

BCR30CM-8LB

400V-30A-Triac

Medium Power Use

R07DS1105EJ0100

Rev.1.00

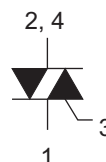
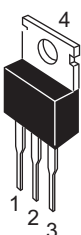
Aug 08, 2013

Features

- $I_{T(RMS)}$: 30 A
- V_{DRM} : 400 V
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$: 30 mA
- T_j : 150 °C
- Planar Passivation Type
- Non-Insulated Type

Outline

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



1. T_1 Terminal
2. T_2 Terminal
3. Gate Terminal
4. T_2 Terminal

Applications

Vacuum cleaner, electric heater, light dimmer, copying machine, and other general controlling devices

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		8	
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	400	V
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	500	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	30	A	Commercial frequency, sine full wave 360° conduction, $T_c = 107^\circ\text{C}$ ^{Note3}
Surge on-state current	I_{TSM}	300	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	450	A^2s	Value corresponding to 1 cycle of half wave 60Hz, 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	—	2.1	g	Typical value

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions	
Repetitive peak off-state current	I_{DRM}	—	—	3.0	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied	
				5.0	mA	$T_j = 150^\circ\text{C}$, V_{DRM} applied	
On-state voltage	V_{TM}	—	—	1.5	V	$T_c = 25^\circ\text{C}$, $I_{\text{TM}} = 45\text{ A}$, Instantaneous measurement	
Gate trigger voltage ^{Note2}	I	$V_{\text{FGT I}}$	—	—	2.0	V	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	$V_{\text{RGT I}}$	—	—	2.0	V	
	III	$V_{\text{RGT III}}$	—	—	2.0	V	
Gate trigger current ^{Note2}	I	$I_{\text{FGT I}}$	—	—	30	mA	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	$I_{\text{RGT I}}$	—	—	30	mA	
	III	$I_{\text{RGT III}}$	—	—	30	mA	
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{\text{DRM}}$	
		0.1	—	—	V/ μs	$T_j = 150^\circ\text{C}$, $V_D = 1/2 V_{\text{DRM}}$	
Thermal resistance	$R_{\text{th(j-c)}}$	—	—	1.1	$^\circ\text{C/W}$	Junction to case ^{Note3 Note4}	
Critical-rate of rise of off-state commutating voltage ^{Note5}	$(dv/dt)_c$	10	—	—	V/ μs	$T_j = 125^\circ\text{C}$	
		1	—	—	V/ μs	$T_j = 150^\circ\text{C}$	

Notes: 1. Gate open.

