

BCR5AS-14A

Triac

R07DS0671EJ0100

Rev.1.00

Medium Power Use

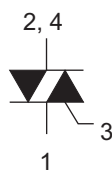
Jul 23, 2012

Features

- $I_T (RMS)$: 5 A
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 30 mA
- Non-Insulated Type
- Planar Passivation Type

Outline

RENESAS Package code: PRSS0004ZG-A
(Package name: MP-3A)



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

Applications

Hybrid IC, Solid state relay, Switching mode power supply, light dimmer, electronic switch, electric fans, electronic blanket, and Washing machine, small motor controller and other general purpose control applications

Maximum Ratings

Parameter	Symbol	Voltage class	
		14	Unit
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	$I_T (RMS)$	5	A	Commercial frequency, sine full wave 360°conduction, T _c = 103°C
Surge on-state current	I_{TSM}	50	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I ² t for fusion	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	—	0.26	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_{FGTI}	—	—	1.5	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	V_{RGTI}	—	—	1.5	
	III	V_{RGTIII}	—	—	1.5	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	30	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	30	
	III	I_{RGTIII}	—	—	30	
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}
Critical-rate of rise of off-state commutation voltage ^{Note4}	$(dv/dt)_c$	5	—	—	V/ μs	$T_j = 125^\circ\text{C}$

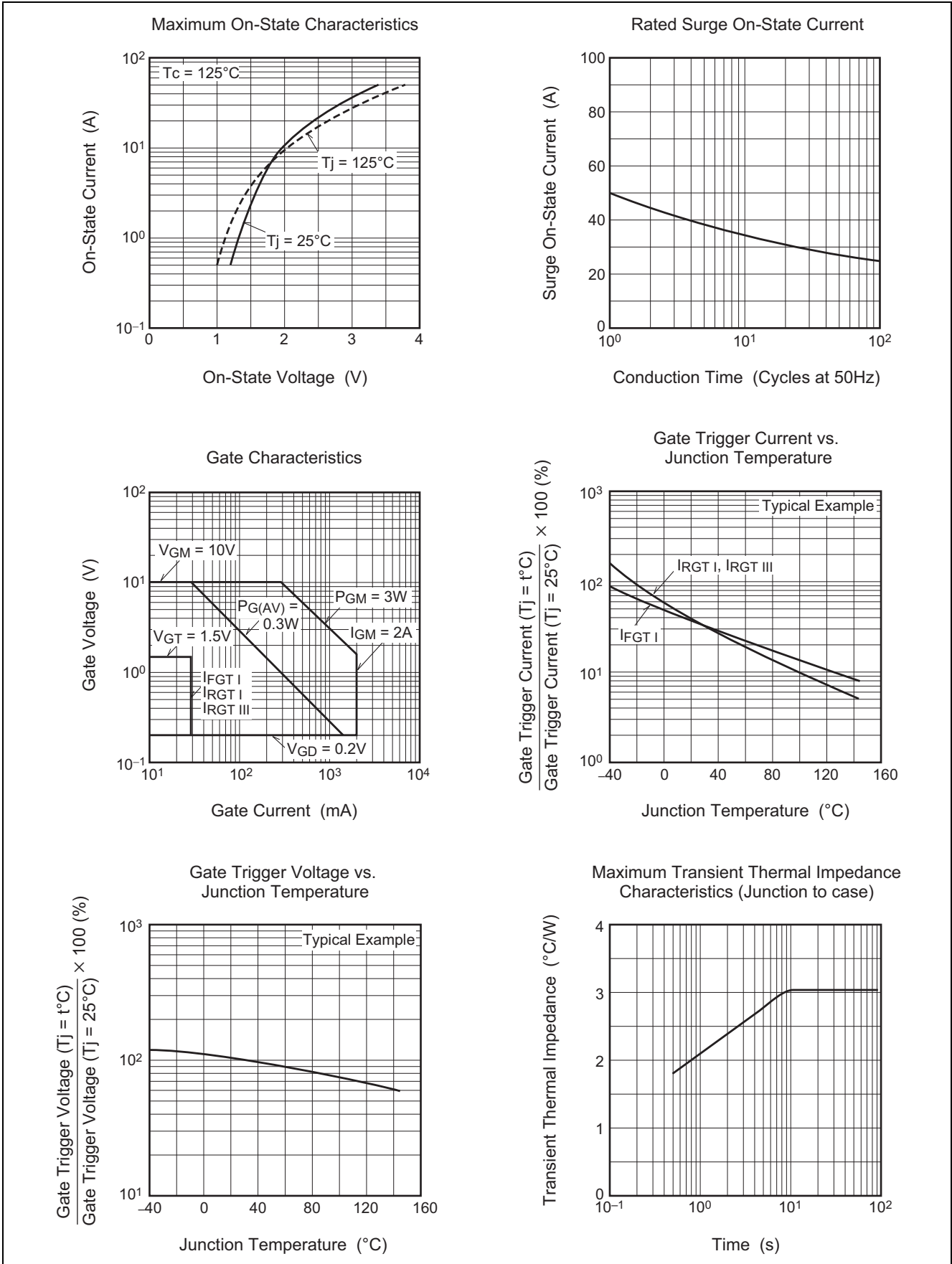
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

