

# BCR08DS-14A

Triac  
Low Power Use

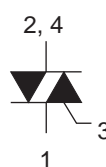
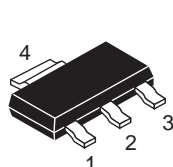
R07DS0258EJ0100  
Rev.1.00  
Mar 30, 2011

## Features

- $I_{T(RMS)}$  : 0.8 A
- $V_{DRM}$  : 700 V
- $I_{FGT}$ ,  $I_{RGT}$ ,  $I_{RGTII}$  : 5 mA
- Planar Passivation Type
- Surface Mounted Type
- Completed Pb Free

## Outline

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



1. T<sub>1</sub> Terminal
2. T<sub>2</sub> Terminal
3. Gate Terminal
4. T<sub>2</sub> 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 <sup>Note1</sup>	$V_{DRM}$	700	V
Non- repetitive peak off-state voltage <sup>Note1</sup>	$V_{DSM}$	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 <sub>c</sub> = 96°C <sup>Note3</sup>
Surge on-state current	$I_{TSM}$	8	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I <sup>2</sup> t for fusing	I <sup>2</sup> t	0.26	A <sup>2</sup> s	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	P <sub>GM</sub>	1	W	
Average gate power dissipation	P <sub>G(AV)</sub>	0.1	W	
Peak gate voltage	V <sub>GM</sub>	6	V	
Peak gate current	I <sub>GM</sub>	0.5	A	
Junction temperature	T <sub>j</sub>	−40 to +125	°C	
Storage temperature	T <sub>stg</sub>	−40 to +125	°C	
Mass	—	0.12	g	Typical value

## Electrical Characteristics

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

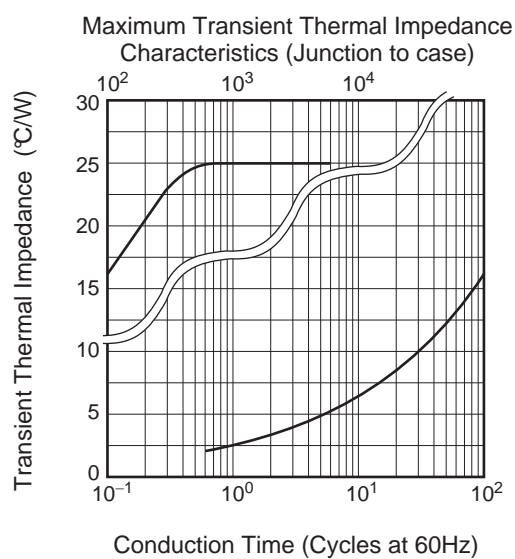
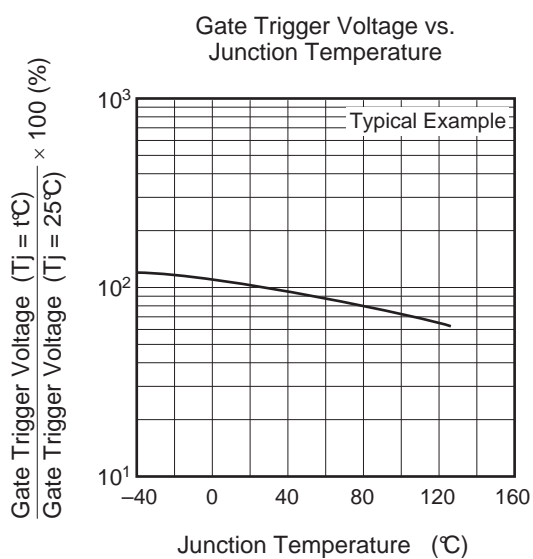
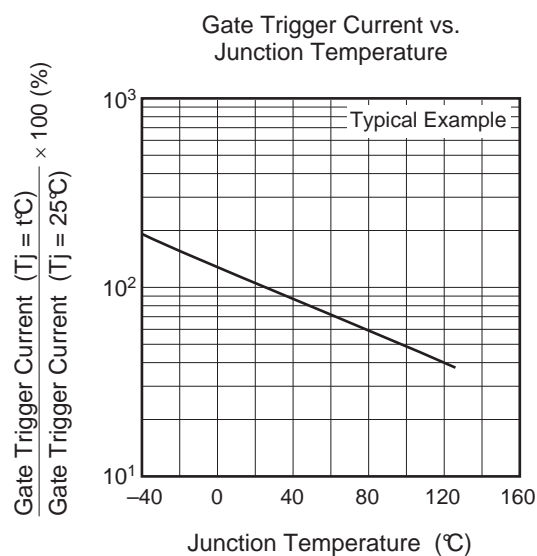
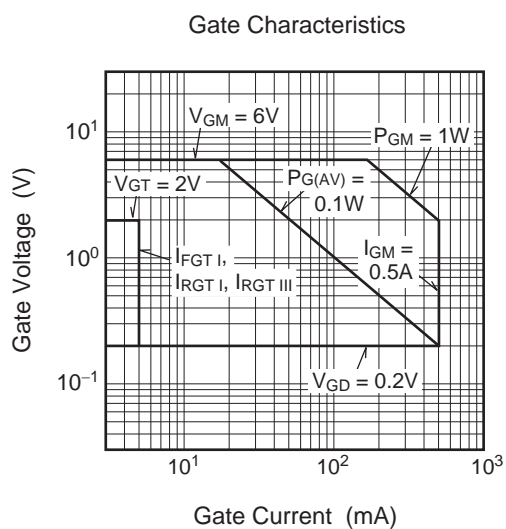
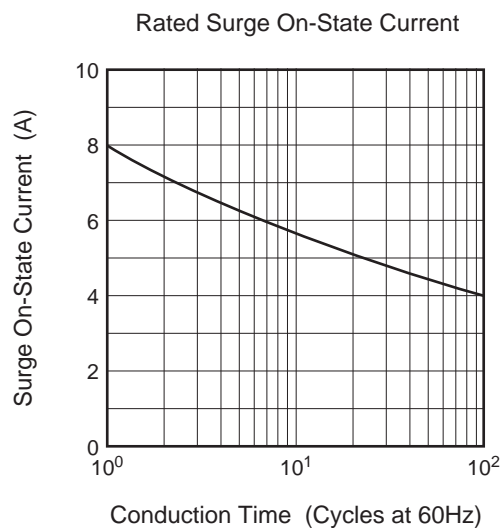
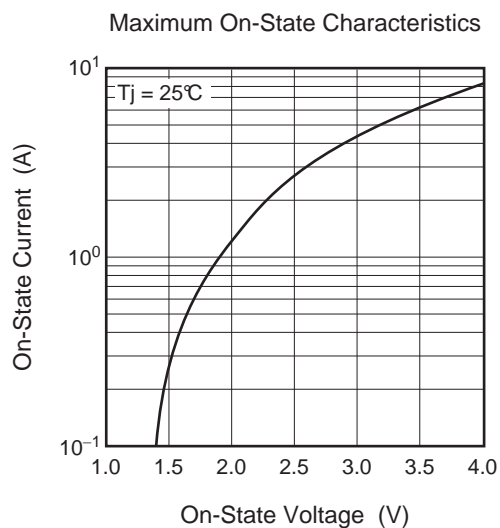
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

