

BCR2AS-14A

Triac
Low Power Use

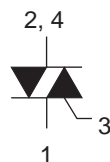
R07DS0257EJ0100
Rev.1.00
Feb 28, 2011

Features

- $I_{T(RMS)}$: 2 A
- V_{DRM} : 700 V
- I_{FGT} , I_{RGT} , I_{RGT} : 10 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

Small motor control, heater control, and other general purpose AC power 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

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	2	A	Commercial frequency, sine full wave 360°conduction
Surge on-state current	I_{TSM}	9	A	50Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	0.41	A ² s	Value corresponding to 1 cycle of half wave 50Hz, 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}	1	A	
Junction temperature	T_j	- 40 to +125	°C	
Storage temperature	T_{stg}	- 40 to +125	°C	
Mass	—	0.26	g	Typical value

Notes: 1. Gate open.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	1.0	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	2.1	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 3\text{A}$, instantaneous measurement
Gate trigger voltage ^{Note2}	I	V_{FGTI}	—	—	2.0	$T_j = 25^\circ\text{C}$, $V_D = 6\text{V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	V_{RGTI}	—	—	2.0	
	III	V_{RGTIII}	—	—	2.0	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	10	$T_j = 25^\circ\text{C}$, $V_D = 6\text{V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	10	
	III	I_{RGTIII}	—	—	10	
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-c)}$	—	—	4.0	$^\circ\text{C/W}$	Junction to case ^{Note3}
Critical-rate of rise of off-state commutation voltage ^{Note4}	$(dv/dt)_c$	0.5	—	—	$\text{V}/\mu\text{s}$	$T_j = 125^\circ\text{C}$

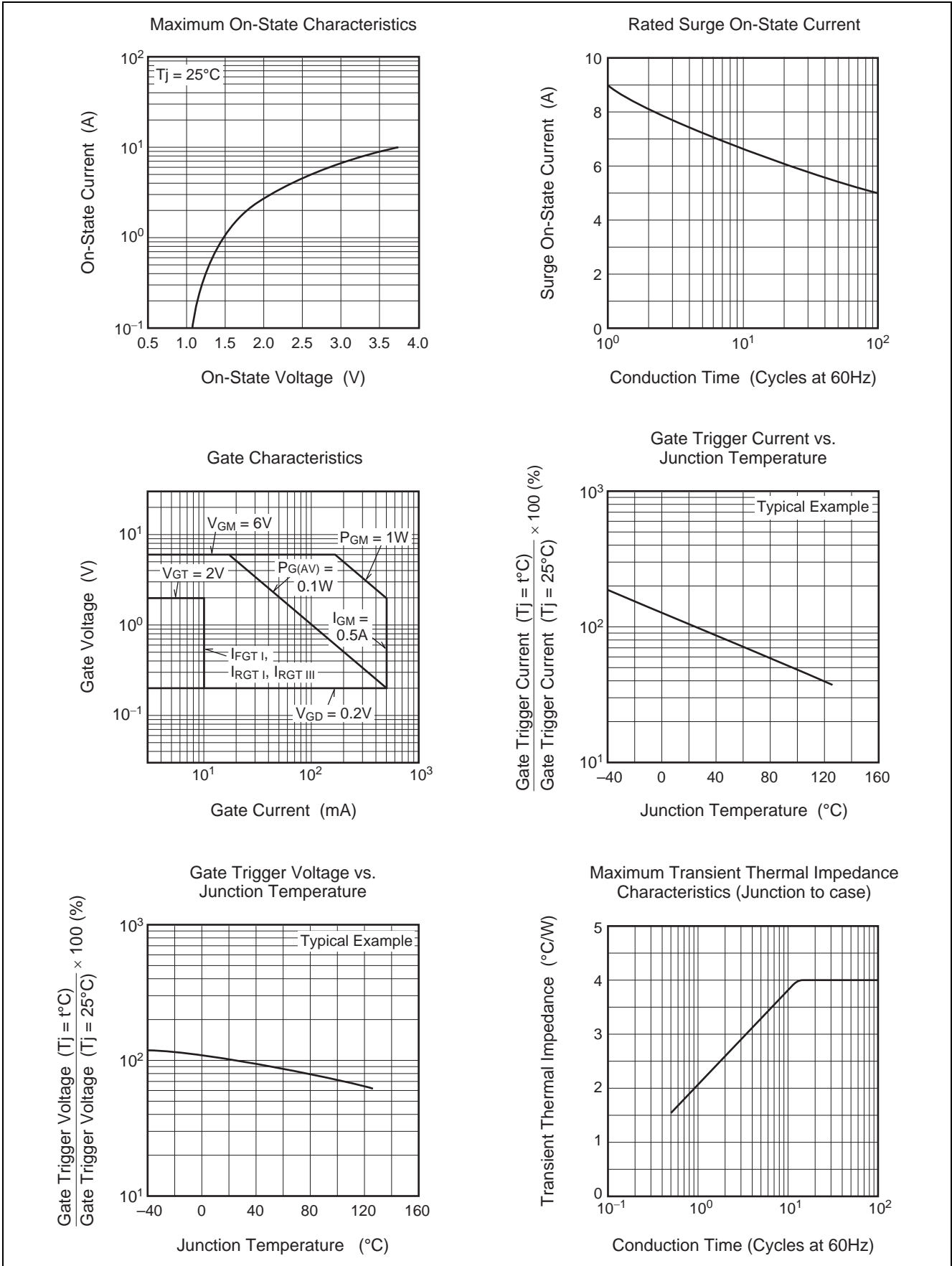
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

