

BCR08DS-14A

700V-0.8A-Triac

R07DS0258EJ0200

Low Power Use

Rev.2.00

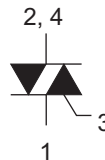
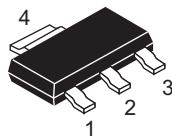
Aug 07, 2013

Features

- $I_{T(RMS)}$: 0.8 A
- V_{DRM} : 700 V
- I_{FGT} , I_{RGT} , I_{RGTIII} : 5 mA or 10mA
- IVmode trigger is available (#B12)
- Planar Passivation Type
- Surface Mounted Type
- Completed Pb Free

Outline

RENESAS Package code: PRSP0004ZA-A
(Package name: SOT-223)



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

Applications

Washing machine, electric fan, air cleaner, other general purpose control applications

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		14	
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	700	V
Non- repetitive peak off-state voltage ^{Note1}	V_{DSM}	840	V

Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	0.8	A	Commercial frequency, sine full wave 360° conduction, $T_c = 96^{\circ}\text{C}$ ^{Note3}
Surge on-state current	I_{TSM}	8	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	0.26	A ² s	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	P_{GM}	1	W	
Average gate power dissipation	$P_{G(AV)}$	0.1	W	
Peak gate voltage	V_{GM}	6	V	
Peak gate current	I_{GM}	0.5	A	
Junction temperature	T_j	- 40 to +125	°C	
Storage temperature	T_{stg}	- 40 to +125	°C	
Mass	—	0.12	g	Typical value

Electrical Characteristics

Parameter	Symbol	BCR08DS-14A#B10			BCR08DS-14A#B12			Unit	Test conditions	
		Min.	Typ.	Max.	Min.	Typ.	Max.			
Repetitive peak off-state current	I_{DRM}	—	—	1.0	—	—	1.0	mA	$T_j = 125^\circ\text{C}$ V_{DRM} applied	
On-state voltage	V_{TM}	—	—	2.0	—	—	2.0	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 1.2$ A instantaneous measurement	
Gate trigger voltage ^{Note2}	I	V_{FGTI}	—	—	2.0	—	—	2.0	V	$T_j = 25^\circ\text{C}$, $V_D = 6$ V $R_L = 6 \Omega$, $R_G = 330 \Omega$
	II	V_{RGTI}	—	—	2.0	—	—	2.0	V	
	III	V_{RGTIII}	—	—	2.0	—	—	2.0	V	
	IV	V_{FGTIII}	—	—	—	—	—	2.0	V	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	5	—	—	10	mA	$T_j = 25^\circ\text{C}$, $V_D = 6$ V $R_L = 6 \Omega$, $R_G = 330 \Omega$
	II	I_{RGTI}	—	—	5	—	—	10	mA	
	III	I_{RGTIII}	—	—	5	—	—	10	mA	
	IV	I_{FGTIII}	—	—	—	—	—	10	mA	
Gate non-trigger voltage	V_{GD}	0.2	—	—	0.2	—	—	V	$T_j = 125^\circ\text{C}$ $V_D = 1/2 V_{DRM}$	
Thermal resistance	$R_{th(j-c)}$	—	—	25	—	—	25	$^\circ\text{C/W}$	Junction to case ^{Note3}	
Critical-rate of rise of off-state commutating voltage ^{Note4}	$(dv/dt)_c$	0.5	—	—	0.5	—	—	V/ μs	$T_j = 125^\circ\text{C}$	
Critical-rate of rise of off-state voltage ^{Note5}	dv/dt	200	—	—	200	—	—	V/ μs	$T_j = 125^\circ\text{C}$	

