

BCR4AS-16LH

Triac
Medium Power Use

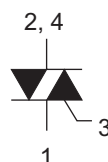
R07DS0331EJ0100
Rev.1.00
Apr 28, 2011

Features

- $I_{T(RMS)}$: 4 A
- V_{DRM} : 800 V
- I_{FGT} , I_{RGT} , $I_{RGT III}$: 35 mA or 10mA(I_{GT} item:1)
- High Commutation
- The Product guaranteed maximum junction temperature 150°C
- Non-Insulated Type
- Planar Type

Outline

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



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

Applications

Switching mode power supply, small motor control, heater control, and other general purpose AC power control applications

Maximum Ratings

Parameter	Symbol	Voltage class	
		16	Unit
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	800	V
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	960	V

Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	4	A	Commercial frequency, sine full wave 360°conduction, $T_c = 129^{\circ}\text{C}$ ^{Note3}
Surge on-state current	I_{TSM}	30	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	3.7	A ² s	Value corresponding to 1 cycle of half wave 60 Hz, 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 +150	°C	
Storage temperature	T_{stg}	-40 to +150	°C	
Mass	—	0.32	g	Typical value

Electrical Characteristics

Parameter	Symbol	BCR4AS-16LH-1 (I _{GT} item : 1)			BCR4AS-16LH			Unit	Test conditions	
		Min.	Typ.	Max.	Min.	Typ.	Max.			
Repetitive peak off-state current	I _{DRM}	—	—	2.0	—	—	2.0	mA	T _j = 150°C V _{DRM} applied	
On-state voltage	V _{TM}	—	—	1.6	—	—	1.6	V	T _c = 25°C, I _{TM} = 6 A instantaneous measurement	
Gate trigger voltage ^{Note2}	I	V _{FGTI}	—	—	1.5	—	—	1.5	V	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II	V _{RGTI}	—	—	1.5	—	—	1.5	V	
	III	V _{RGTIII}	—	—	1.5	—	—	1.5	V	
Gate trigger current ^{Note2}	I	I _{FGTI}	—	—	10	—	—	35	mA	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II	I _{RGTI}	—	—	10	—	—	35	mA	
	III	I _{RGTIII}	—	—	10	—	—	35	mA	
Gate non-trigger voltage	V _{GD}	0.2	—	—	0.2	—	—	V	T _j = 125°C V _D = 1/2 V _{DRM}	
		0.1	—	—	0.1	—	—	V	T _j = 150°C V _D = 1/2 V _{DRM}	
Thermal resistance	R _{th(j-c)}	—	—	3.8	—	—	3.8	°C/W	Junction to case ^{Note3}	
Critical-rate of decay of on-state commutating current ^{Note4}	(di/dt) _c	2.5	—	—	—	—	—	A/ms	T _j = 125°C (dv/dt) _c < 10 V/μs	
		—	—	—	3.0	—	—	A/ms	T _j = 125°C (dv/dt) _c < 100 V/μs	

