

BCR8AS-14LJ

Triac
Medium Power Use

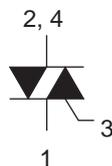
R07DS0514EJ0100
Rev.1.00
Oct 14, 2011

Features

- $I_{T(RMS)}$: 8 A
- V_{DRM} : 700 V
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 30 mA
- Non-Insulated Type
- Planar Type
- Surface Mounted type

Outline

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



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

Applications

Washing machine, and other general purpose AC 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	$I_{T(RMS)}$	8	A	Commercial frequency, sine full wave 360°conduction, T _c =97°C
Surge on-state current	I_{TSM}	80	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I ² t for fusion	I ² t	26	A ² s	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	T _j	-40 to +125	°C	
Storage temperature	T _{stg}	-40 to +125	°C	
Mass	—	0.32	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}	—	—	1.6	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 12\text{ A}$, 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	$R_{th(j-c)}$	—	—	2.7	$^\circ\text{C/W}$	Junction to case ^{Note3}
Critical-rate of rise of off-state commutation voltage ^{Note4}	$(dv/dt)_c$	10	—	—	V/ μs	$T_j = 125^\circ\text{C}$

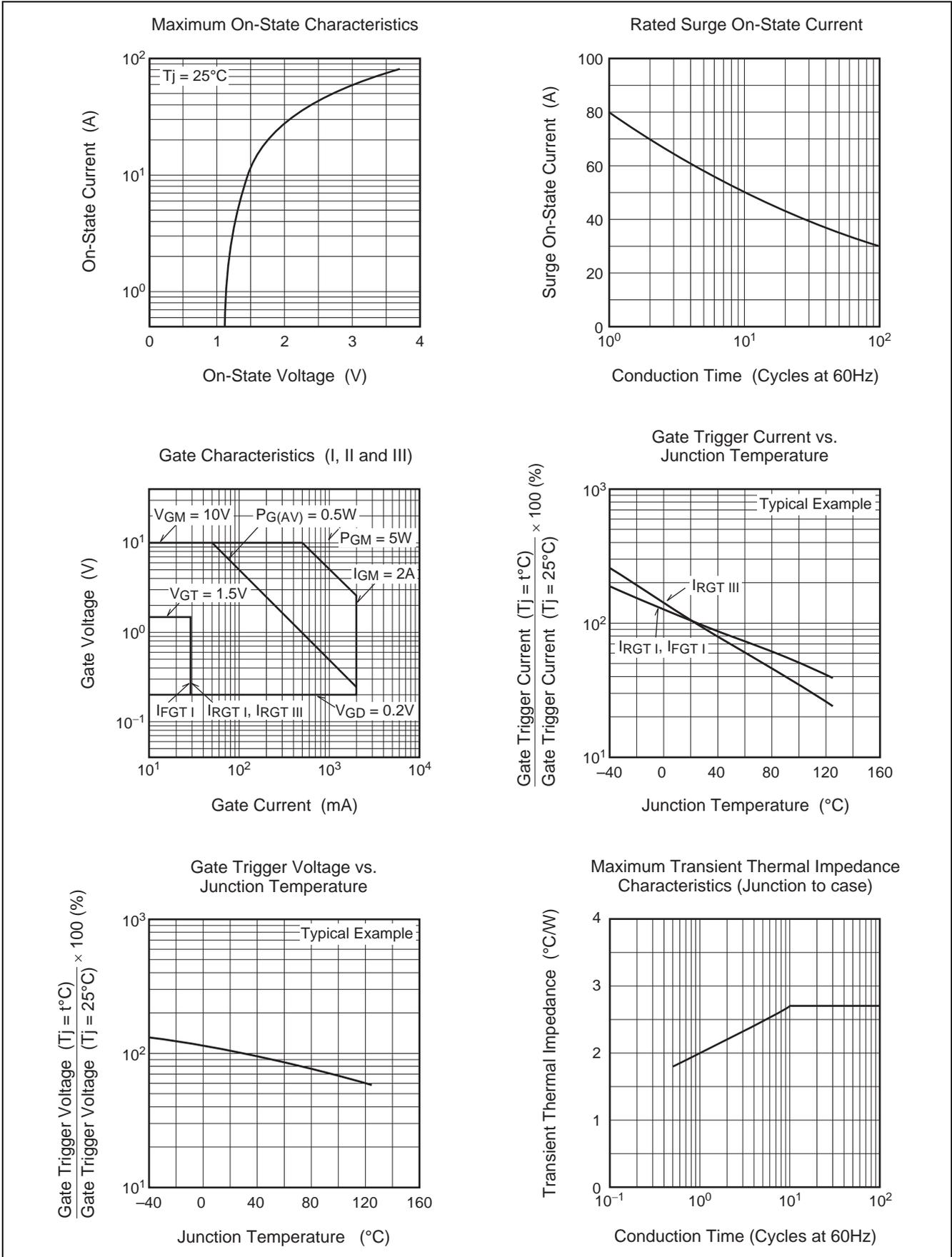
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