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

3. Case temperature is measured on the T_2 tab.

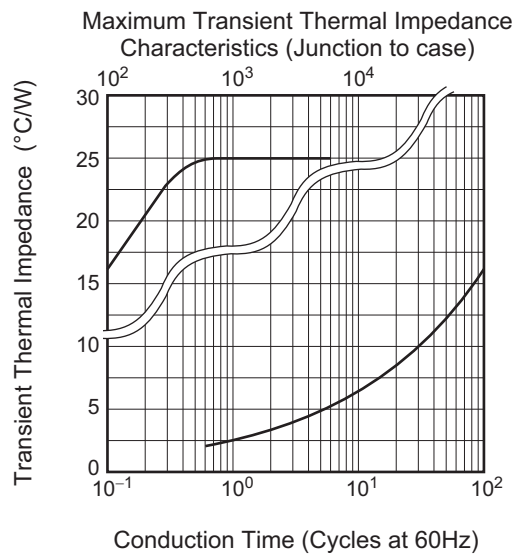
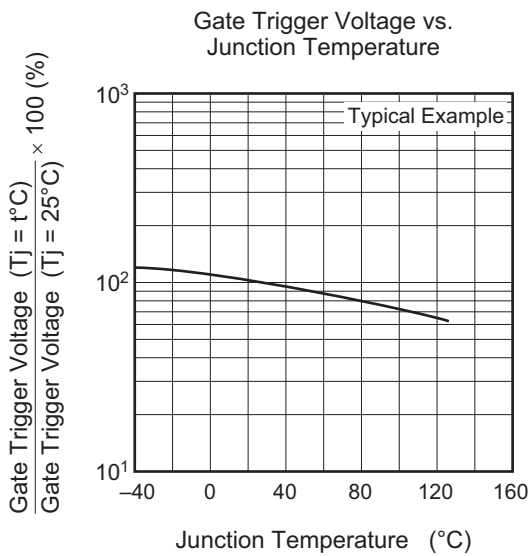
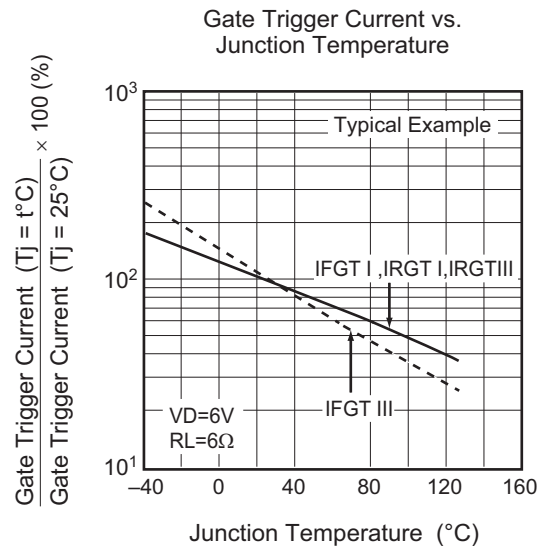
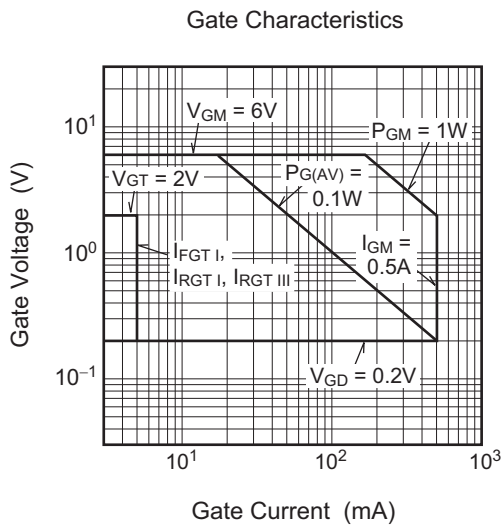
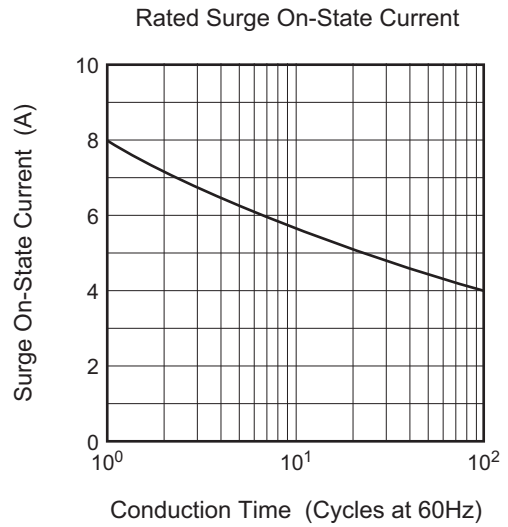
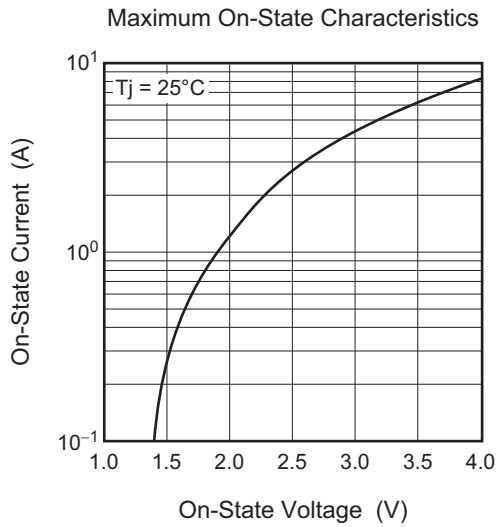
4. Test conditions of the critical-rate of rise of off-state commutating voltage are shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -0.4$ A/ms 3. Peak off-state voltage $V_D = 400$ V	

