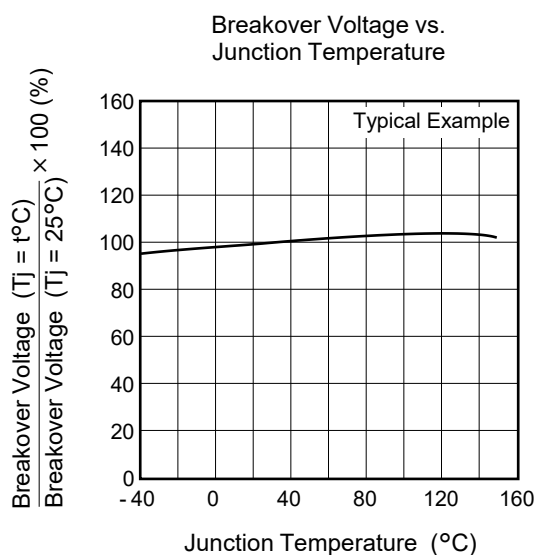
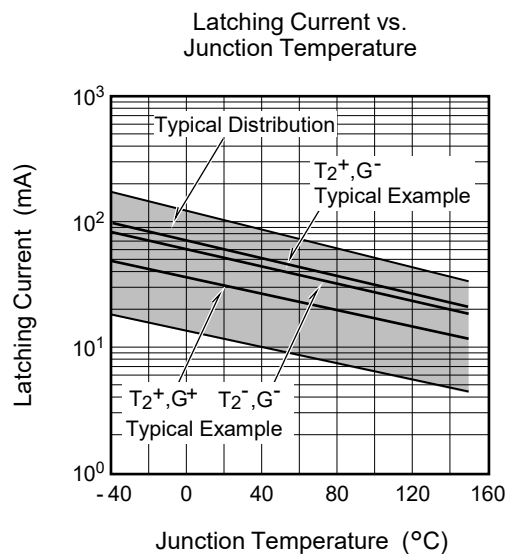
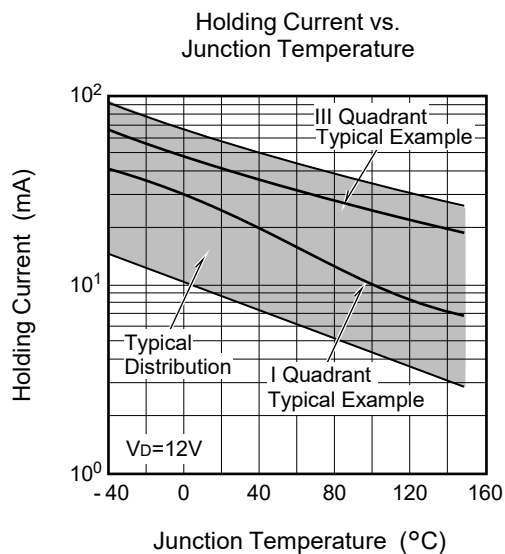
Gate Trigger Voltage vs. Junction Temperature

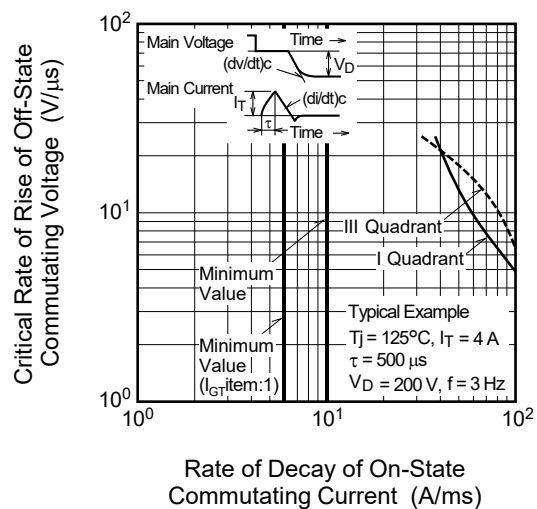
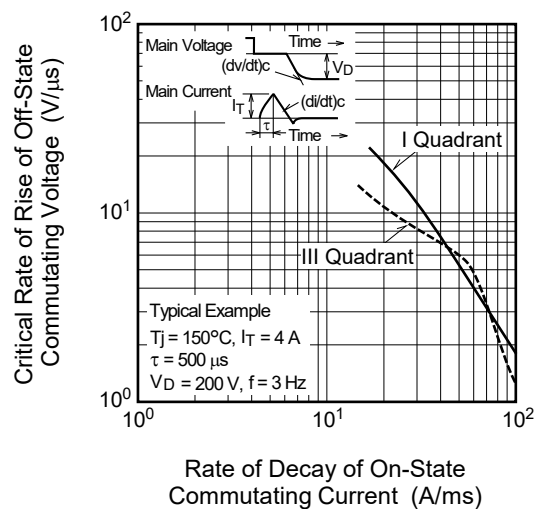