2. Measurement using the gate trigger characteristics measurement circuit.

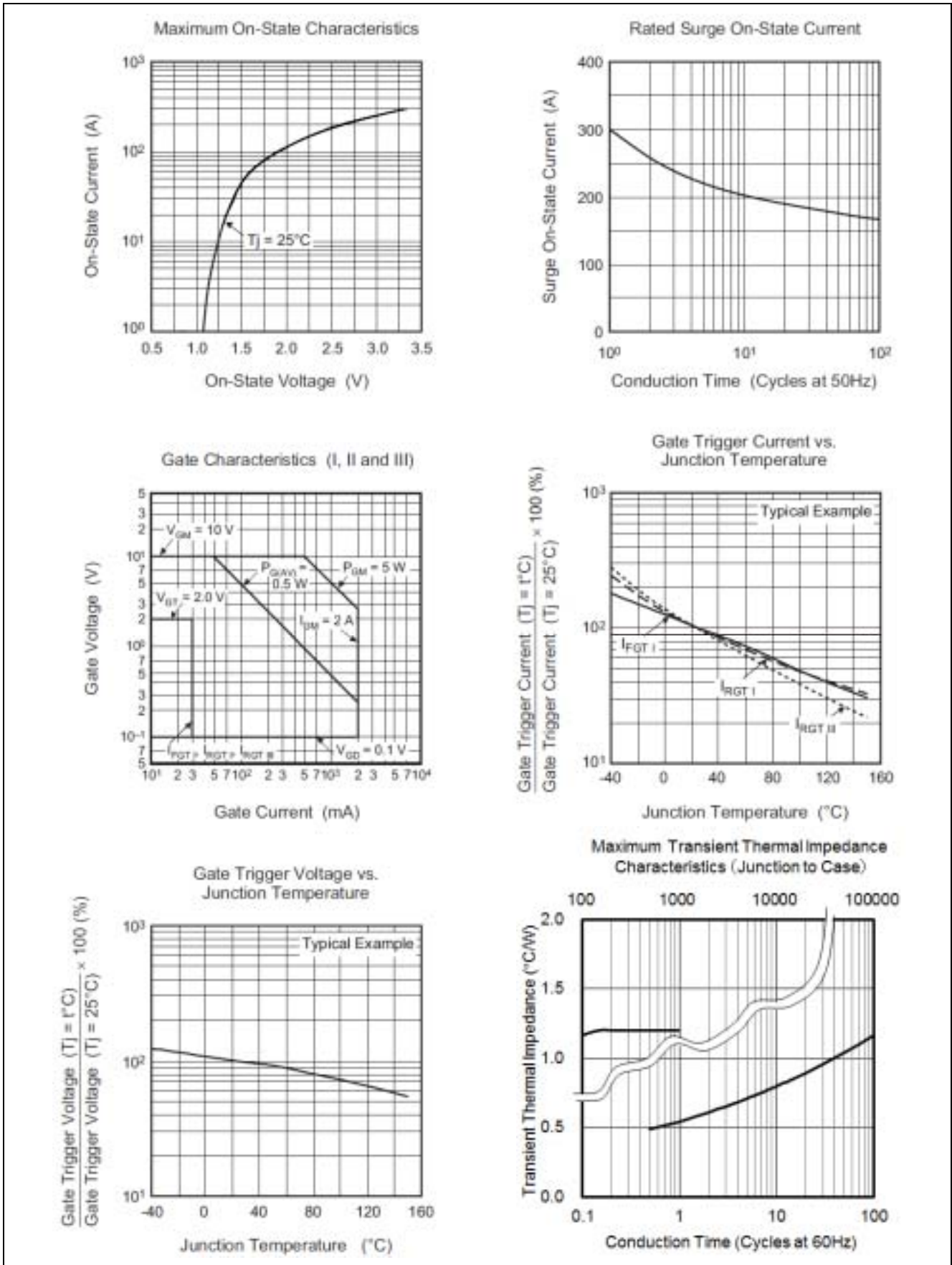
3. Case temperature is measured at the T_2 tab 1.5 mm apart from the molded case.

