

BCR5CM-12RA

600V - 5A - Triac

Medium Power Use

R07DS1149EJ0100

Rev.1.00

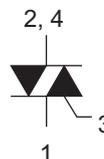
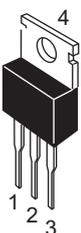
Jan 23, 2014

Features

- $I_{T(RMS)}$: 5 A
- V_{DRM} : 600 V
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$: 15 mA (10 mA)^{Note6}
- Non-Insulated Type
- Planar Passivation Type

Outline

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



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

Applications

Electric rice cooker, electric pot, and controller for other heater

Maximum Ratings

Parameter	Symbol	Voltage class	
		12	Unit
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	600	V
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	720	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	5	A	Commercial frequency, sine full wave 360° conduction, T _c = 103°C ^{Note3}
Surge on-state current	I_{TSM}	50	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I ² t for fusing	I ² t	10.4	A ² s	Value corresponding to 1 cycle of half wave 60Hz, 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 +125	°C	
Storage temperature	T _{stg}	- 40 to +125	°C	
Mass	—	2.1	g	Typical value

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	2.0	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.8	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 7\text{ A}$, Instantaneous measurement
Gate trigger voltage ^{Note2}	I	$V_{FGT\ I}$	—	—	1.5	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	$V_{RGT\ I}$	—	—	1.5	
	III	$V_{RGT\ III}$	—	—	1.5	
Gate trigger current ^{Note2}	I	$I_{FGT\ I}$	—	—	15 ^{Note5}	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	$I_{RGT\ I}$	—	—	15 ^{Note5}	
	III	$I_{RGT\ III}$	—	—	15 ^{Note5}	
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$ $V_D = 1/2\ V_{DRM}$
Thermal resistance	$R_{th(j-c)}$	—	—	3.0	$^\circ\text{C/W}$	Junction to case ^{Note3 Note4}

Notes: 1. Gate open.

2. Measurement using the gate trigger characteristics measurement circuit.

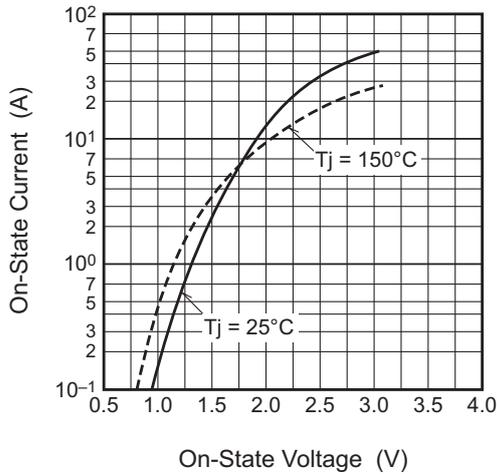
3. Case temperature is measured at the T_2 tab 1.5 mm away from the molded case.

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

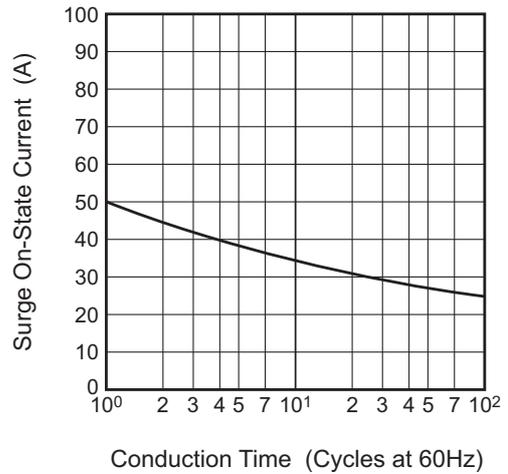
5. High sensitivity ($I_{GT} \leq 10\text{ mA}$) is also available. (I_{GT} item: 1)