3. Case temperature is measured on the T_2 tab.

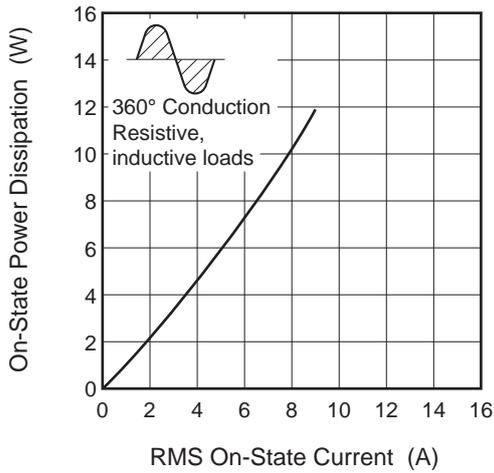
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below

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 $(di/dt)_c = -4.0\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

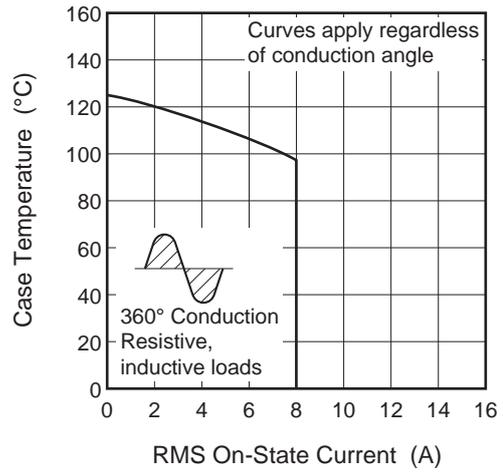
Performance Curves