3. Case temperature is measured on the T_2 tab.

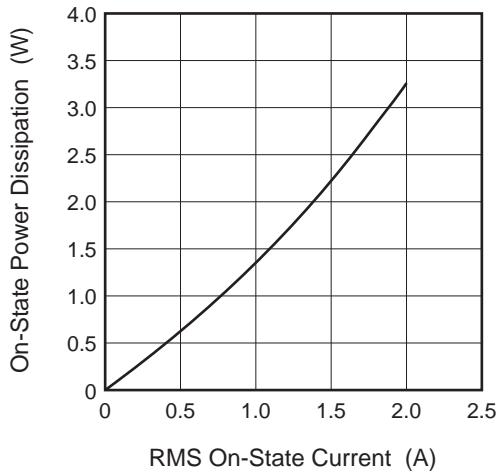
4. Test conditions of the critical-rate of rise of off-state commutation voltage is shown in the table below.

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 $(di/dt)_c = -1.0\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

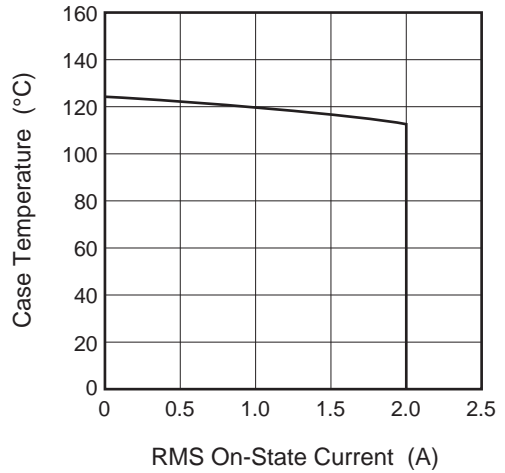
Performance Curves



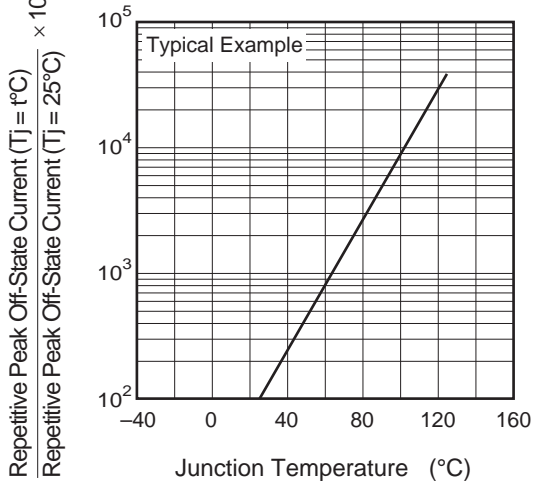
Maximum On-State Power Dissipation



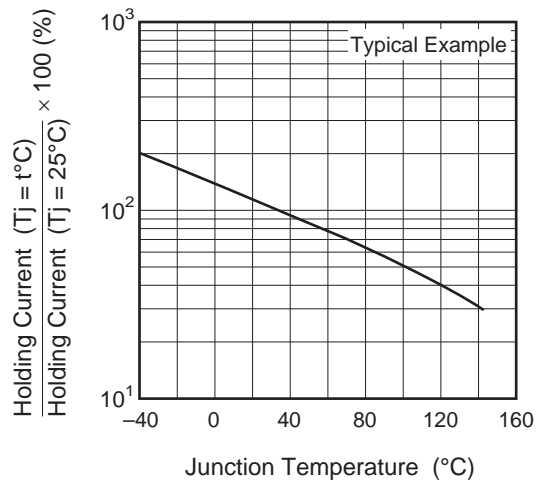
Allowable Case Temperature vs. RMS On-State Current



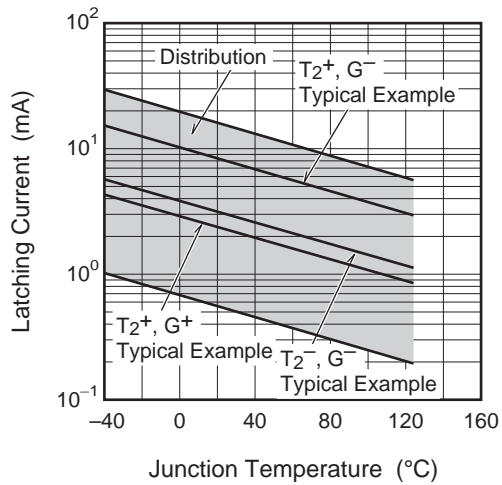
Repetitive Peak Off-State Current vs. Junction Temperature



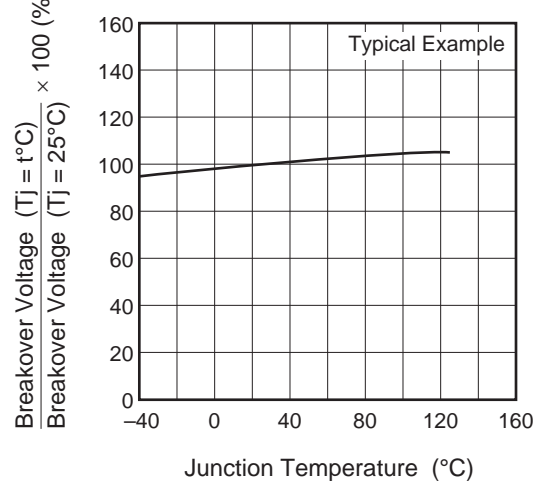
Holding Current vs. Junction Temperature