Performance Curves

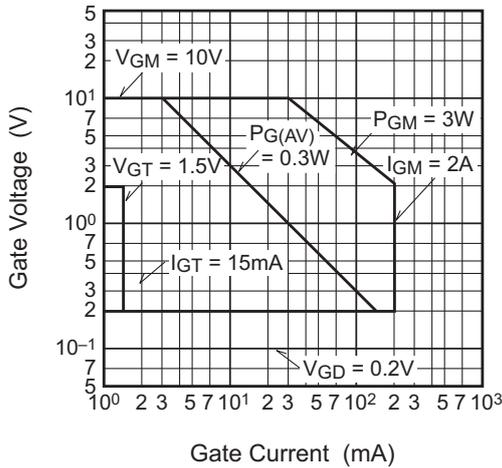
Maximum On-State Characteristics



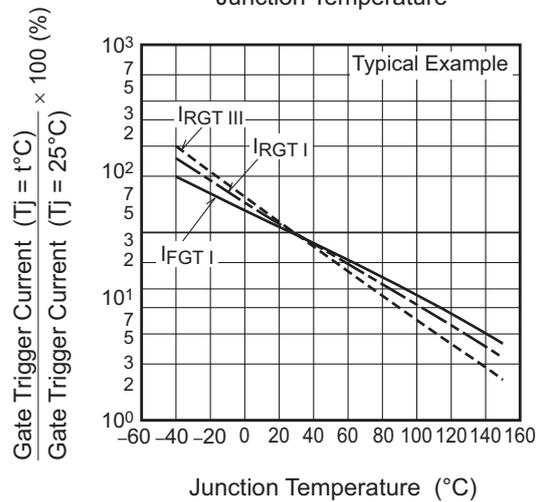
Rated Surge On-State Current



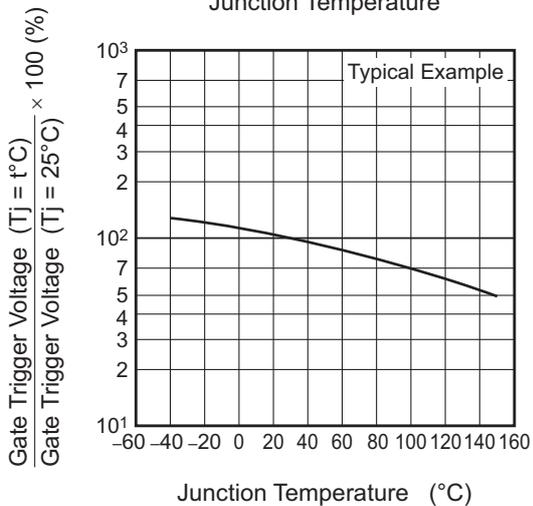
Gate Characteristics (I, II and III)



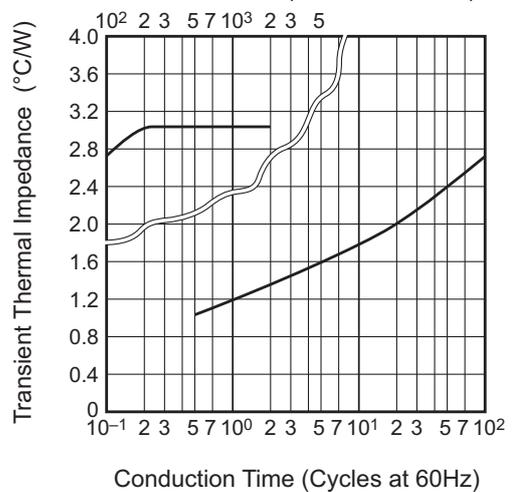
Gate Trigger Current vs. Junction Temperature

