

BCR16CM-16LB

Triac
Medium Power Use

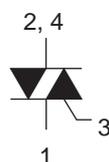
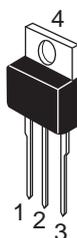
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Features

- $I_{T(RMS)}$: 16 A
- V_{DRM} : 800 V
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 30 mA
- The Product guaranteed maximum junction temperature 150°C
- Non-Insulated Type
- Planar Type

Outline

RENESAS Package code: PRSS0004AA-A
(Package name: TO-220)



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

Applications

Switching mode power supply, washing machine, vacuum cleaner, motor control, heater control, and other general purpose 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

Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	16	A	Commercial frequency, sine full wave 360°conduction, T _c = 118°C
Surge on-state current	I_{TSM}	160	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I ² t for fusion	I ² t	106.5	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	
Mass	—	2.0	g	Typical value

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	2.0	mA	$T_j = 150^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.5	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 25\text{ A}$, instantaneous measurement
Gate trigger voltage ^{Note2}	I	V_{FGTI}	—	—	1.5	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	V_{RGTI}	—	—	1.5	
	III	V_{RGTIII}	—	—	1.5	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	30	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	30	
	III	I_{RGTIII}	—	—	30	
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
		0.1	—	—	V	$T_j = 150^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-c)}$	—	—	1.8	$^\circ\text{C/W}$	Junction to case ^{Note3}
Critical-rate of rise of off-state commutation voltage ^{Note4}	$(dv/dt)_c$	10	—	—	V/ μs	$T_j = 125^\circ\text{C}$
		1	—	—	V/ μs	$T_j = 150^\circ\text{C}$

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

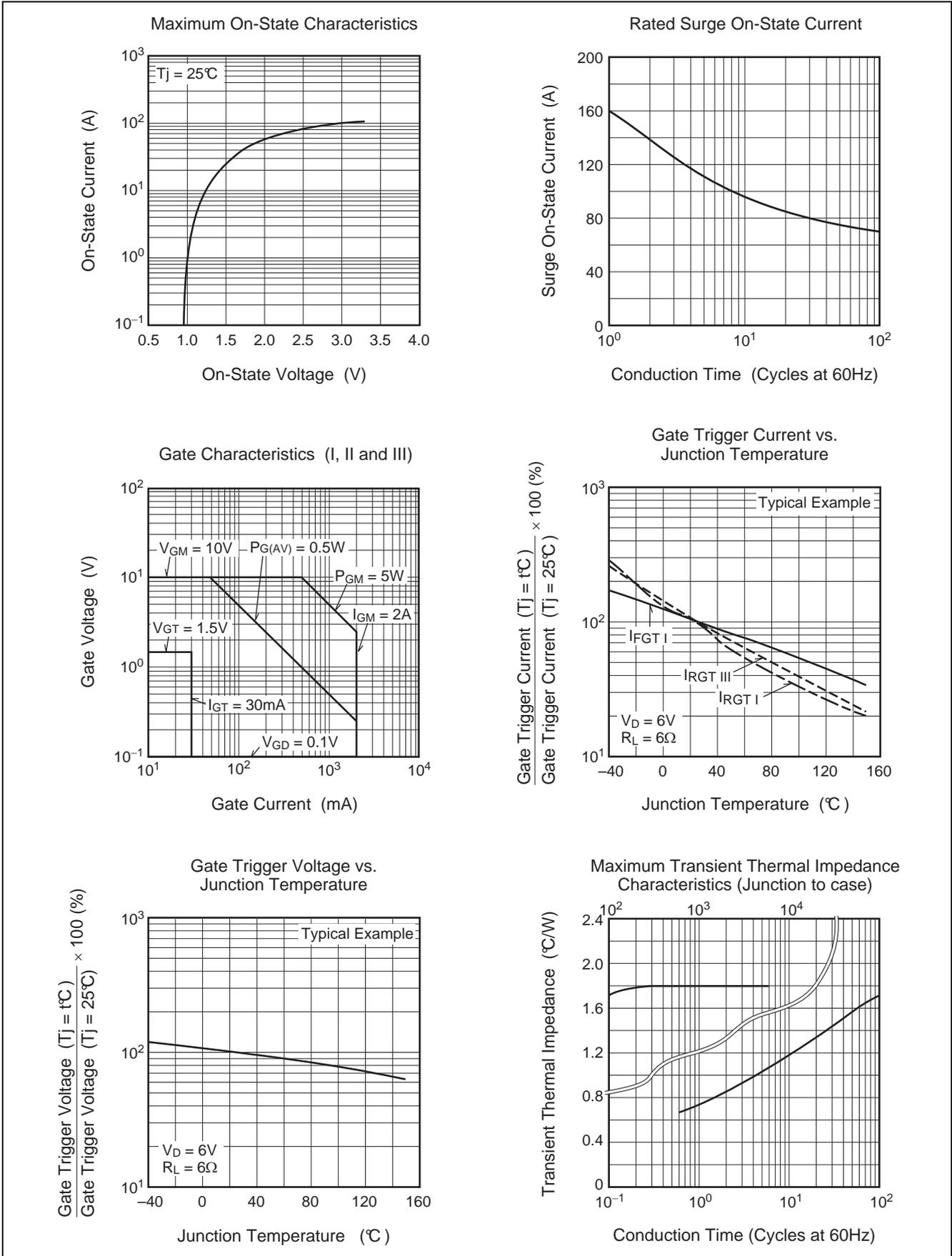
3. Case temperature is measured at the T_2 tab 1.5 mm apart from the molded case.

