BCR16CM-12LC

600V - 16A - Triac

Medium Power Use

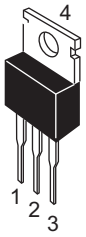
R07DS1031EJ0200
(Previous: REJ03G1804-0100)
Rev.2.00
Feb 25, 2013

Features

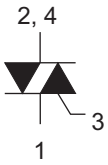
- $I_{T\ (RMS)}$: 16 A
- V_{DRM} : 600 V
- $I_{FGT\ I}$, $I_{RGT\ I}$, $I_{RGT\ III}$:50 mA
- Non-Insulated Type
- Planar Passivation Type

Outline

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



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



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

Applications

Switching mode power supply, washing machine, motor control, heater control, and other general purpose control applications.

Maximum Ratings

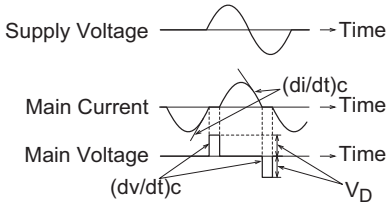
Parameter	Symbol	Voltage class	Unit
		12	
Repetitive peak off-state voltage[Note1]	V_{DRM}	600	V
Non-repetitive peak off-state voltage[Note1]	V_{DSM}	700	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T\ (RMS)}$	16	A	Commercial frequency, sine full wave 360°conduction, Tc = 110 °C
Surge on-state current	I_{TSM}	96	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	38	A^2s	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	Tj	–40 to +150	°C	
Storage temperature	Tstg	–40 to +150	°C	
Mass	—	2.1	g	Typical value

Electrical Characteristics

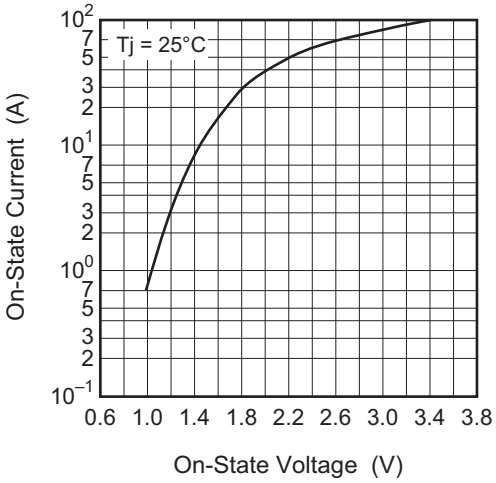
Parameter		Symbol	Rated value			Unit	Test conditions
			Min.	Typ.	Max.		
Repetitive peak off-state current		I_{DRM}	—	—	2.0	mA	Tj = 125°C, V_{DRM} applied
On-state voltage		V_{TM}	—	—	1.75	V	Tc = 25°C, I_{TM} = 25A, instantaneous measurement
Gate trigger voltage[Note2]	I	V_{FGTI}	—	—	1.5	V	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	V_{RGTI}	—	—	1.5	V	
	III	V_{RGTIII}	—	—	1.5	V	
Gate trigger curent[Note2]	I	I_{FGTI}	—	—	50	mA	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	I_{RGTI}	—	—	50	mA	
	III	I_{RGTIII}	—	—	50	mA	
Gate non-trigger voltage		V_{GD}	0.2	—	—	V	Tj = 125°C, V_D = 1/2 V_{DRM}
Thermal resistance		$R_{th\ (j-c)}$	—	—	1.8	°C/W	Junction to case[Note3, Note 4]
Critical-rate of rise of off-state commutation voltage[Note5]		(dv/dt)c	10	—	—	V/μs	Tj = 125°C

Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. Case temperature I measured at the T_2 tab 1.5mm away from the molded case.
4. The contact thermal resistance Rth (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.

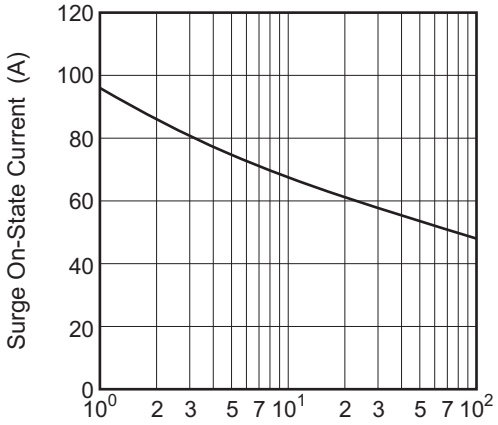
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature Tj = 125°C 2. Rate of decay of on-state commutating current (di/dt)c = –8 A/ms 3. Peak off-state voltage V_D = 400 V	

