BCR5CM-12RA

600V - 5A - Triac

Medium Power Use

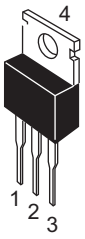
R07DS1149EJ0100
Rev.1.00
Jan 23, 2014

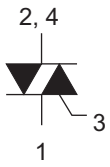
Features

- $I_{T(RMS)}$: 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. T_1 Terminal
2. T_2 Terminal
3. Gate Terminal
4. T_2 Terminal

Applications

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

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		12	
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, Tc = 103°C[Note3]
Surge on-state current	I_{TSM}	50	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	10.4	A^2s	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	Tj	– 40 to +125	°C	
Storage temperature	Tstg	– 40 to +125	°C	
Mass	—	2.1	g	Typical value

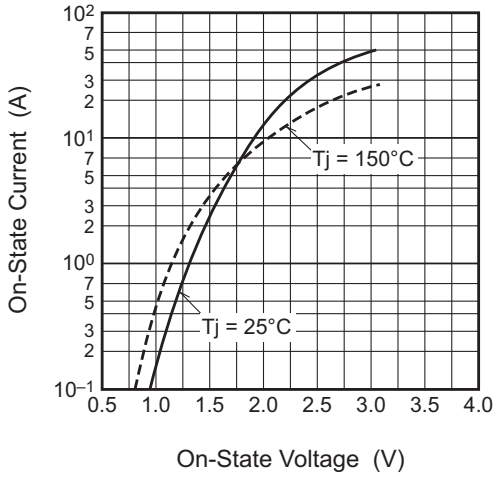
Electrical Characteristics

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

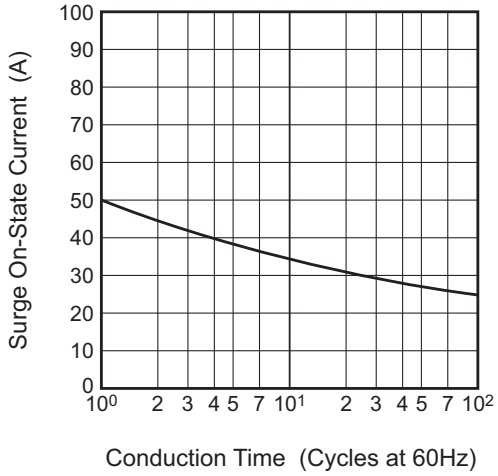
Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. Case temperature is measured at the T_2 tab 1.5 mm away from the molded case.
4. The contact thermal resistance $R_{th\ (c\text{-}f)}$ in case of greasing is 1.0°C/W.
5. High sensitivity ($I_{GT} \leq 10$ mA) is also available. (I_{GT} item: 1)