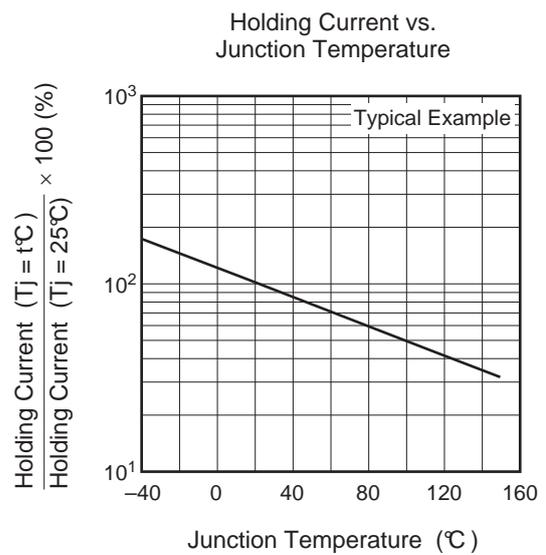
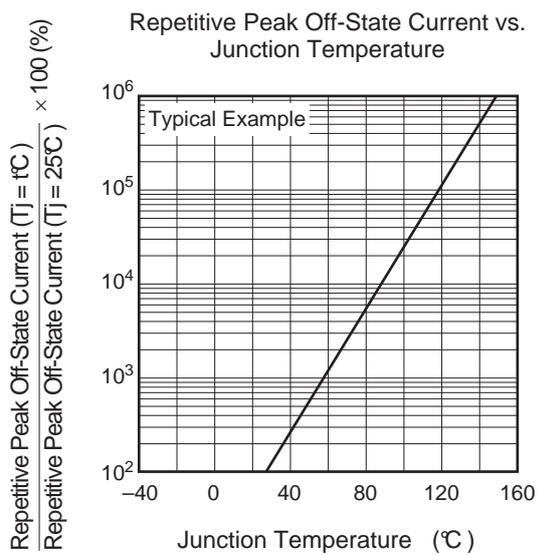
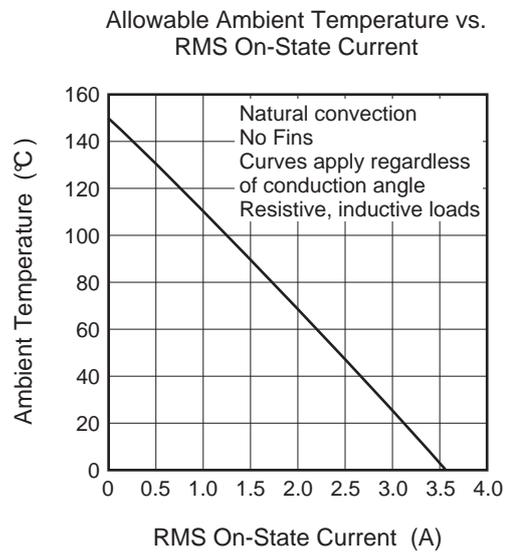
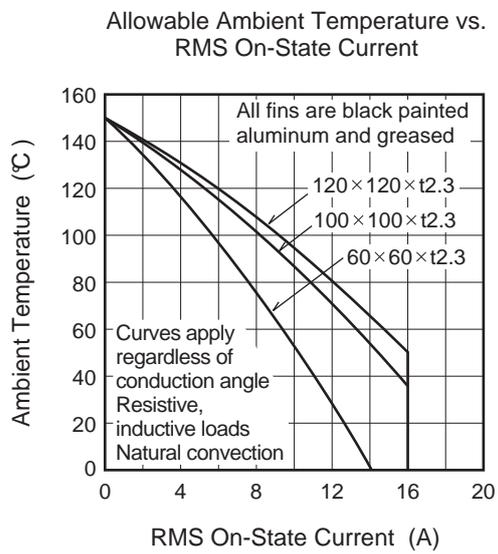
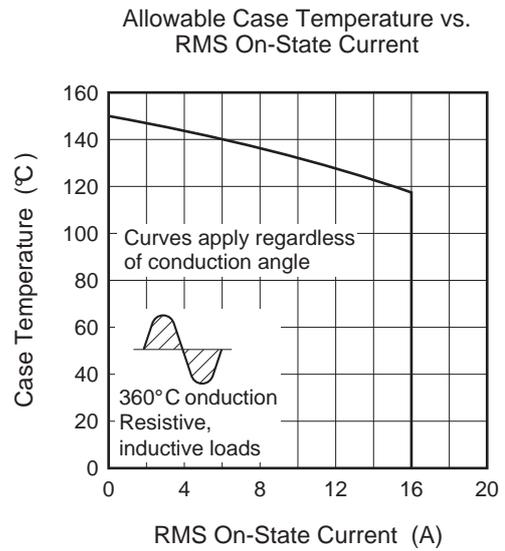
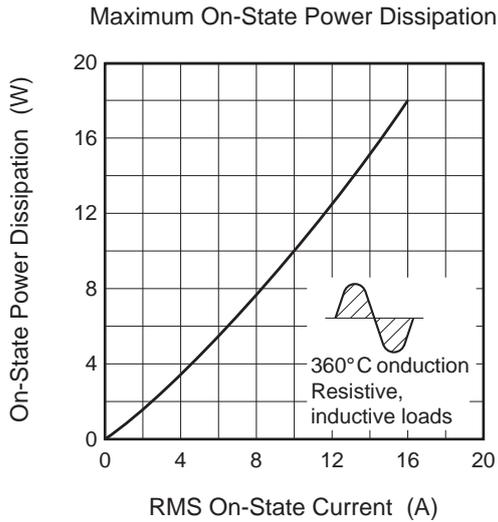
4. The contact thermal resistance $R_{th(c-f)}$ in case of greasing is 1.0°C/W .