3. Case temperature is measured on the T2 tab.

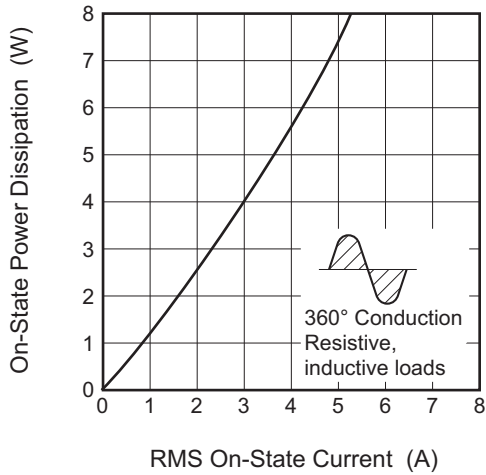
4. Test conditions of the critical-rate of rise of off-state commutation voltage is shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -2.5\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

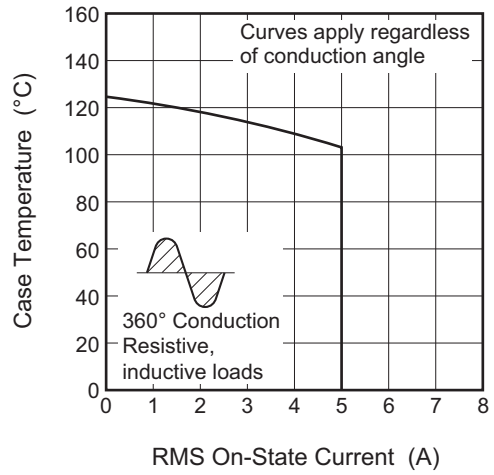
Performance Curves



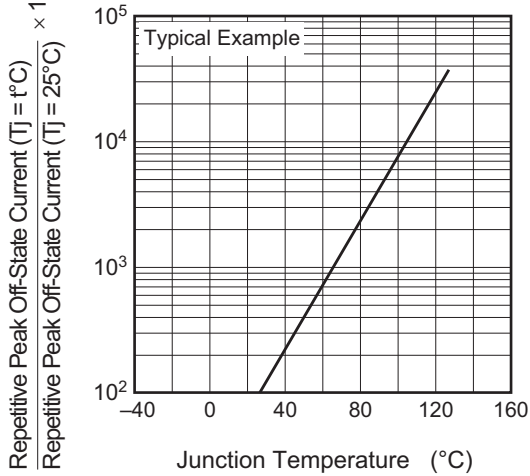
Maximum On-State Power Dissipation



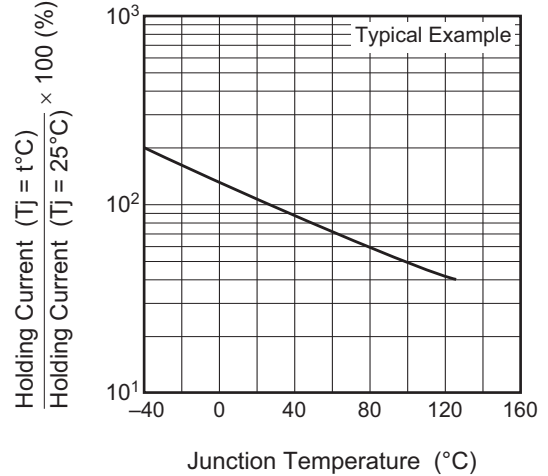
Allowable Case Temperature vs. RMS On-State Current