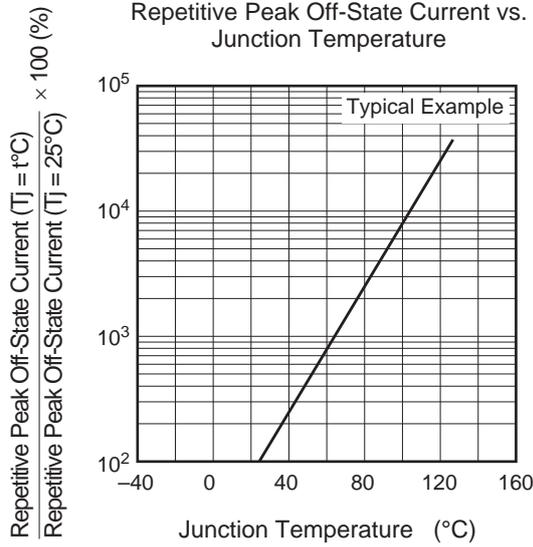
Maximum On-State Power Dissipation



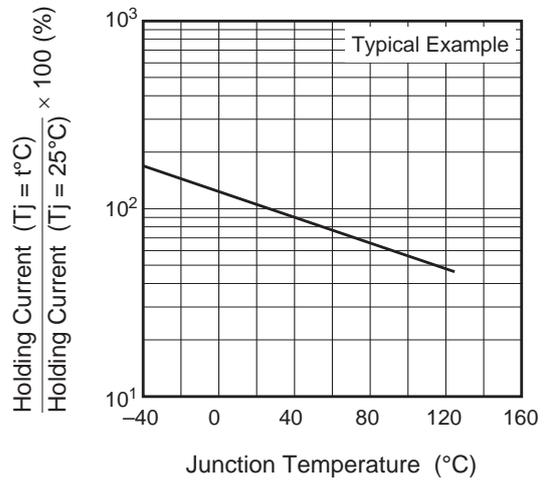
Allowable Case Temperature vs. RMS On-State Current



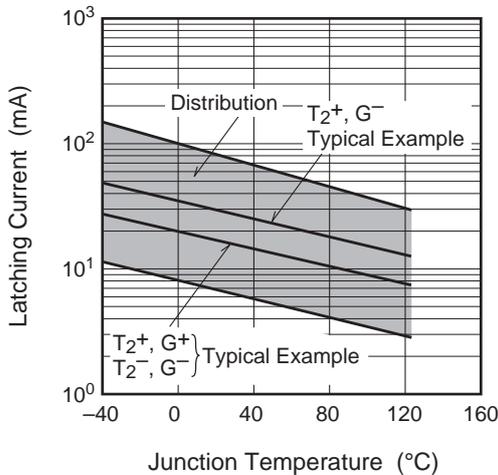
Repetitive Peak Off-State Current vs. Junction Temperature



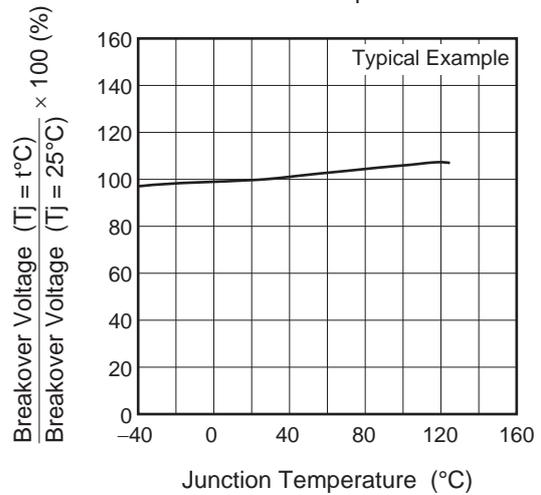
Holding Current vs. Junction Temperature