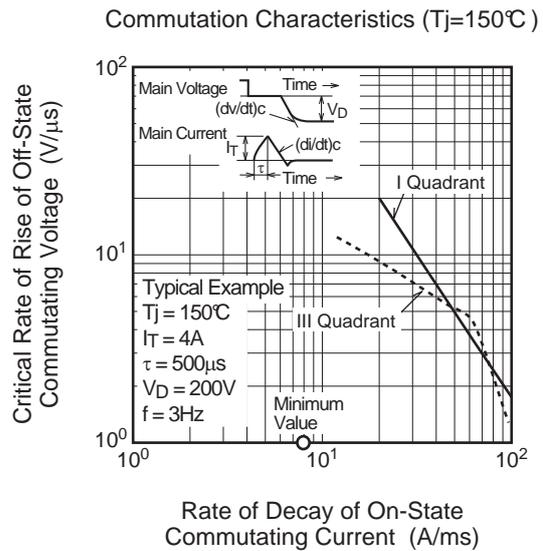
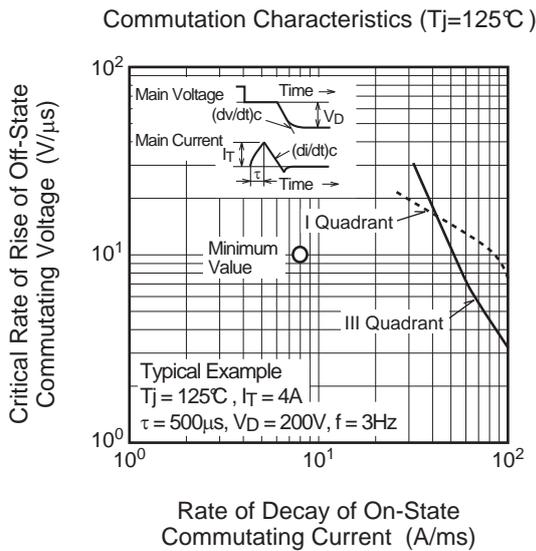
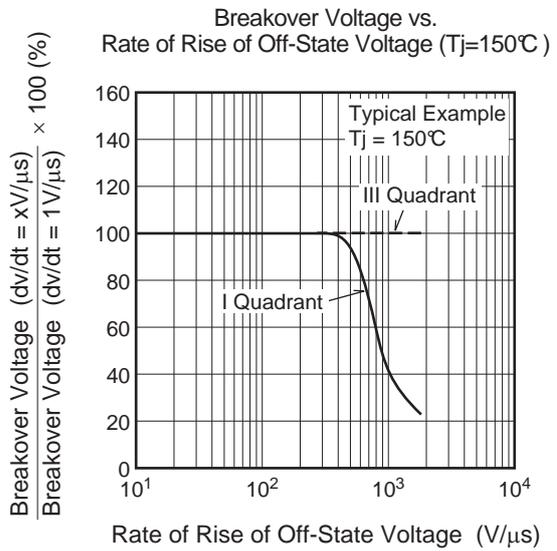
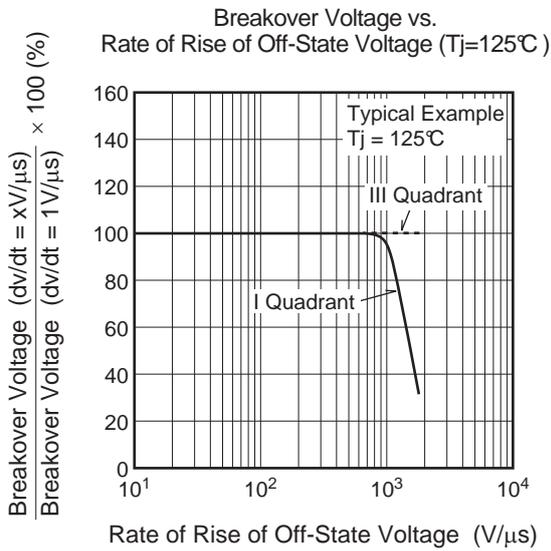
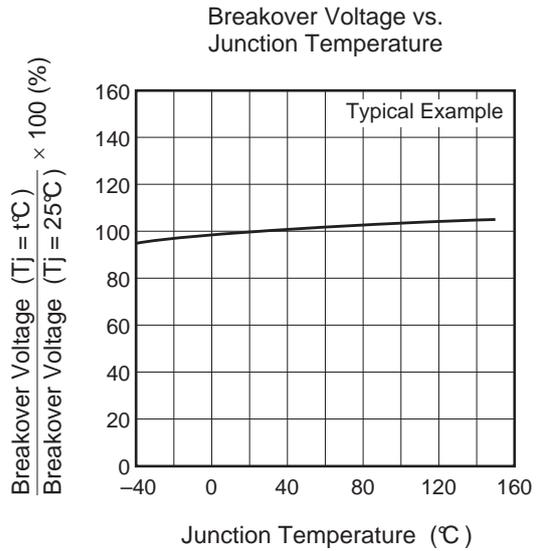
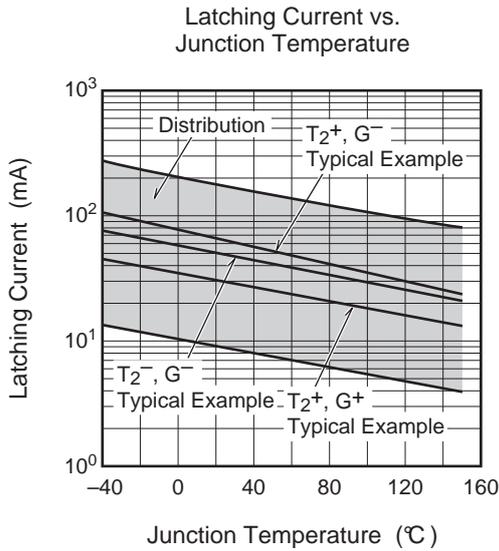
5. Test conditions of the critical-rate of rise of off-state commutation voltage is shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}/150^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -8\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