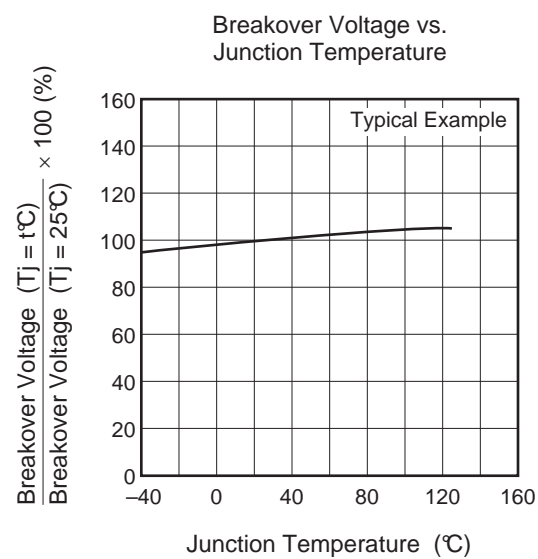
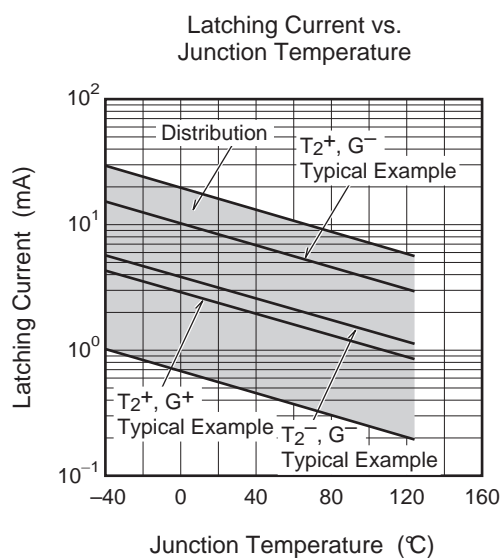
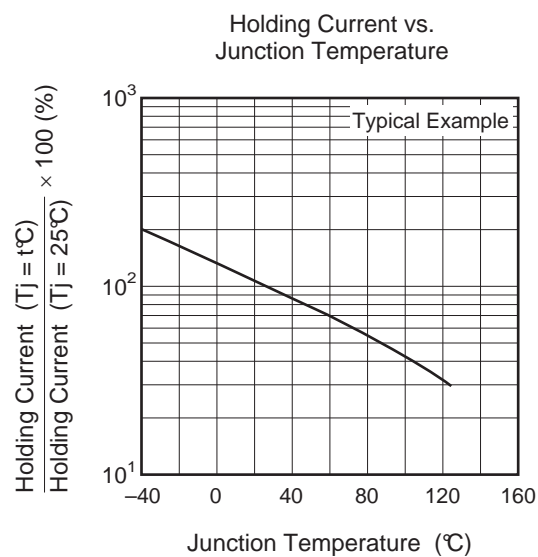
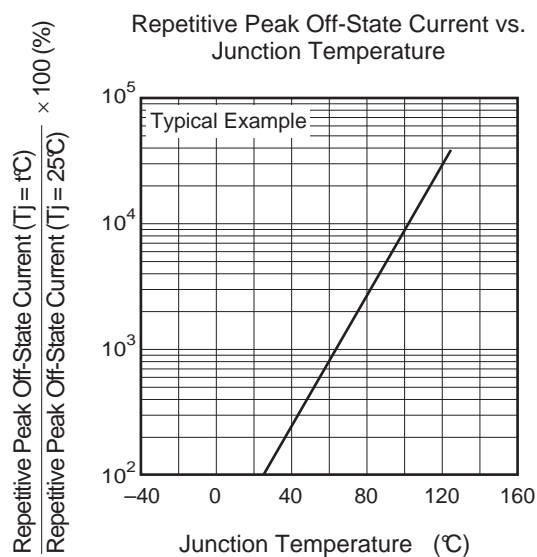
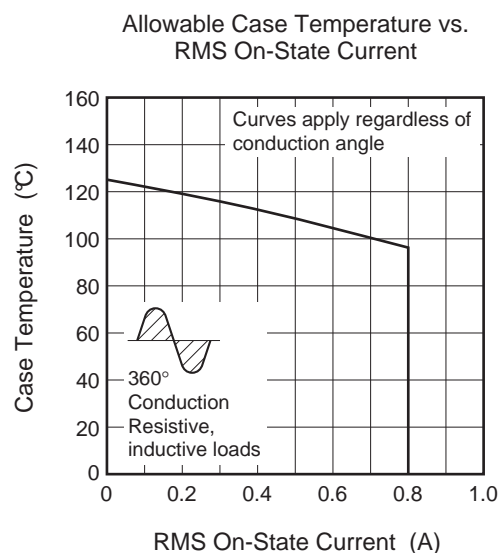
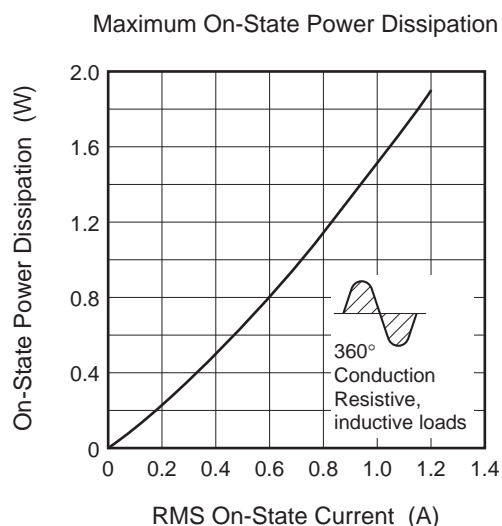
3. Case temperature is measured on the T2 tab..