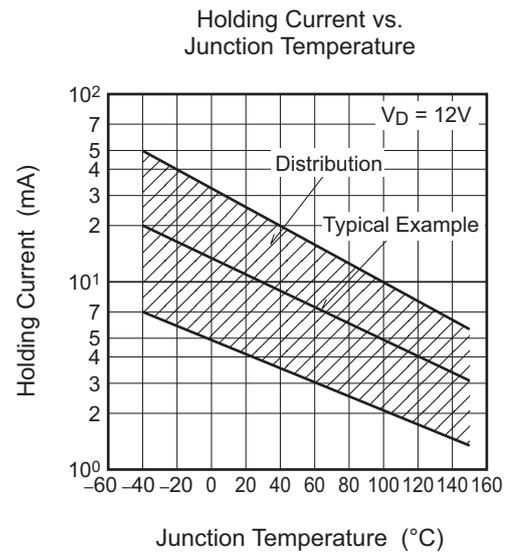
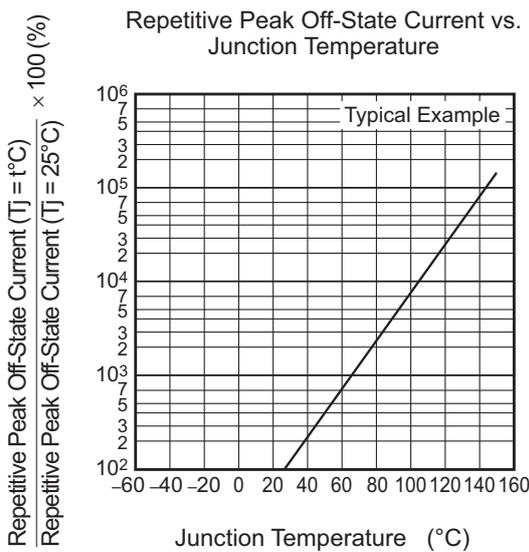
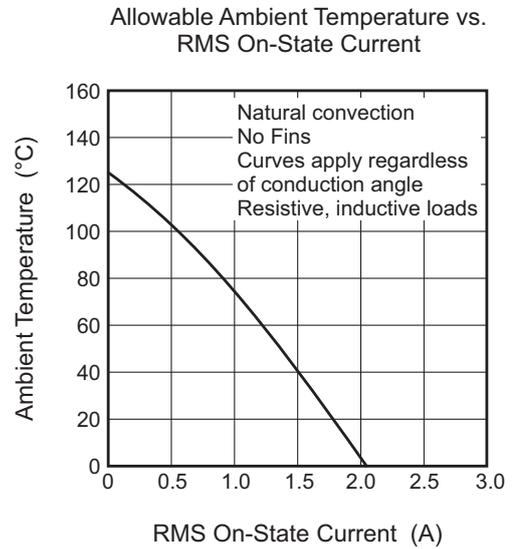
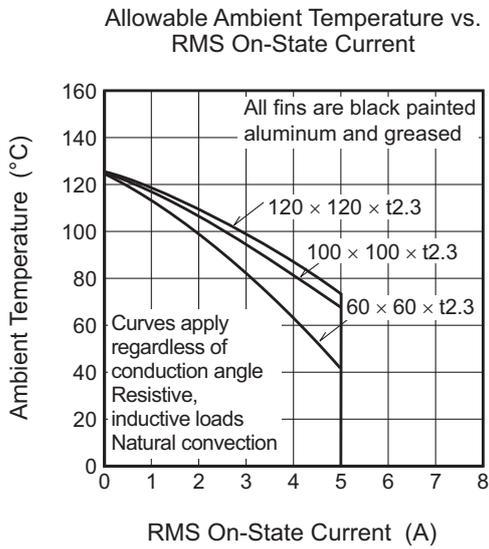
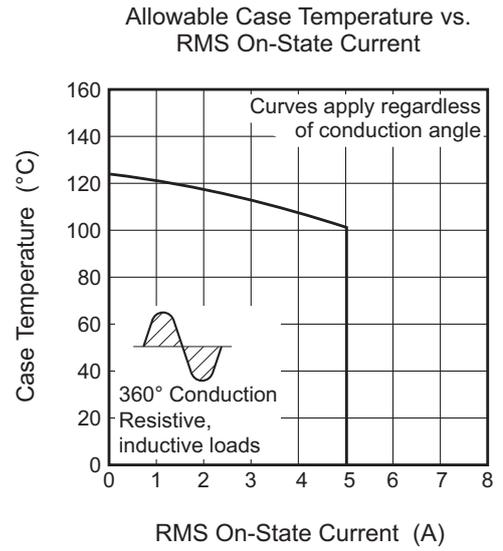
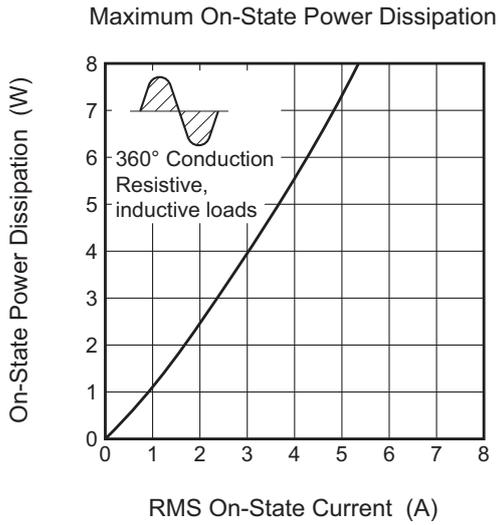