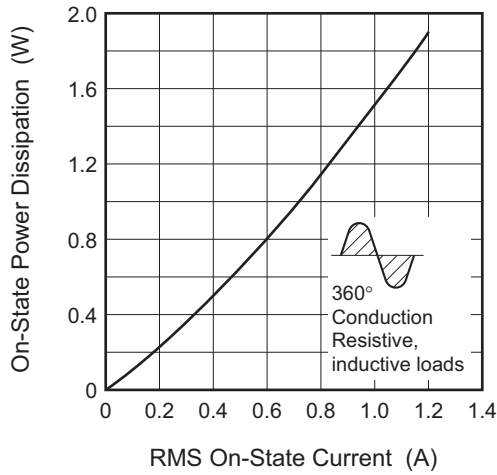
5. Test conditions of the critical-rate of rise of off-state voltage are shown in the table below.

Test conditions	Off-state voltage waveforms
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Off-state voltage waveform Linear waveform 3. Peak off-state voltage $V_D = 200$ V 4. Gate open	

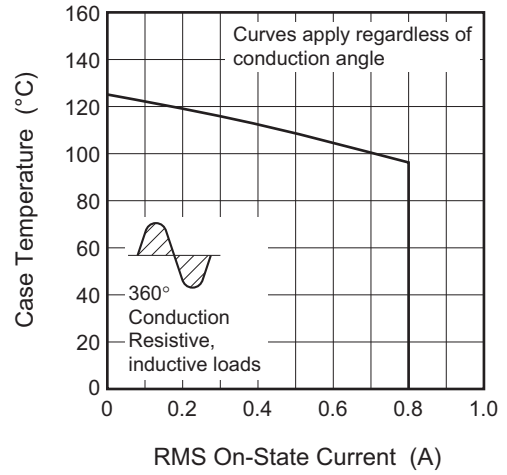
Performance Curves



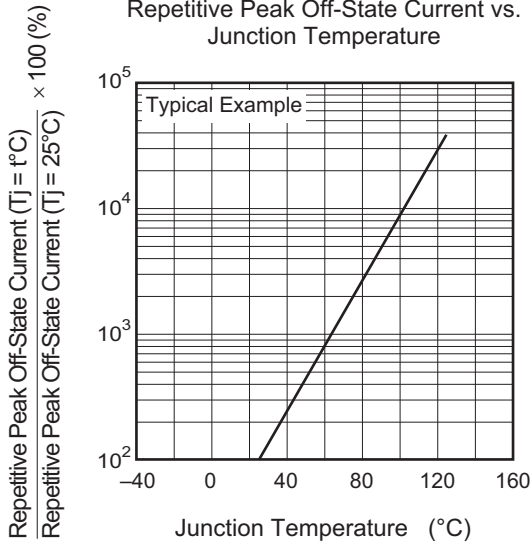
Maximum On-State Power Dissipation



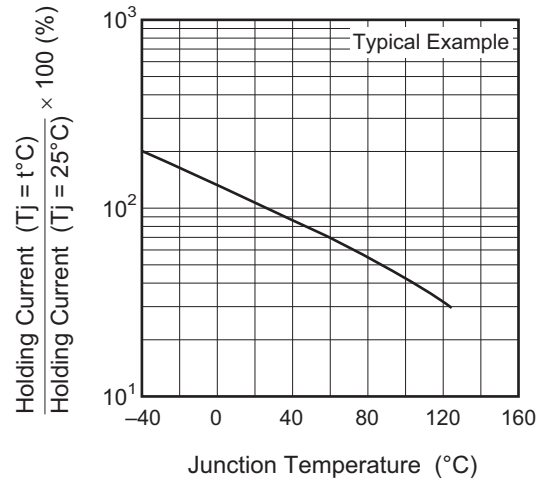
Allowable Case Temperature vs. RMS On-State Current



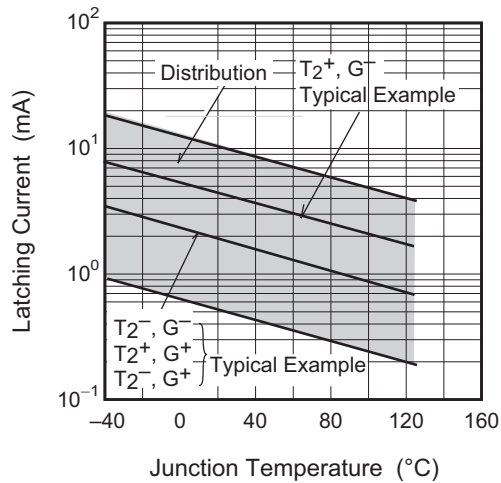
Repetitive Peak Off-State Current vs. Junction Temperature