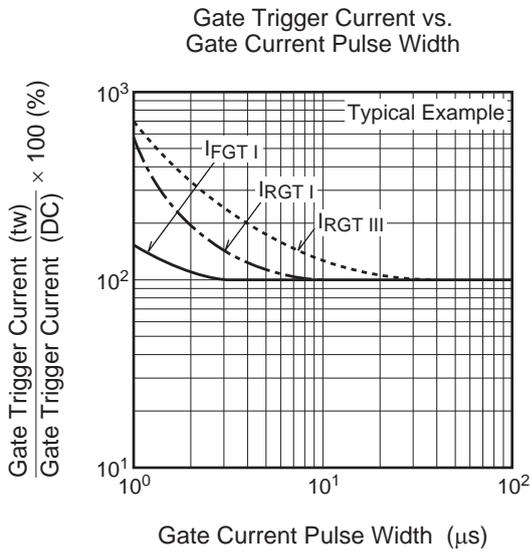
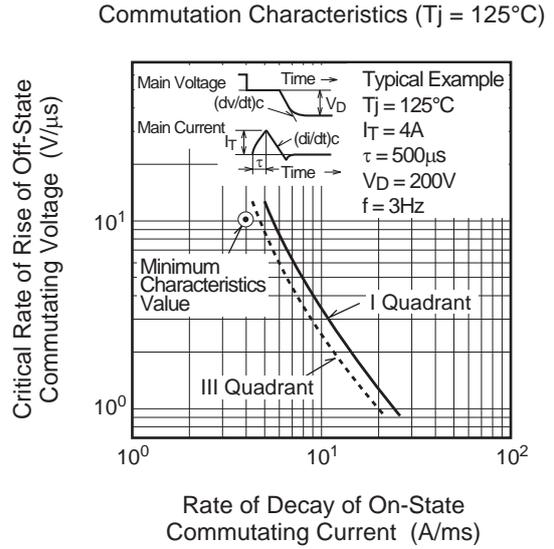
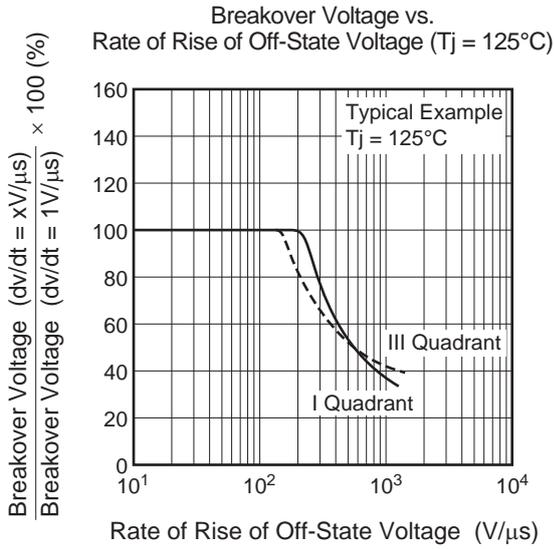


Latching Current vs. Junction Temperature

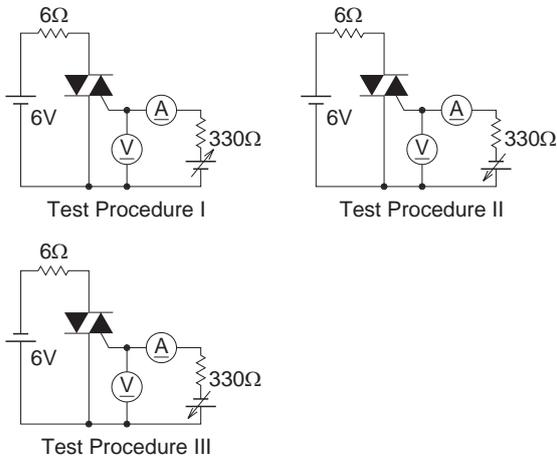


Breakover Voltage vs. Junction Temperature

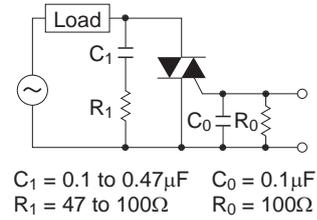




Gate Trigger Characteristics Test Circuits



Recommended Circuit Values Around The Triac



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 inner width is 5.3 ± 0.2 mm. The distance between the centers of the two leads is 2.3 ± 0.2 mm. The lead width is 0.76 ± 0.2 mm. The lead thickness is 1.0 mm (labeled as 1Max).
- Side View:** Shows the package height of 10.4 mm (labeled as 10.4Max). The lead height is 2.5 mm (labeled as 2.5Min). The lead thickness is 0.5 ± 0.2 mm. The distance from the top of the package to the start of the lead is 0.1 ± 0.1 mm. The distance from the bottom of the package to the start of the lead is 1.4 ± 0.2 mm. The distance from the bottom of the package to the end of the lead is 0.5 ± 0.2 mm.
- Bottom View:** Shows the package width of 2.3 mm and a thickness of 1.0 mm.

Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR8AS-14LJ#B01	Tube	75 pcs.	MP-3A package
BCR8AS14LJ-T13#B01	Embossed Tape	3000 pcs.	MP-3A package, Taping direction "T1"

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

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