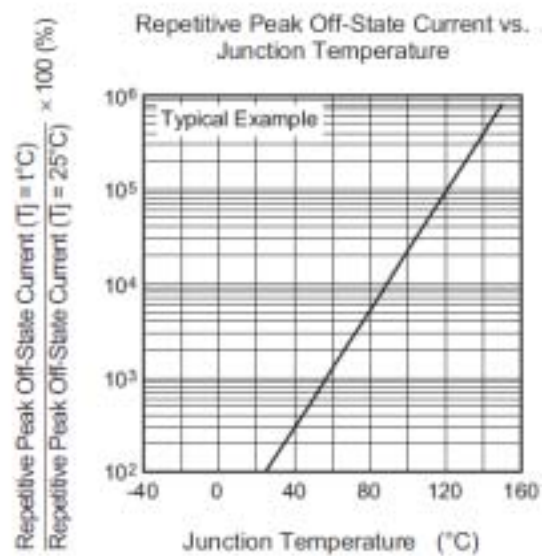
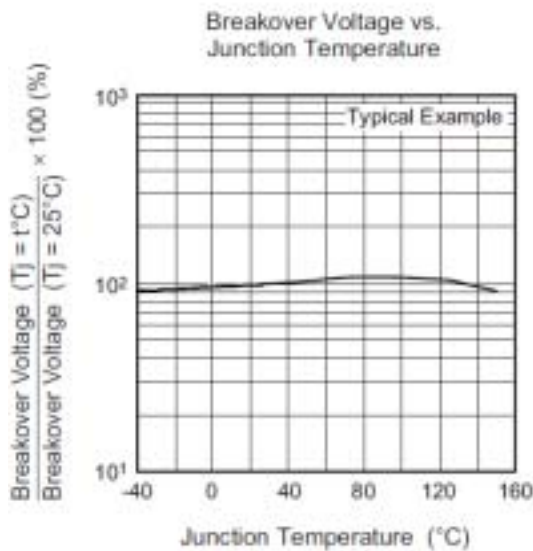
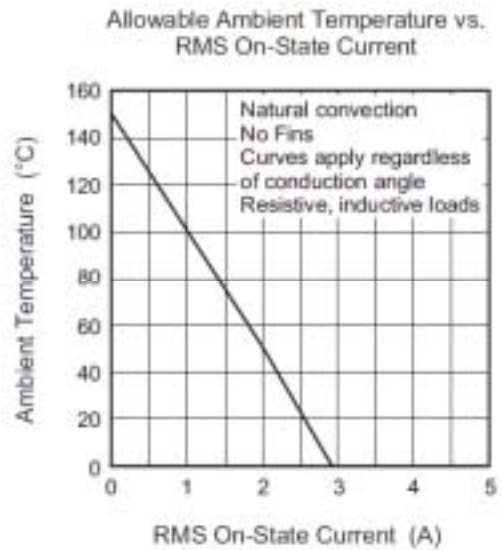
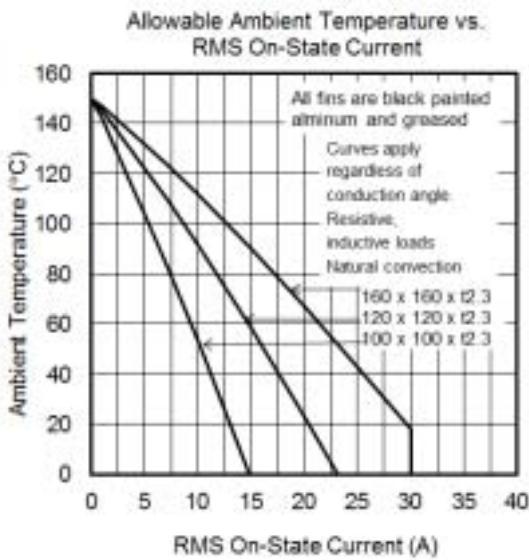
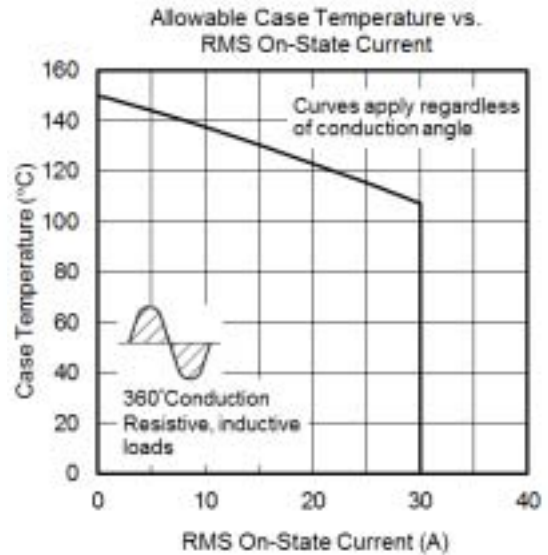
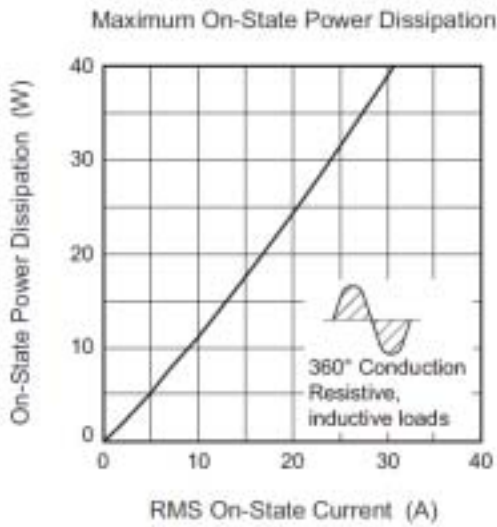
4. The contact thermal resistance $R_{\text{th(c-f)}}$ in case of greasing is 1.0°C/W .