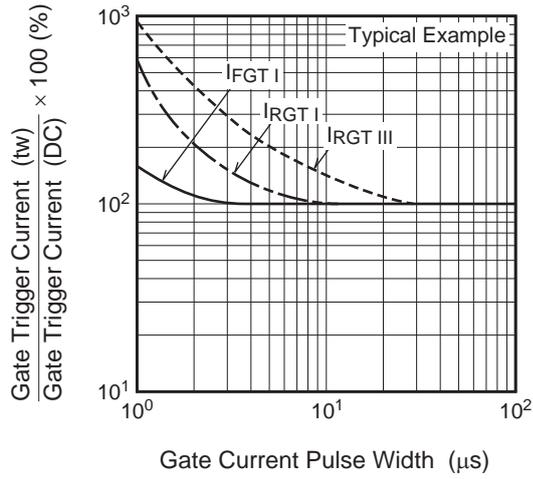
Performance Curves



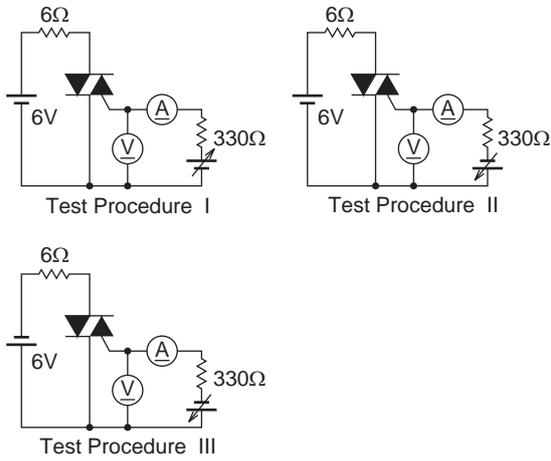




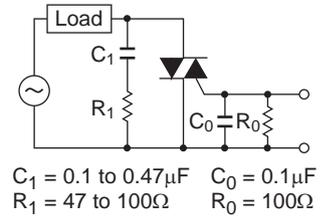
Gate Trigger Current vs. Gate Current Pulse Width