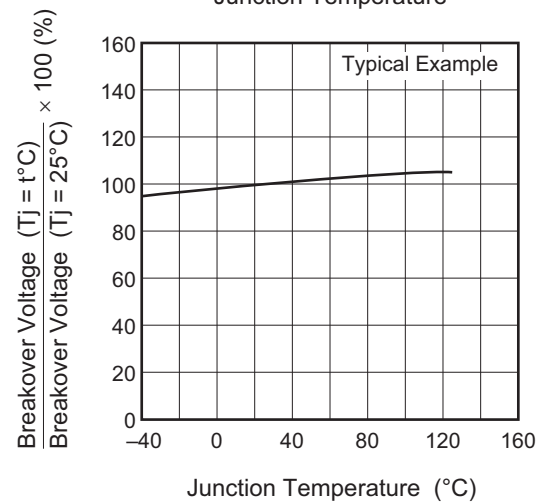
Holding Current vs. Junction Temperature



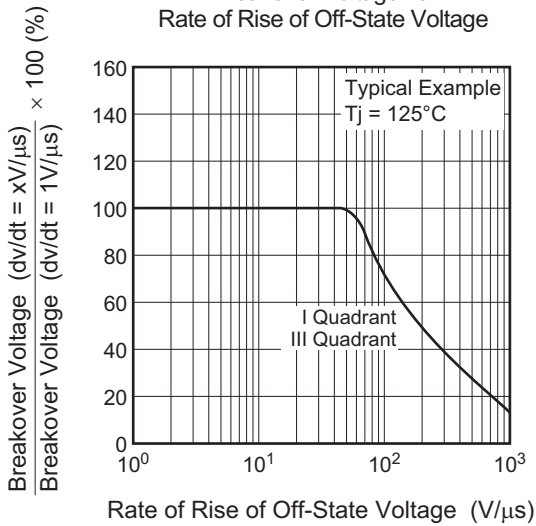
Latching Current vs. Junction Temperature



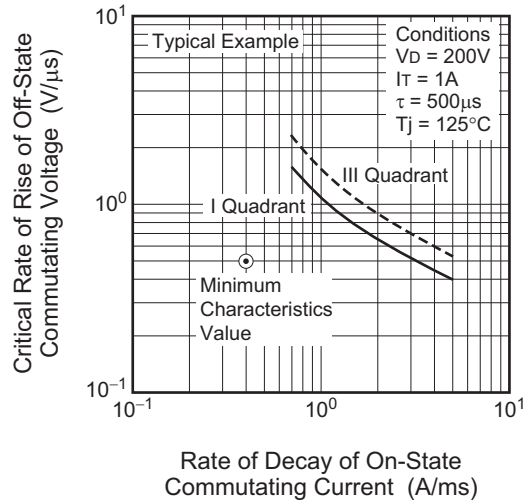
Breakover Voltage vs. Junction Temperature



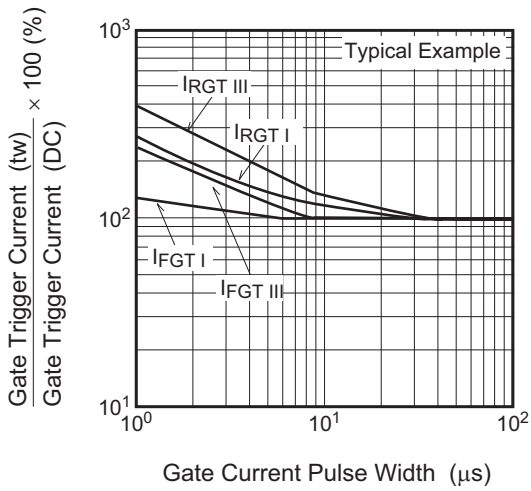
Breakover Voltage vs. Rate of Rise of Off-State Voltage