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

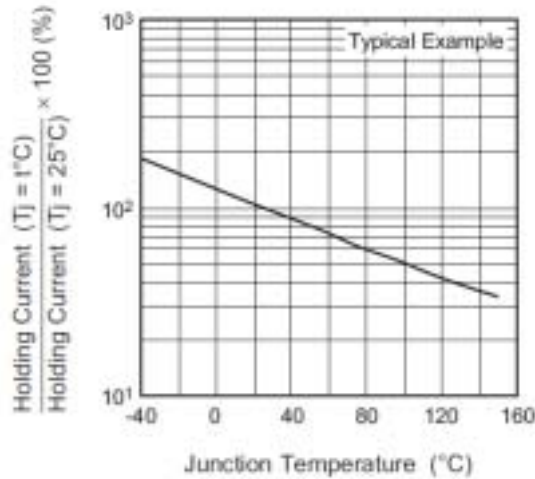
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125/150^\circ\text{C}$ 2. Peak off-state voltage $V_D = 400\text{ V}$ 3. Rate of decay of on-state commutating current $(di/dt)_c = -16\text{ A/ms}$	

Performance Curves

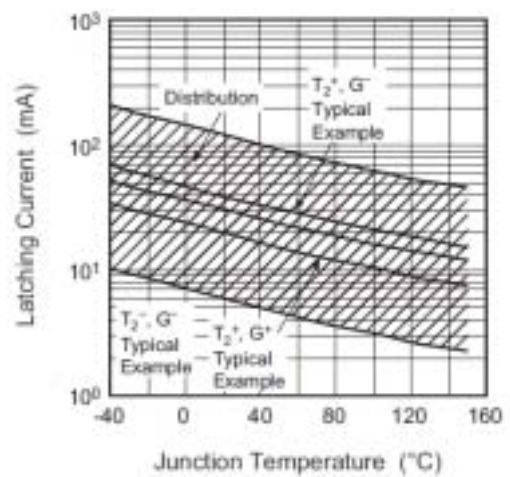




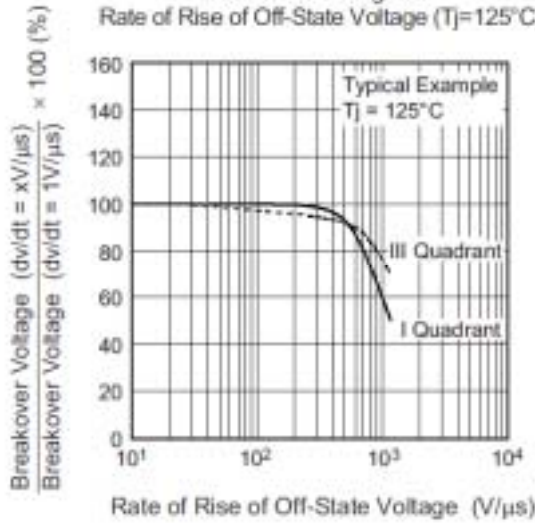
Holding Current vs. Junction Temperature



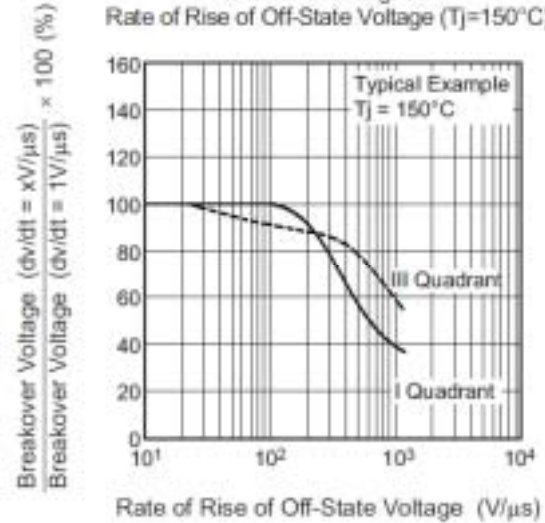
Latching Current vs. Junction Temperature