Gate Trigger Current vs. Gate Current Pulse Width

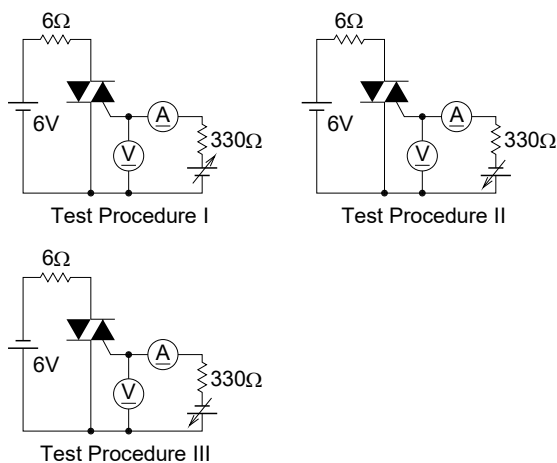




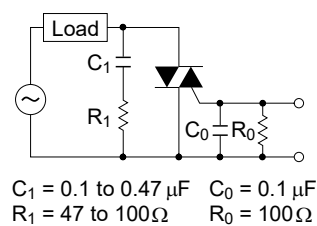


Commutation Characteristics ($T_j=125^\circ\text{C}$)Commutation Characteristics ($T_j=150^\circ\text{C}$)