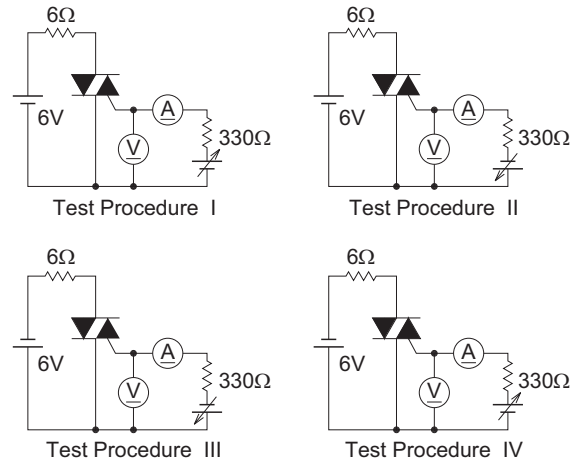
Commutation Characteristics (T_j=125°C)



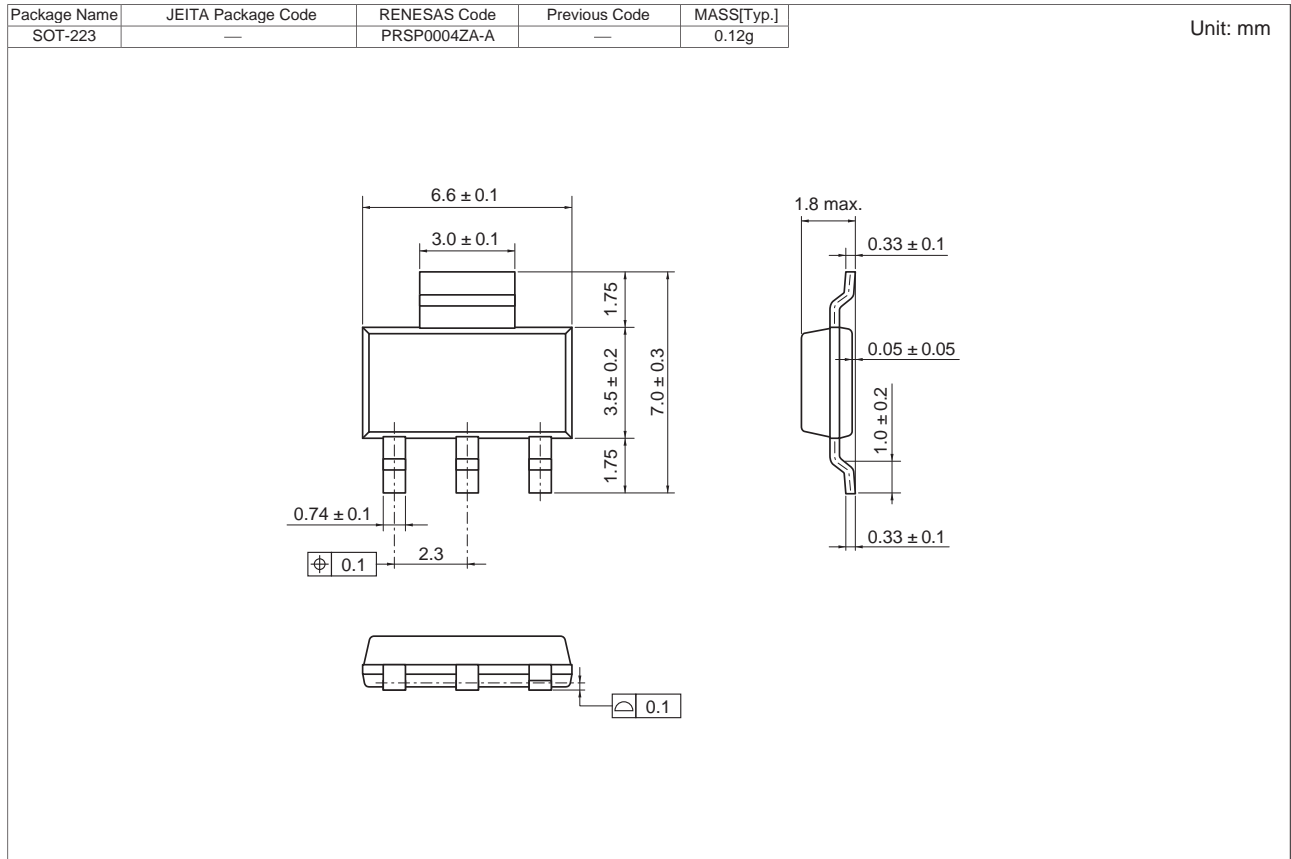
Gate Trigger Current vs. Gate Current Pulse Width



Gate Trigger Characteristics Test Circuits



Package Dimensions



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR08DS-14AT13#B10	Embossed Tape	3000 pcs.	Taping direction "T1"
BCR08DS-14AT13#B12	Embossed Tape	3000 pcs.	Taping direction "T1"

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

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