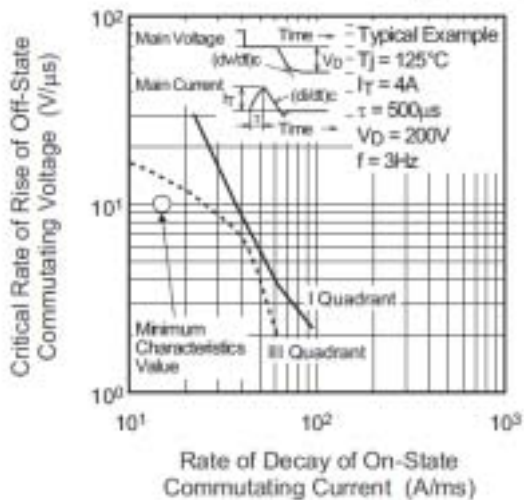
Breakover Voltage vs. Rate of Rise of Off-State Voltage (Tj=125°C)



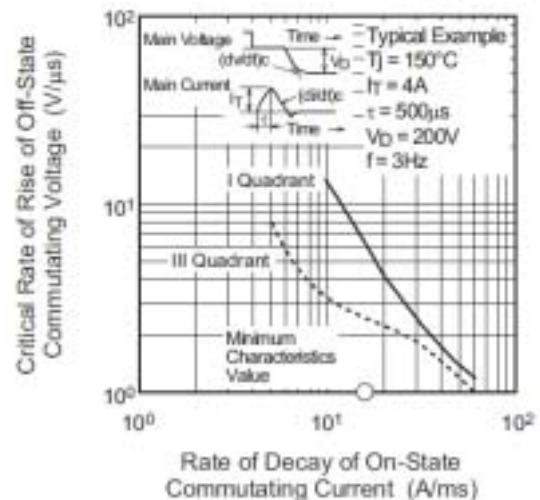
Breakover Voltage vs. Rate of Rise of Off-State Voltage (Tj=150°C)



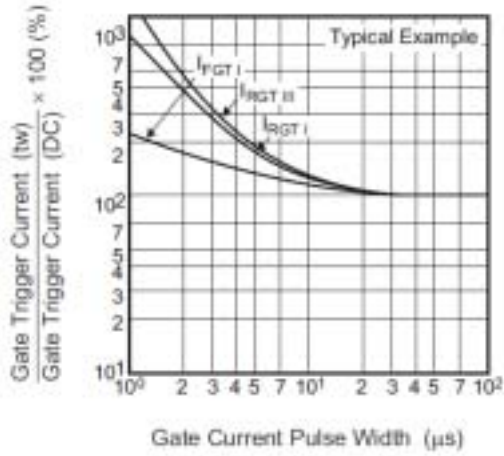
Commutation Characteristics (Tj=125°C)



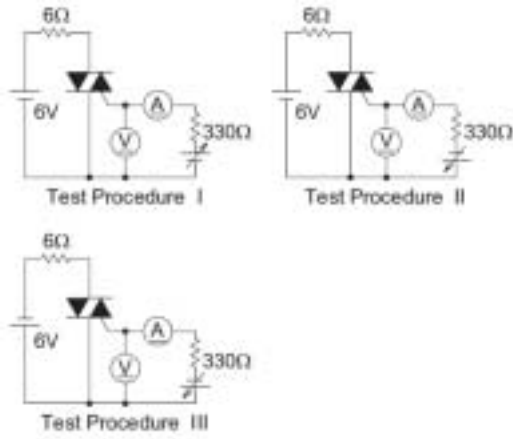
Commutation Characteristics (Tj=150°C)



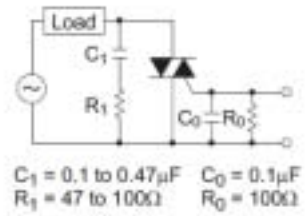
Gate Trigger Current vs. Gate Current Pulse Width