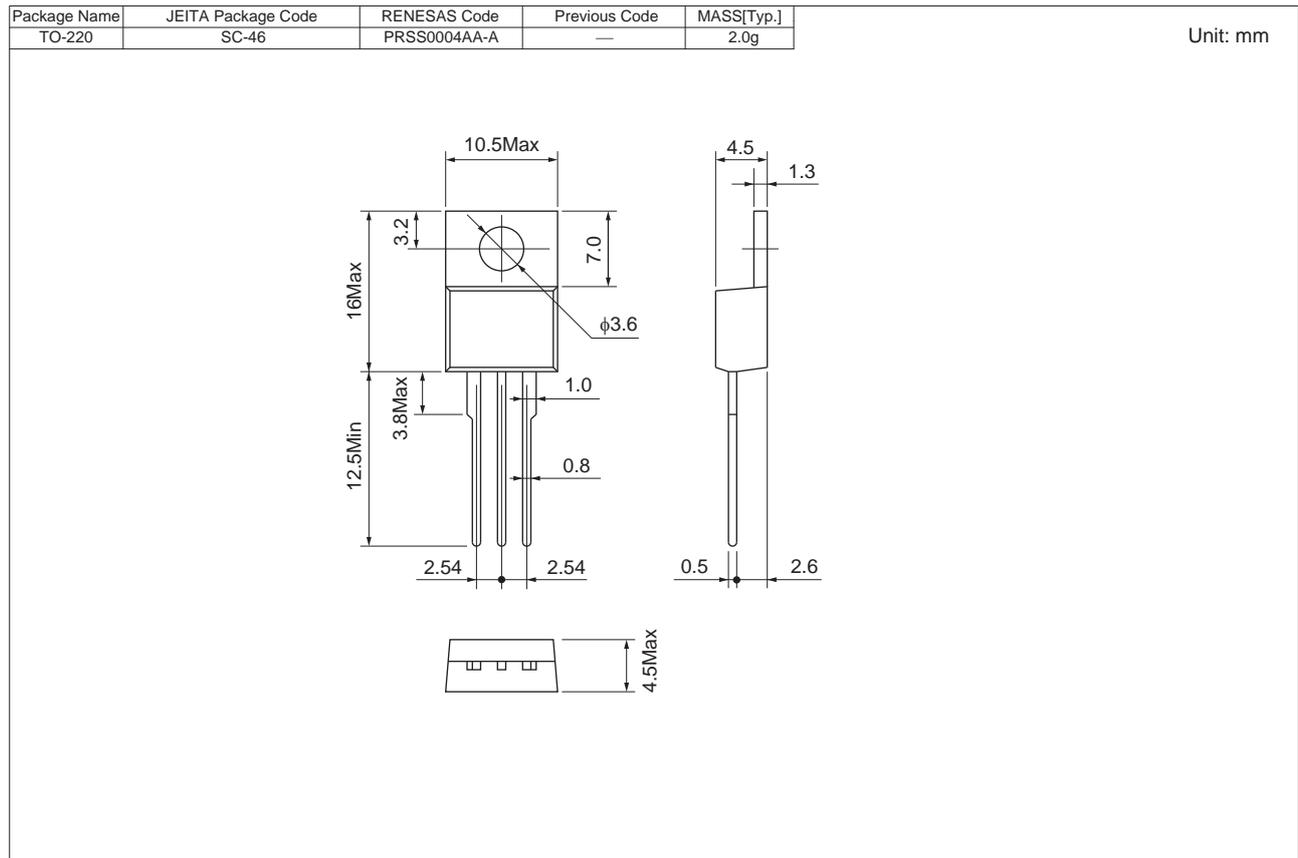
Gate Trigger Characteristics Test Circuits



Recommended Circuit Values Around The Triac



Package Dimensions



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR16CM-16LB#B00	Bag	100 pcs.	Straight type
BCR16CM-16LBA8#B00	Tube	50 pcs.	A8 Lead form

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

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