Gate Trigger Characteristics Test Circuits

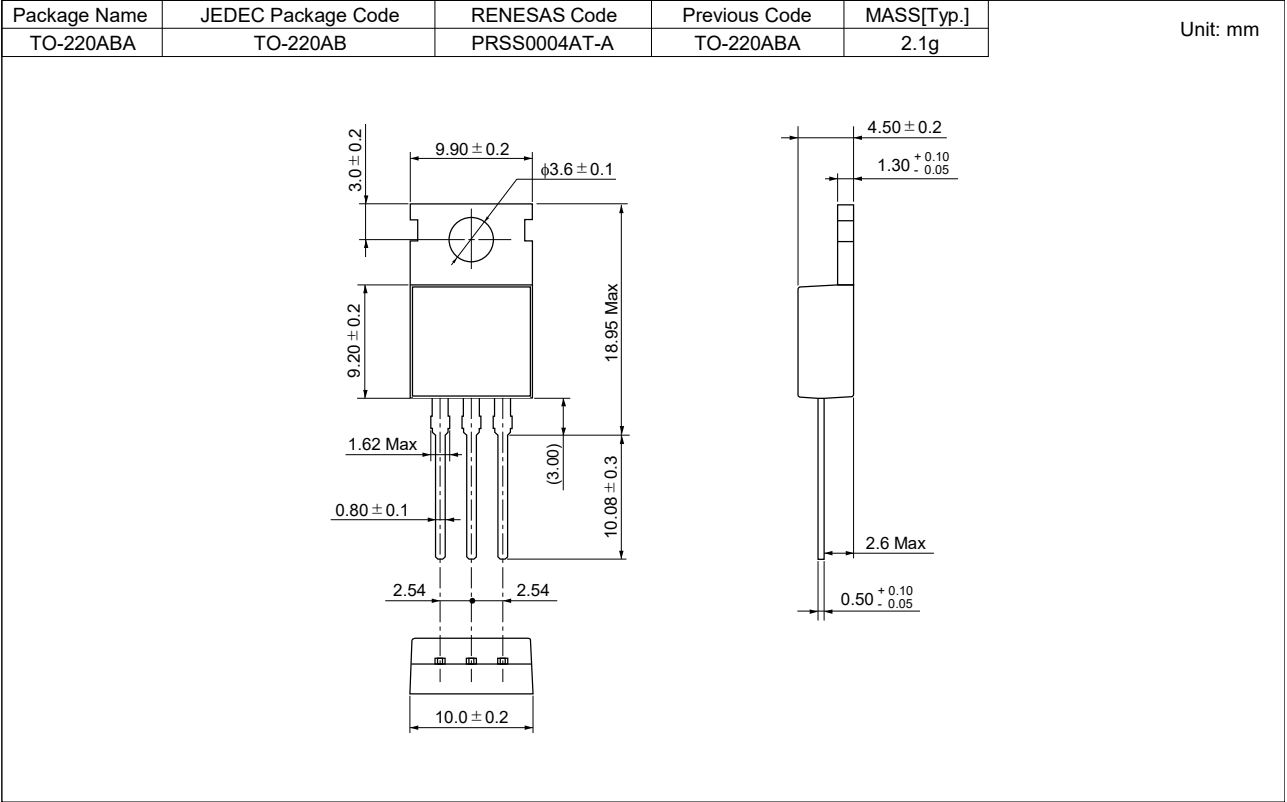


Recommended peripheral components for Triac

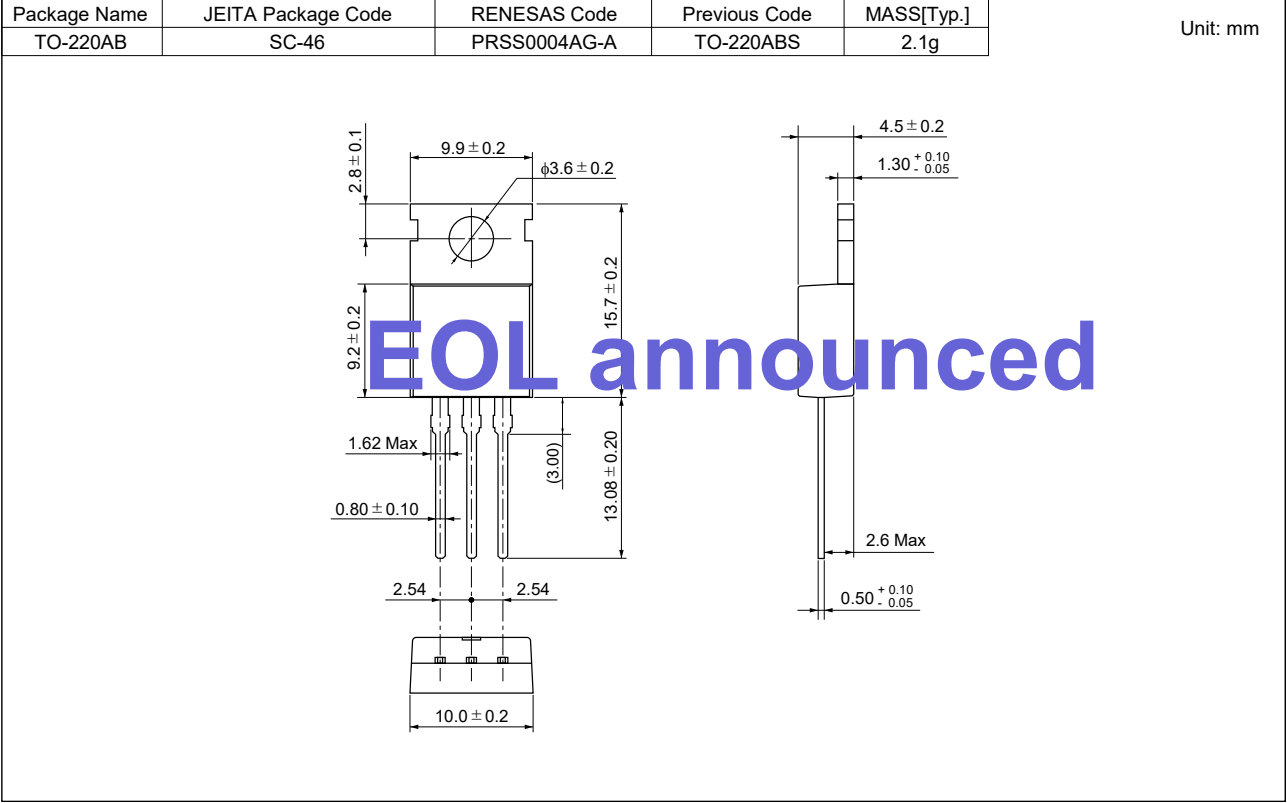


Package Dimensions

Ordering code: #BH0



Ordering code: #BB0



Ordering Information

Orderable Part Number	Package	Quantity ^{Note6}	Remark	Status
BCR10CM-16LH#BH0	TO-220ABA	50 pcs./ tube	Straight type	Mass Production
BCR10CM-16LH-1#BH0	TO-220ABA	50 pcs./ tube	Straight type, I _{GT} item:1	
BCR10CM-16LH#BB0	TO-220ABS	50 pcs./ tube	Straight type	EOL announced
BCR10CM-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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