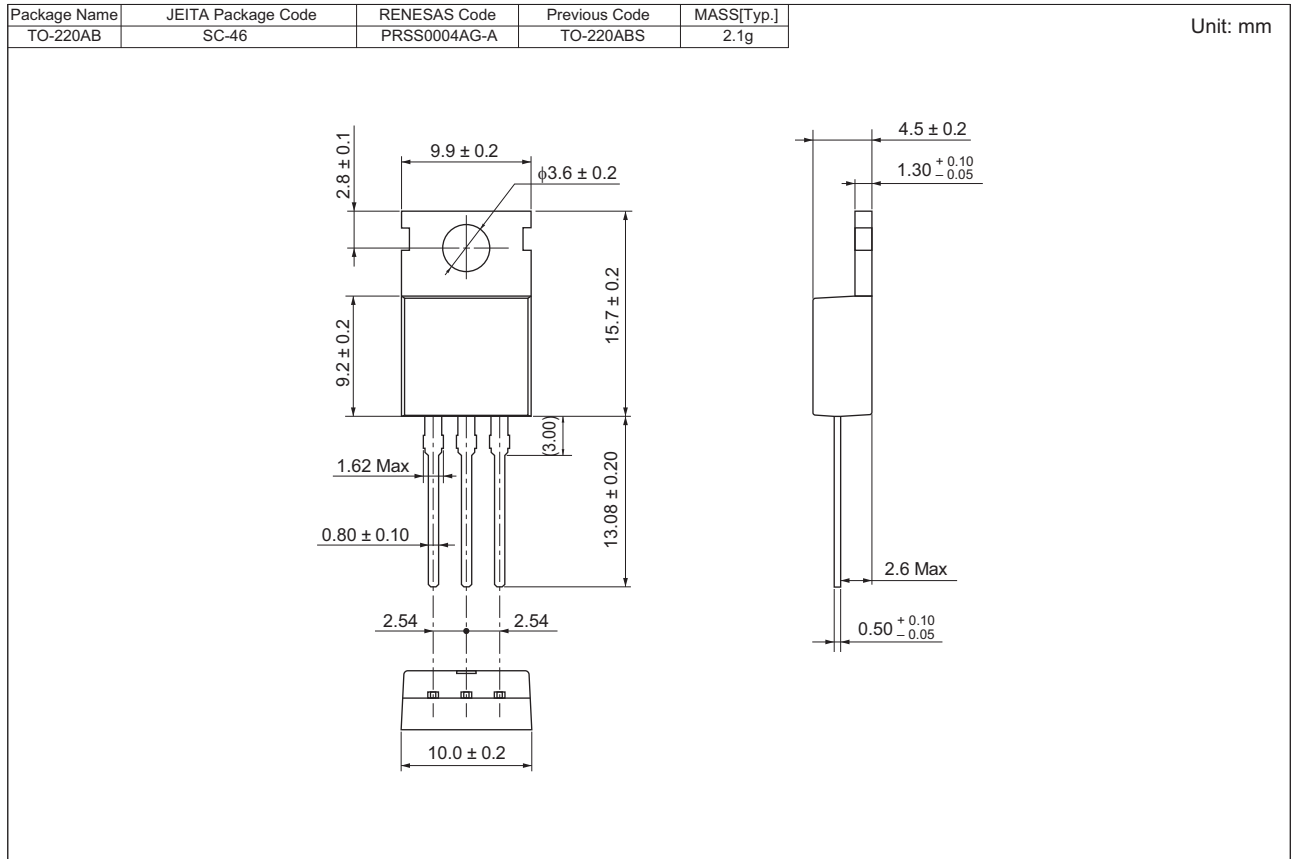
Gate Trigger Characteristics Test Circuits



Recommended Circuit Values Around The Triac



Package Dimensions



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR30CM-8LB#BB0	Tube	50 pcs.	Straight type
BCR30CM-8LB-A8#BB0	Tube	50 pcs.	A8 Lead form

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

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