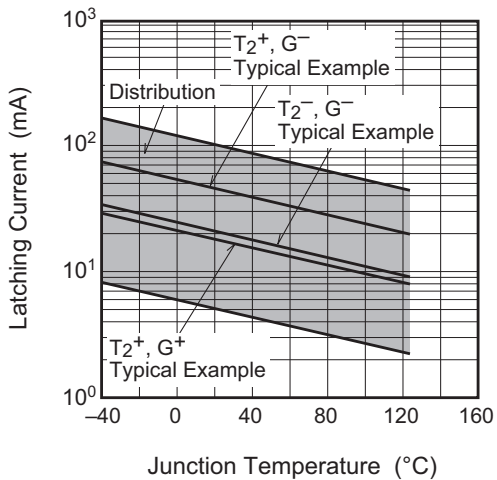
Repetitive Peak Off-State Current vs. Junction Temperature



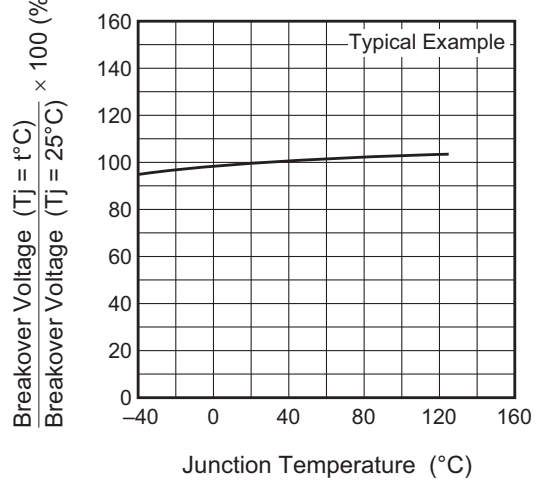
Holding Current vs. Junction Temperature

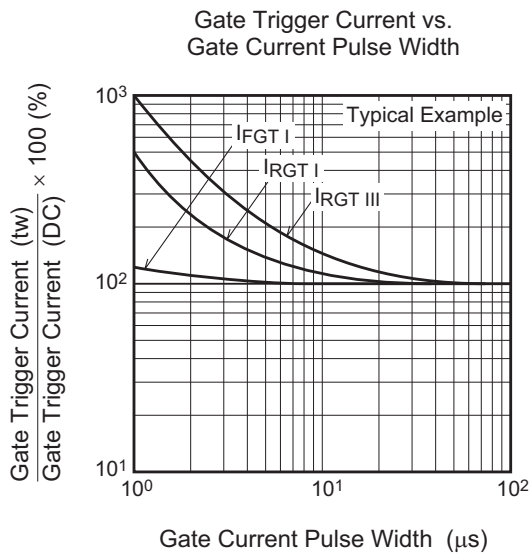
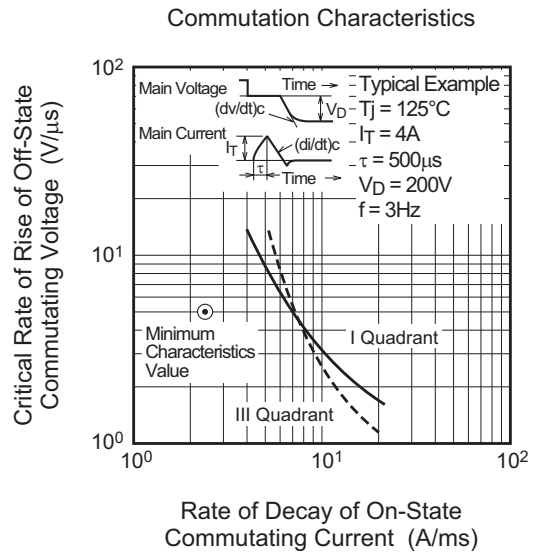
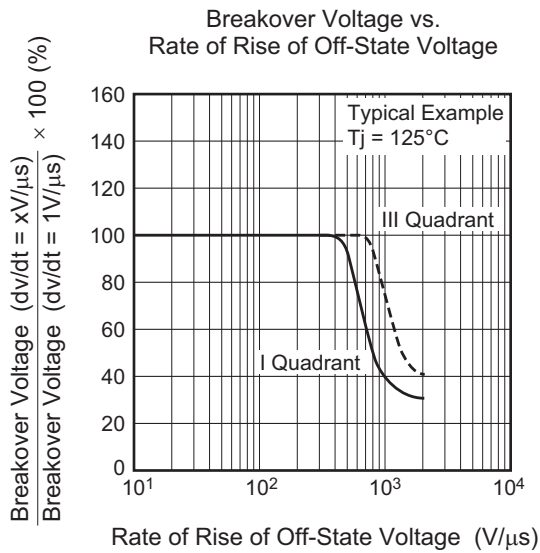