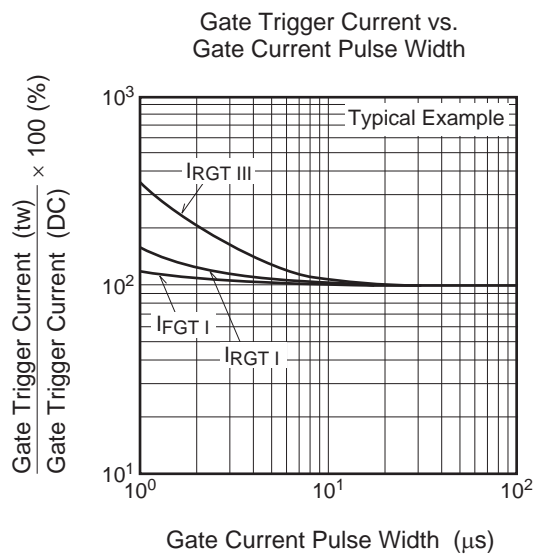
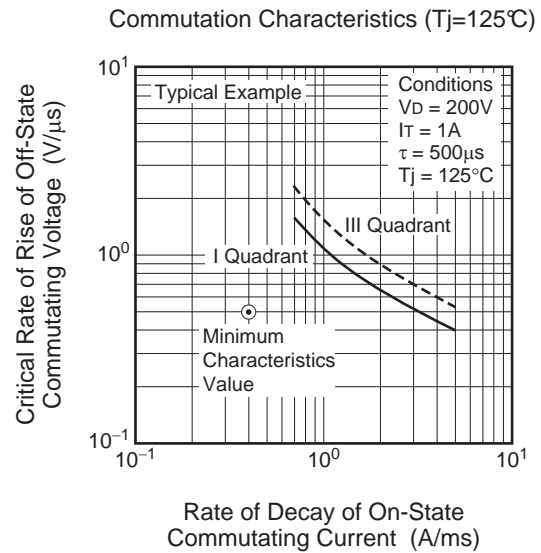
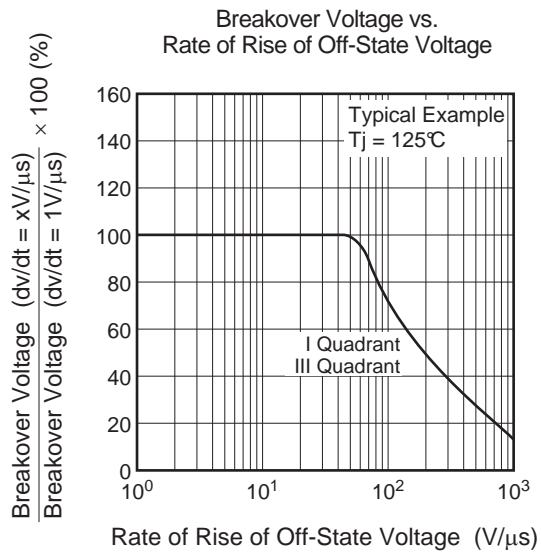
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