Performance Curves

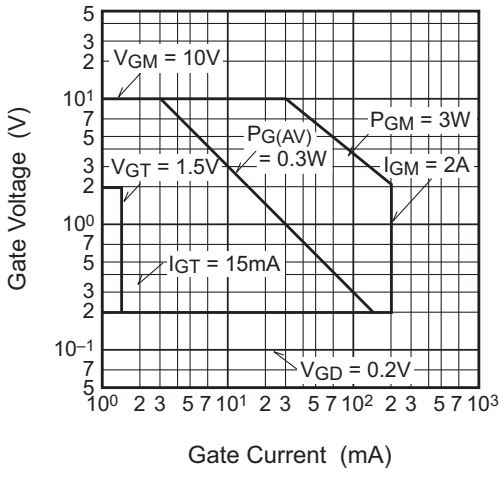
Maximum On-State Characteristics



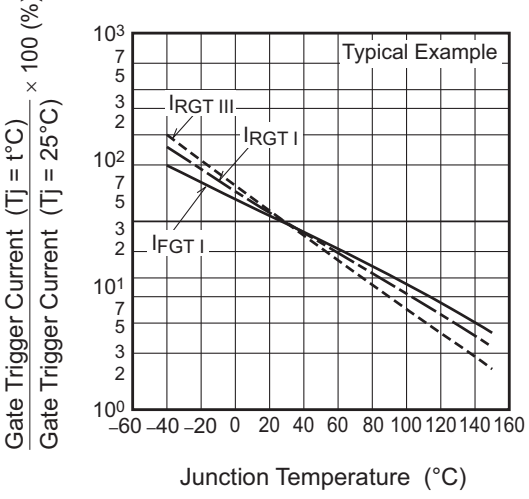
Rated Surge On-State Current



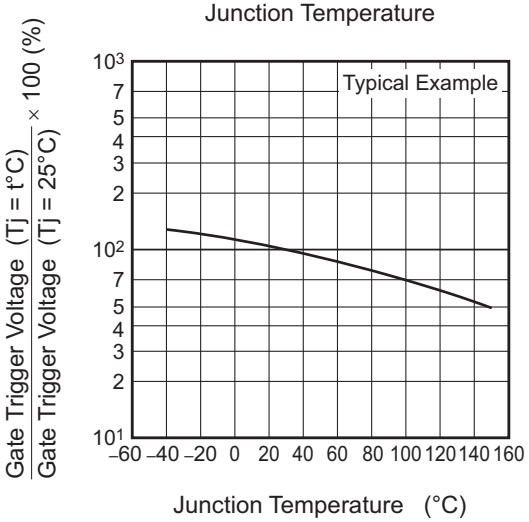
Gate Characteristics (I, II and III)



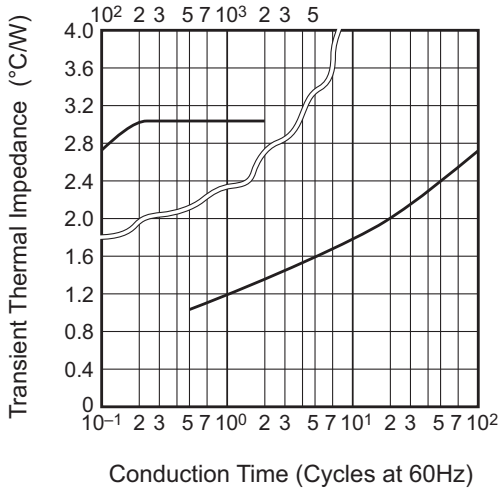
Gate Trigger Current vs. Junction Temperature



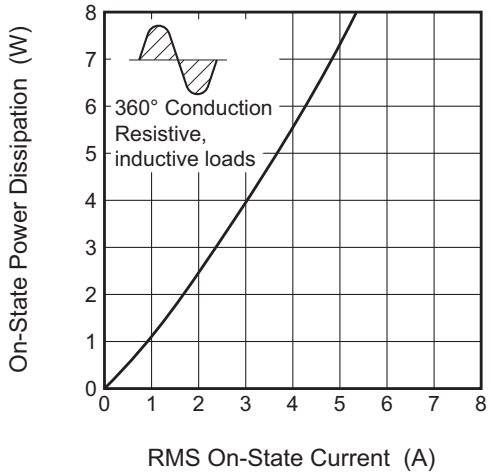
Gate Trigger Voltage vs. Junction Temperature



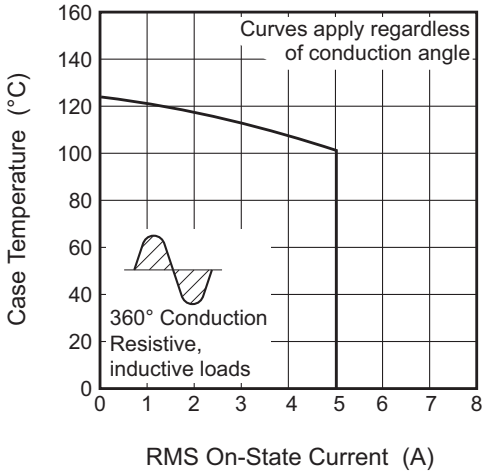
Maximum Transient Thermal Impedance Characteristics (Junction to case)



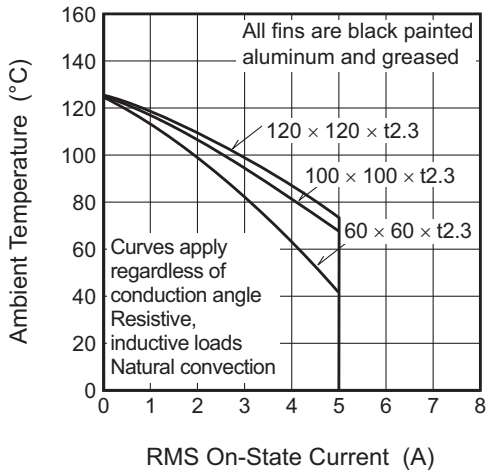
Maximum On-State Power Dissipation



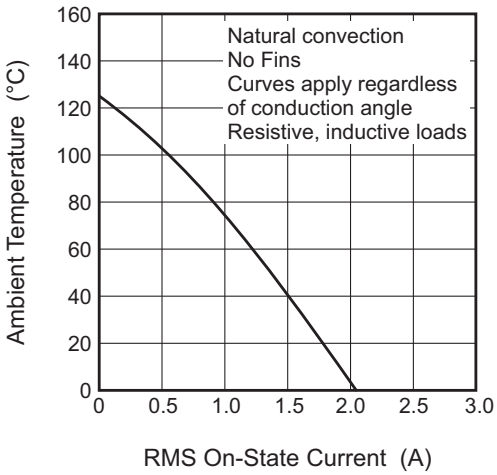
Allowable Case Temperature vs.
RMS On-State Current