Performance Curves

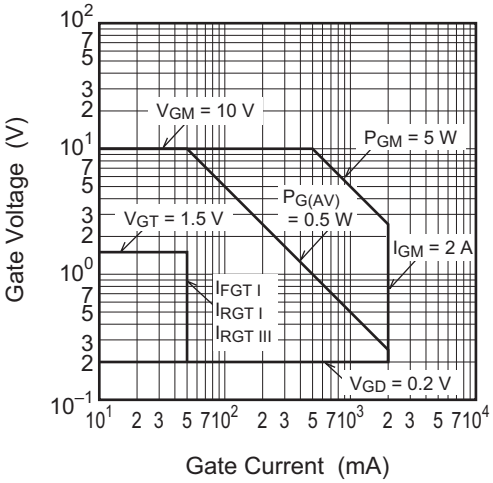
Maximum On-State Characteristics



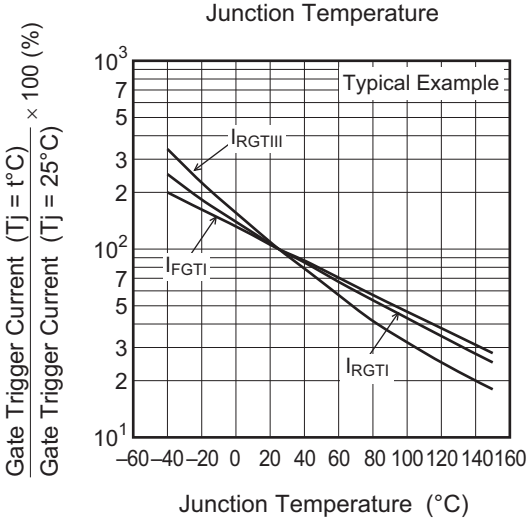
Rated Surge On-State Current



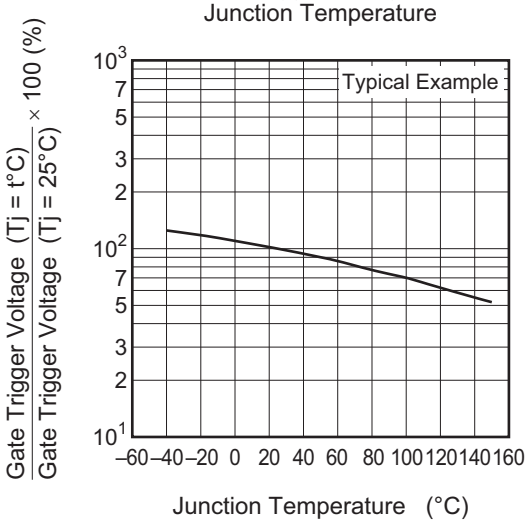
Gate Characteristics (I, II and III)



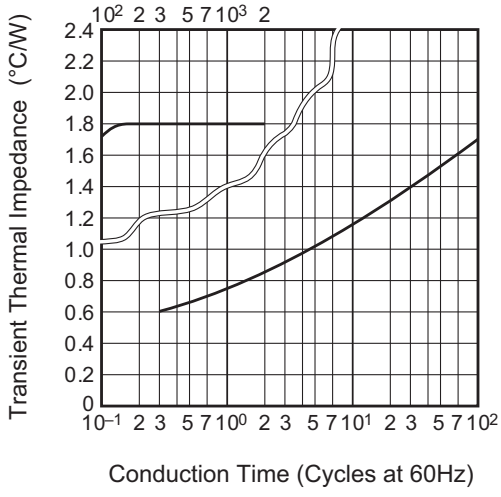
Gate Trigger Current vs. Junction Temperature



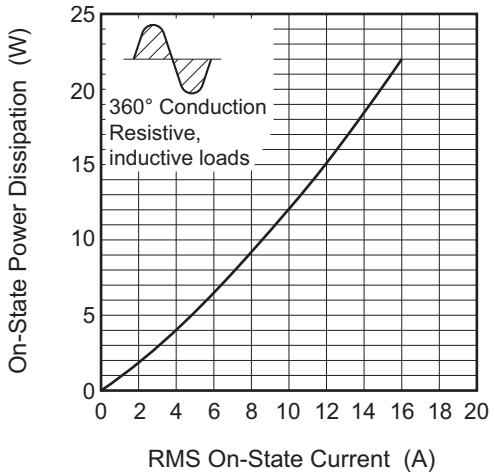
Gate Trigger Voltage vs. Junction Temperature