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 $(di/dt)_c = -0.4\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

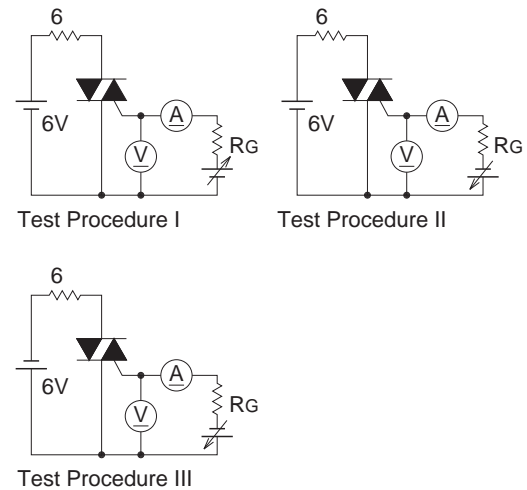
## Performance Curves







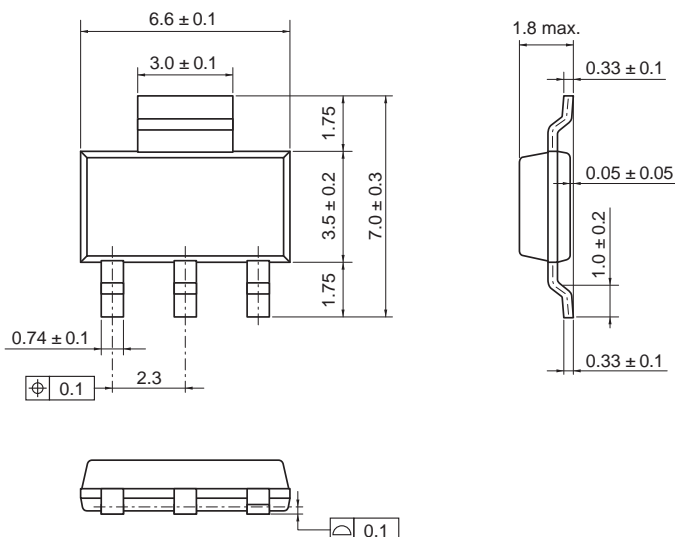
Gate Trigger Characteristics Test Circuits



## Package Dimension

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
SOT-223	—	PRSP0004ZA-A	—	0.12g

Unit: mm



## Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR08DS-14A-T13#B10	Embossed Tape	3000 pcs.	Taping direction "T1"

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

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Tel: +1-408-588-6000, Fax: +1-408-588-6130

**Renesas Electronics Canada Limited**  
1101 Nicholson Road, Newmarket, Ontario L3Y 9C3, Canada  
Tel: +1-905-898-5441, Fax: +1-905-898-3220

**Renesas Electronics Europe Limited**  
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.  
Tel: +44-1628-585-100, Fax: +44-1628-585-900

**Renesas Electronics Europe GmbH**  
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**Renesas Electronics (China) Co., Ltd.**  
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Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

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**Renesas Electronics Hong Kong Limited**  
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