Gate Trigger Voltage vs. Junction Temperature

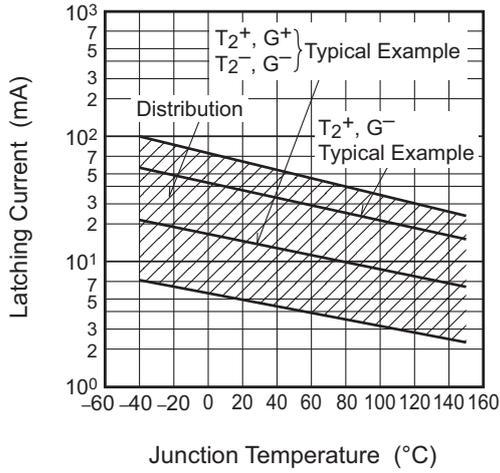


Maximum Transient Thermal Impedance Characteristics (Junction to case)

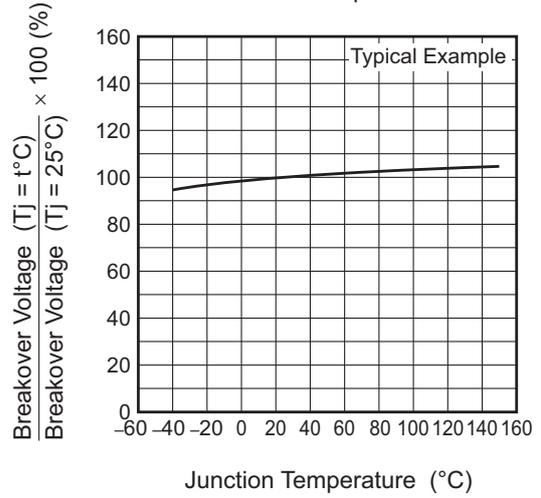




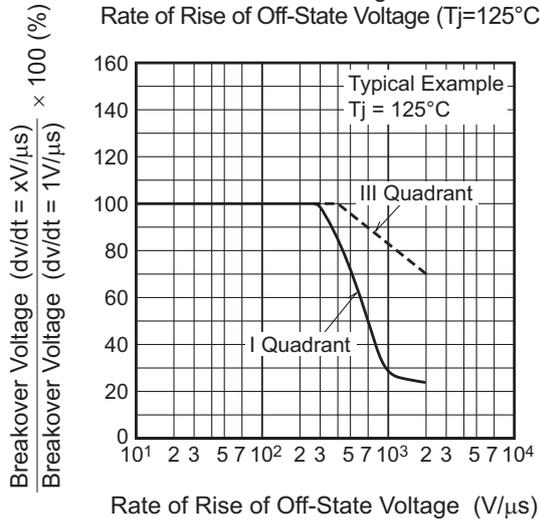
Latching Current vs. Junction Temperature



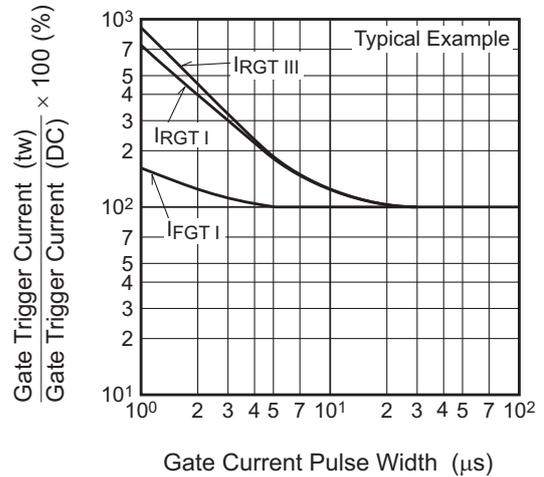
Breakover Voltage vs. Junction Temperature



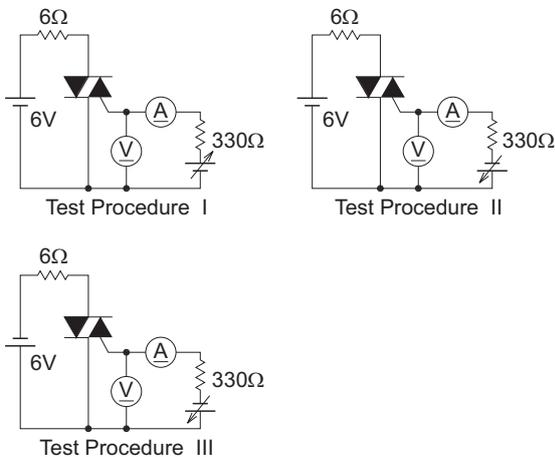
Breakover Voltage vs. Rate of Rise of Off-State Voltage ($T_j=125^\circ\text{C}$)