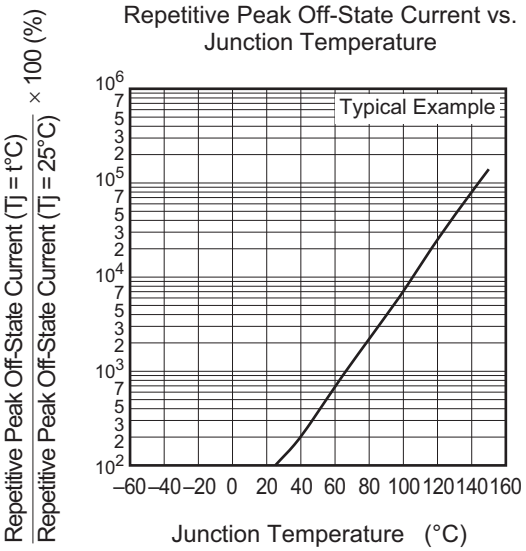
Maximum Transient Thermal Impedance Characteristics (Junction to case)



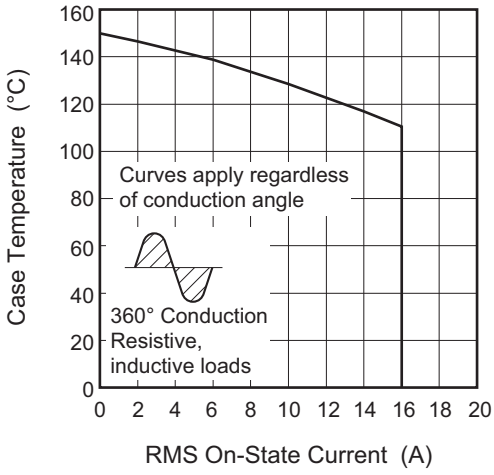
Maximum On-State Power Dissipation



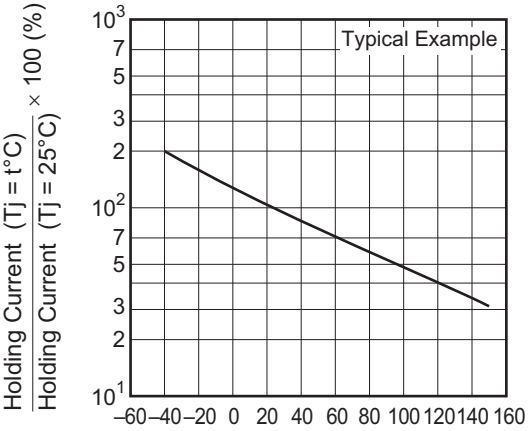
Repetitive Peak Off-State Current vs.
Junction Temperature



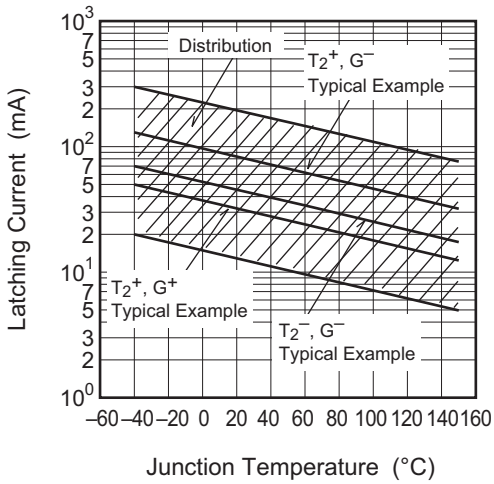
Allowable Case Temperature vs.
RMS On-State Current



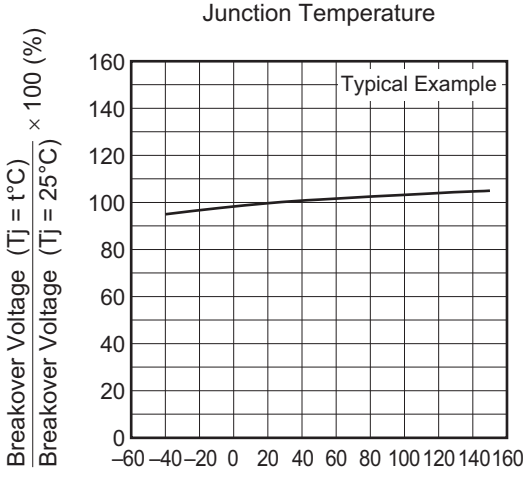
Holding Current vs.
Junction Temperature