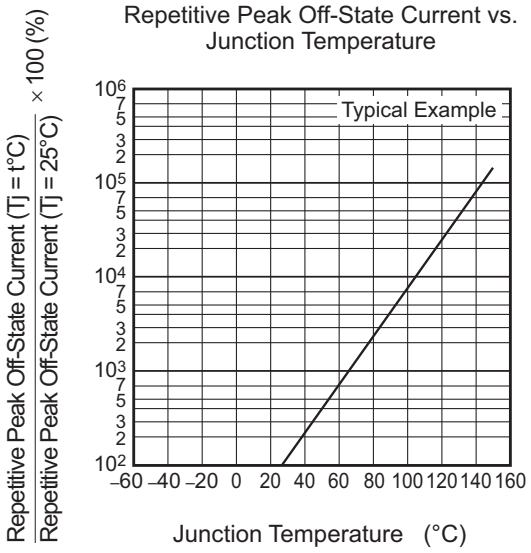
Allowable Ambient Temperature vs.
RMS On-State Current



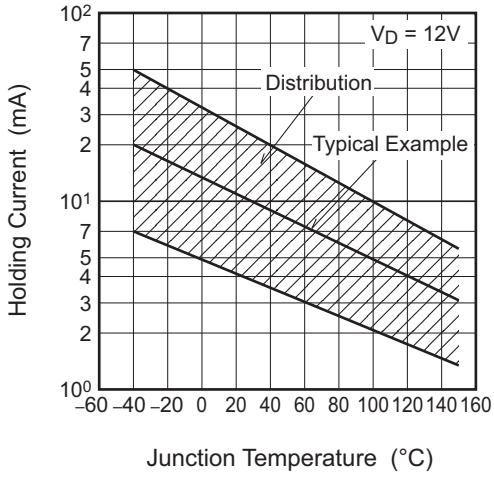
Allowable Ambient Temperature vs.
RMS On-State Current



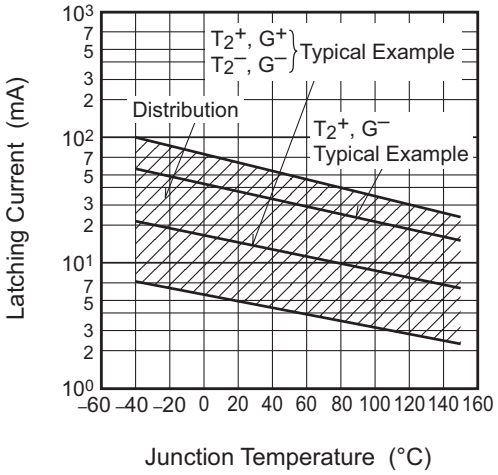
Repetitive Peak Off-State Current vs.
Junction Temperature



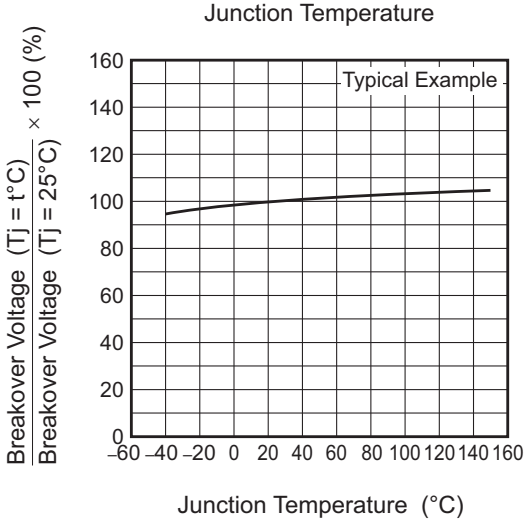
Holding Current vs.
Junction Temperature