Latching Current vs. Junction Temperature

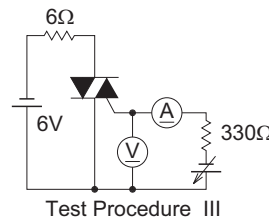
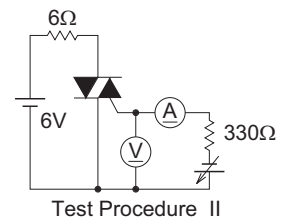
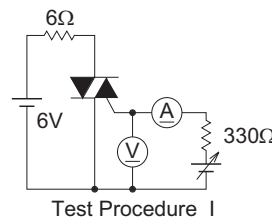


Breakover Voltage vs. Junction Temperature





Gate Trigger Characteristics Test Circuits



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
MP-3A	SC-63	PRSS0004ZG-A	—	0.32g	

The drawing shows three views of the package:

- Top View:** Shows a square body with a width of 6.6 mm and a height of 1.0 ± 0.2 mm. The top surface has a width of 5.3 ± 0.2 mm. The bottom surface has a width of 2.3 ± 0.2 mm. The distance between the two leads is 0.76 mm, and the lead width is 0.76 mm. The lead length is 2.5 mm (Min).
- Side View:** Shows the package height of 6.1 ± 0.2 mm (Max). The lead length is 1.4 ± 0.2 mm. The lead width is 0.5 ± 0.2 mm. The distance between the leads is 2.3 mm. The lead thickness is 0.1 ± 0.1 mm.
- Bottom View:** Shows the package width of 2.3 mm and a height of 1 mm.

Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR5AS-14A#B00	Tube	75 pcs.	MP-3A package
BCR5AS-14A -T13#B00	Embossed Tape	3000 pcs.	MP-3A package, Taping direction "T1"

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

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Renesas Electronics America Inc.
2880 Scott Boulevard Santa Clara, CA 95050-2554, U.S.A.
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
Arcadiastrasse 10, 40472 Düsseldorf, Germany
Tel: +49-211-65030, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.
7th Floor, Quantum Plaza, No.27 ZhiChunLu Haidian District, Beijing 100083, P.R.China
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.
Unit 204, 205, AZIA Center, No.1233 Lujiazui Ring Rd., Pudong District, Shanghai 200120, China
Tel: +86-21-5877-1818, Fax: +86-21-6887-7858 / -7898

Renesas Electronics Hong Kong Limited
Unit 1601-1613, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong
Tel: +852-2886-9318, Fax: +852 2886-9022/9044

Renesas Electronics Taiwan Co., Ltd.
13F, No. 363, Fu Shing North Road, Taipei, Taiwan
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

Renesas Electronics Singapore Pte. Ltd.
1 HarbourFront Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: +65-6213-0200, Fax: +65-6278-8001

Renesas Electronics Malaysia Sdn.Bhd.
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: +60-3-7955-3390, Fax: +60-3-7955-9510

Renesas Electronics Korea Co., Ltd.
11F., Samik Laved or Bldg., 720-2 Yeoksam-Dong, Kangnam-Ku, Seoul 135-080, Korea
Tel: +82-2-558-3737, Fax: +82-2-558-5141