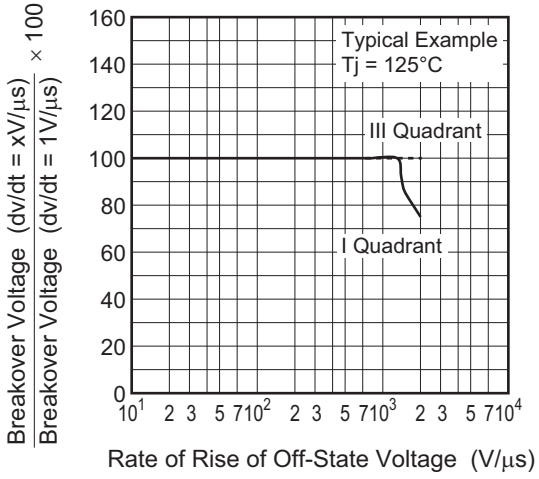
Latching Current vs.
Junction Temperature



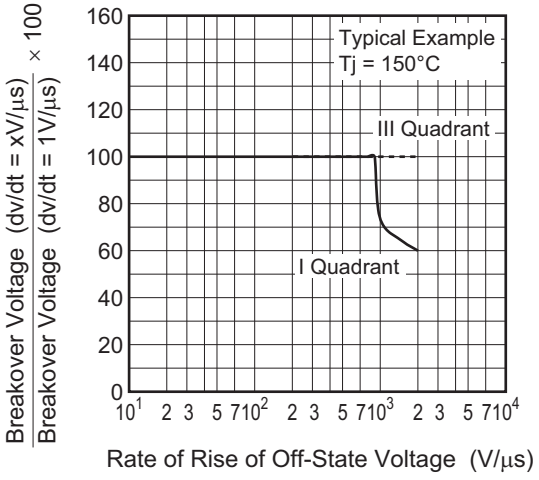
Breakover Voltage vs.
Junction Temperature



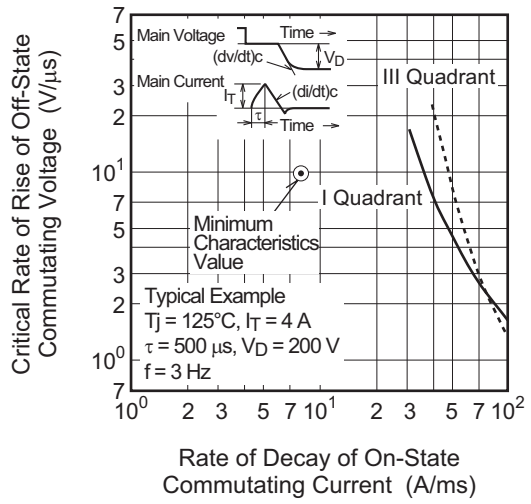
Breakover Voltage vs. Rate of Rise of Off-State Voltage (Tj = 125°C)



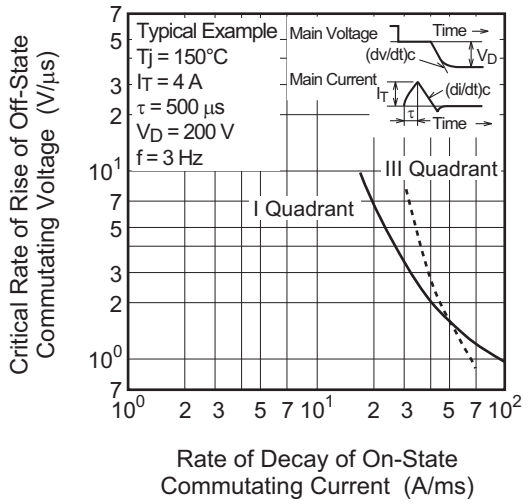
Breakover Voltage vs. Rate of Rise of Off-State Voltage (Tj = 150°C)