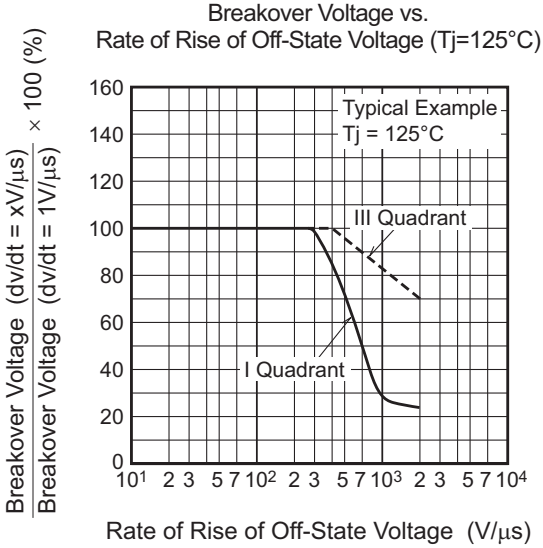
Latching Current vs.
Junction Temperature



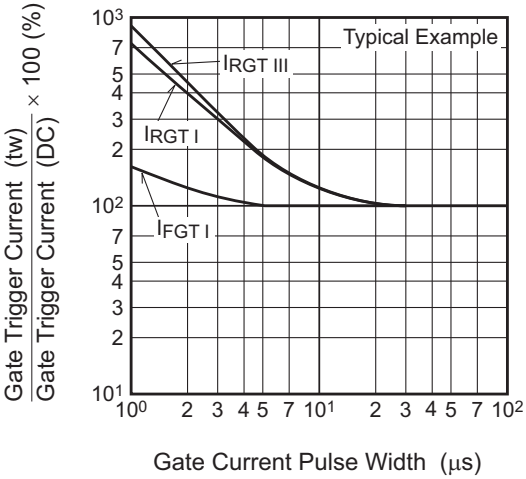
Breakover Voltage vs.
Junction Temperature



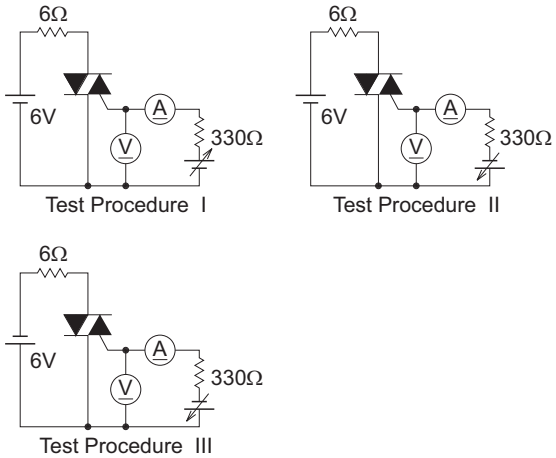
Breakover Voltage vs.
Rate of Rise of Off-State Voltage (Tj=125°C)



Gate Trigger Current vs.
Gate Current Pulse Width



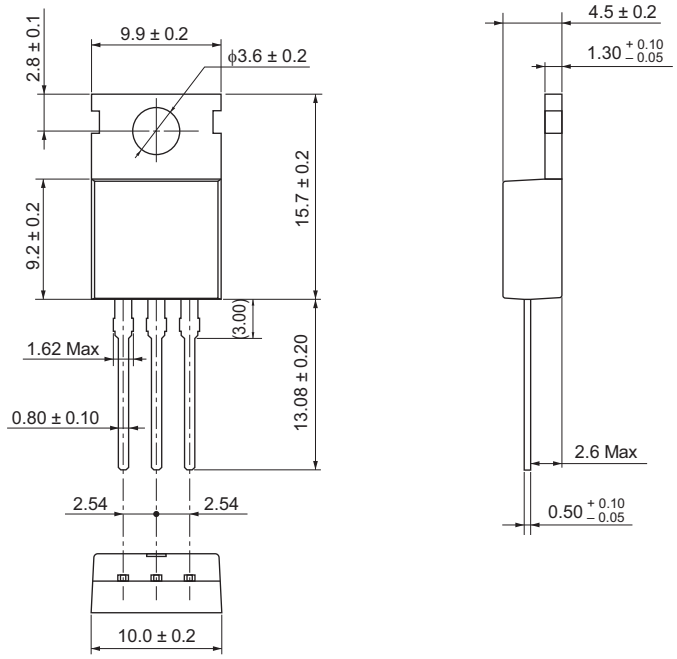
Gate Trigger Characteristics Test Circuits



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220AB	SC-46	PRSS0004AG-A	TO-220ABS	2.1g

Unit: mm



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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