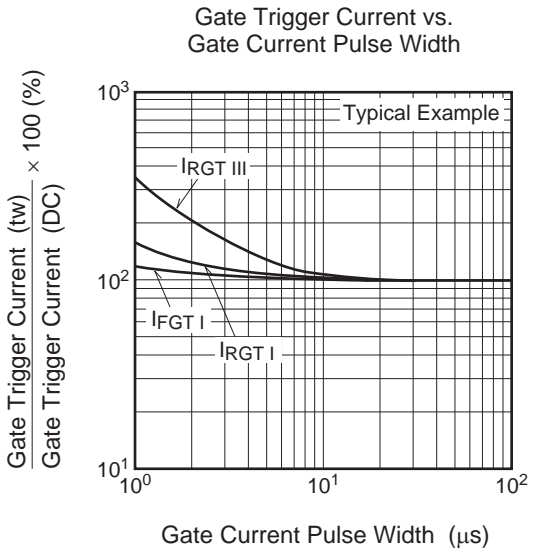
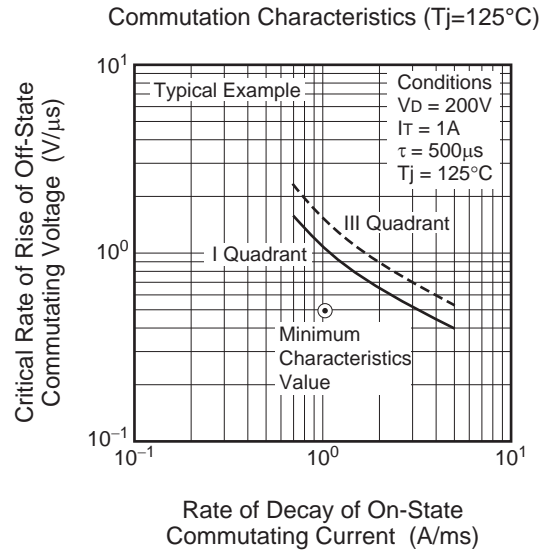
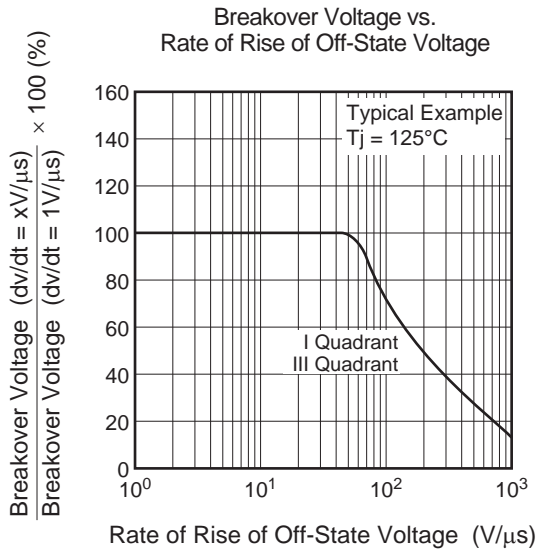


Latching Current vs. Junction Temperature

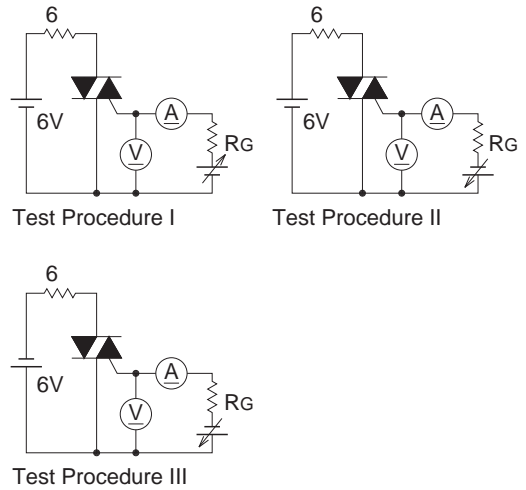


Breakover Voltage vs. Junction Temperature





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	TMP3	0.32g	

The drawing shows the following dimensions:

- Top view: Overall width 6.6 mm, inner width 5.3 ± 0.2 mm, distance between leads 2.3 ± 0.2 mm, lead width 0.76 ± 0.2 mm, lead spacing 1 Max, lead length 2.5 Min.
- Side view: Total height 10.4 Max, top flange height 1 ± 0.2 mm, top flange width 2.3 mm, top flange thickness 0.5 ± 0.2 mm, bottom lead height 0.1 ± 0.1 mm, bottom lead length 1.4 ± 0.2 mm, bottom lead width 0.5 ± 0.2 mm.
- Bottom view: Lead width 2.3 mm, lead height 1 mm.

Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR2AS-14A#B00	Tube	75 pcs.	—
BCR2AS-14A-T13#B00	Embossed Tape	3000 pcs.	Taping direction "T1"

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

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