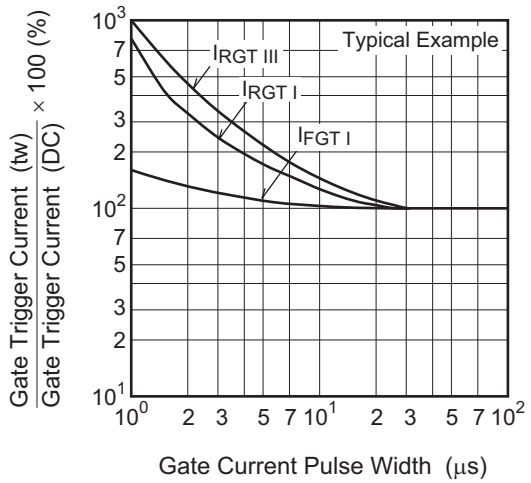
Commutation Characteristics (Tj = 125°C)



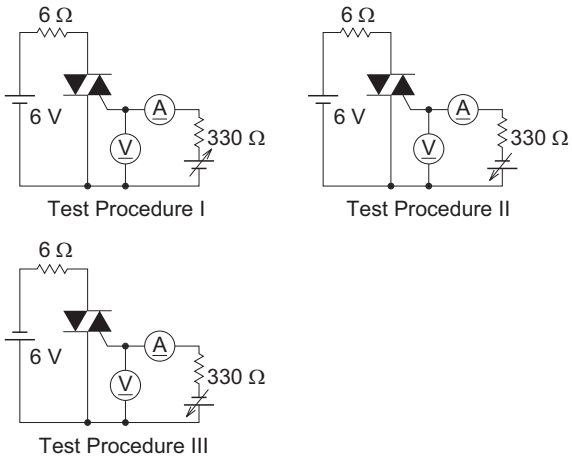
Commutation Characteristics (Tj = 150°C)



Gate Trigger Current vs. Gate Current Pulse Width



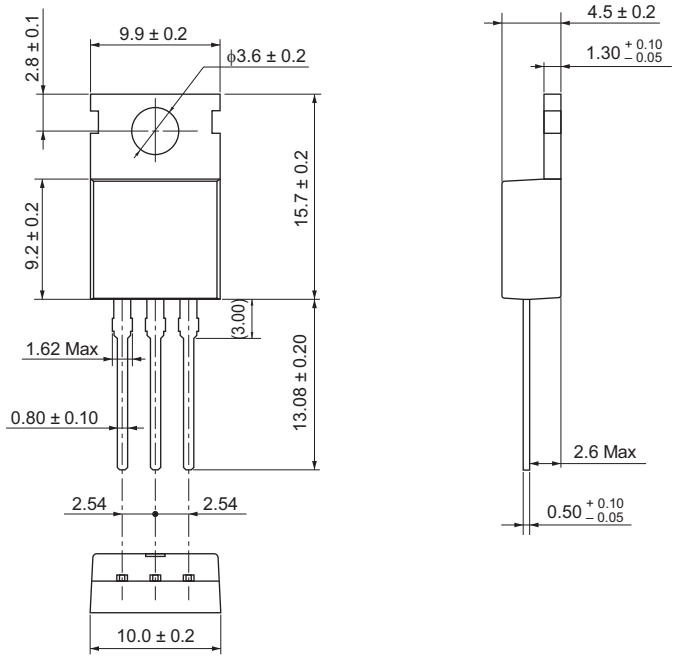
Gate Trigger Characteristics Test Circuits



Package Dimensions

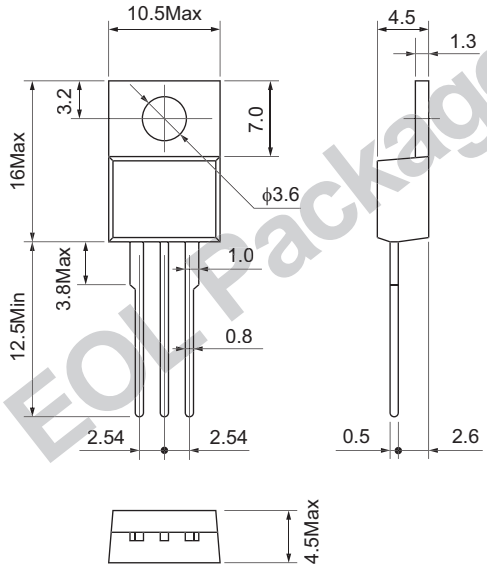
Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220AB	SC-46	PRSS0004AG-A	TO-220ABS	2.1g

Unit: mm



Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220	SC-46	PRSS0004AA-A	—	2.0g

Unit: mm



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR16CM-12LC#BB0	Tube	50 pcs.	Straight type
BCR16CM-12LCA8#BB0	Tube	50 pcs.	A8 Lead form

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

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