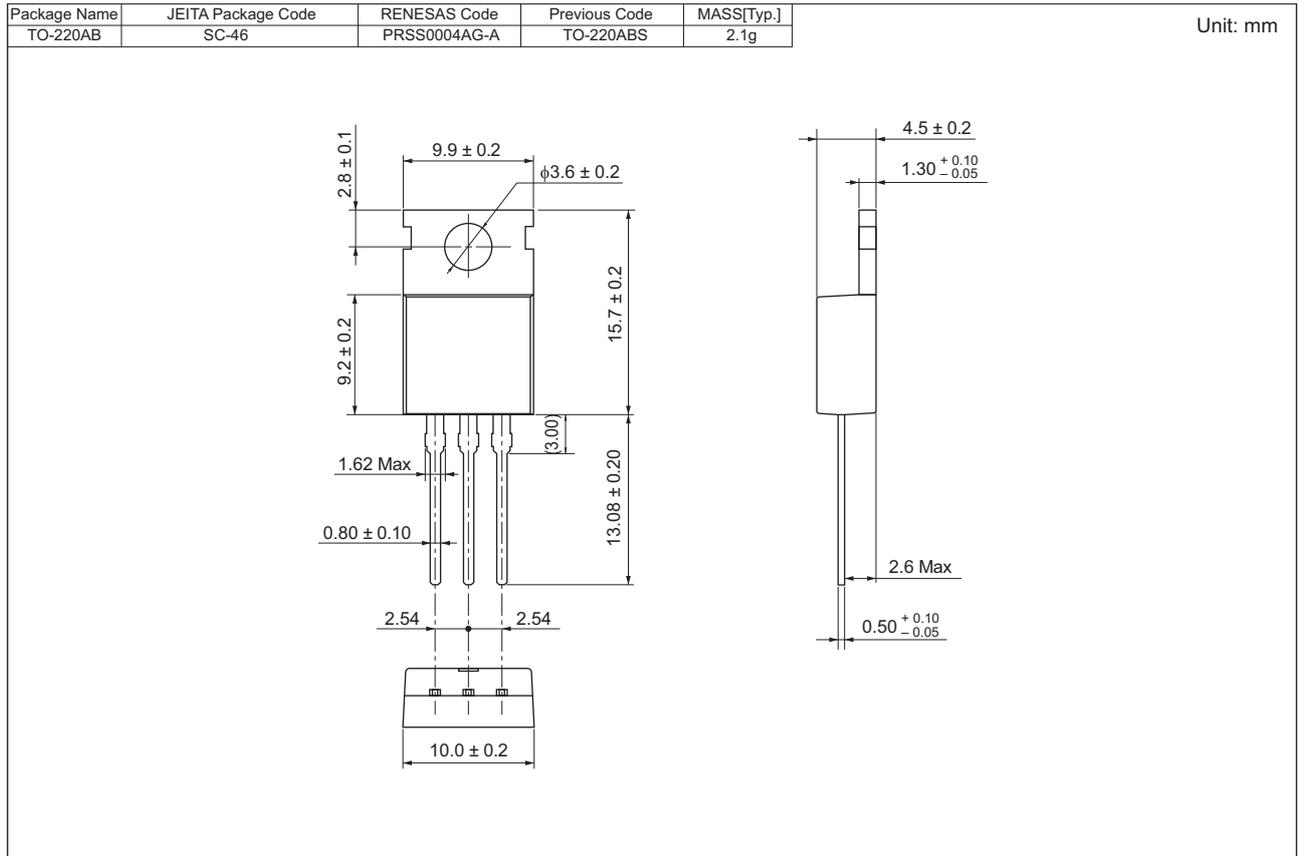
Gate Trigger Current vs. Gate Current Pulse Width



Gate Trigger Characteristics Test Circuits



Package Dimensions



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR5CM-12RA#BB0	Tube	50 pcs.	Straight type

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

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