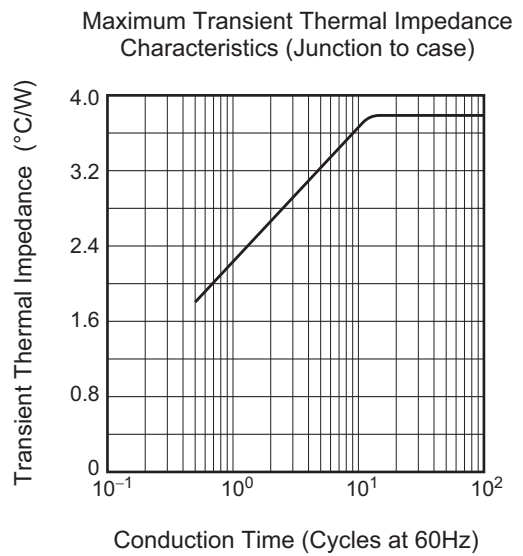
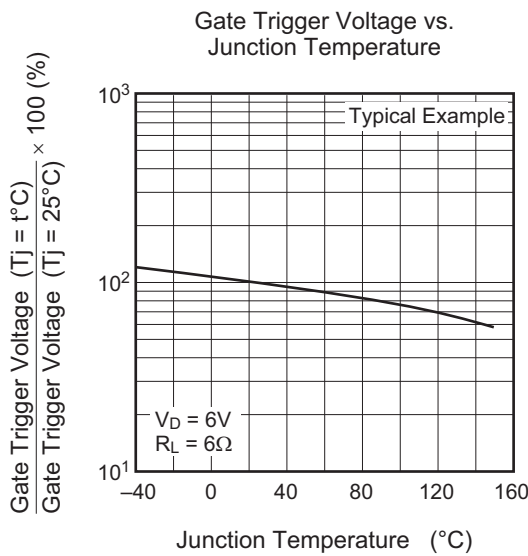
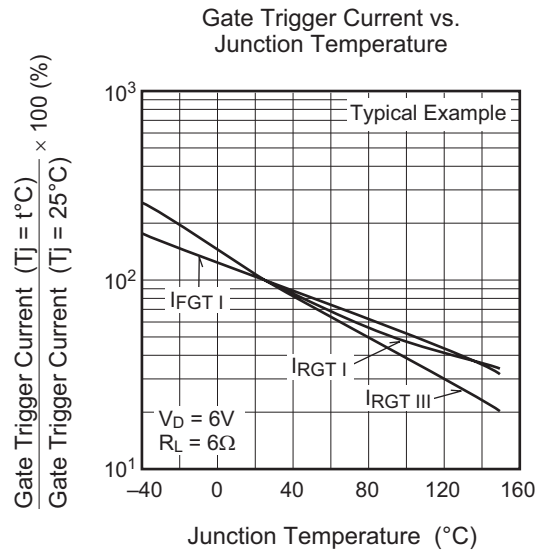
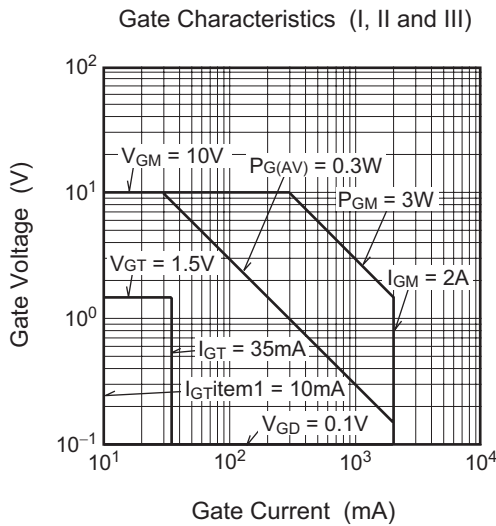
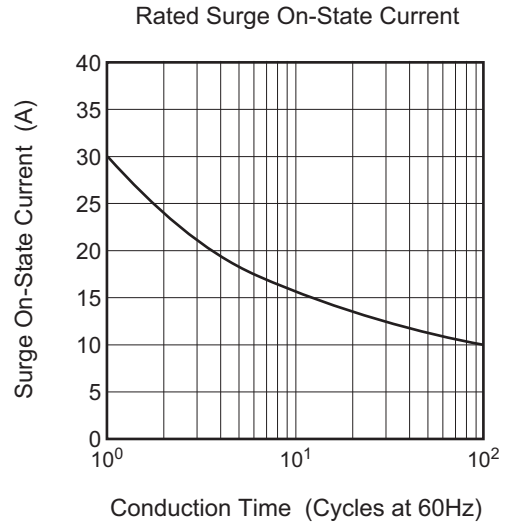
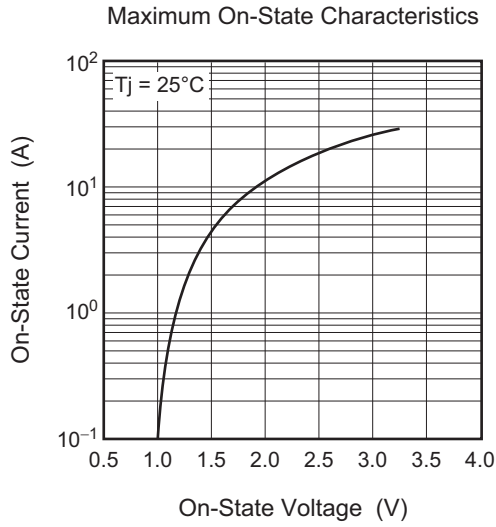
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

3. Case temperature is measured on the T₂ tab.

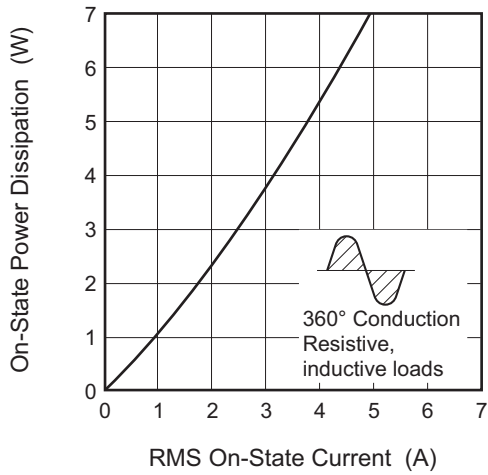
4. Test conditions of the critical-rate of decay of on-state commutating current is shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T _j = 125°C 2. Peak off-state voltage V _D = 400 V 2. Rate of rise of off-state commutating voltage (dv/dt) _c < 10 V/μs (I _{GT} item : 1) (dv/dt) _c < 100 V/μs	

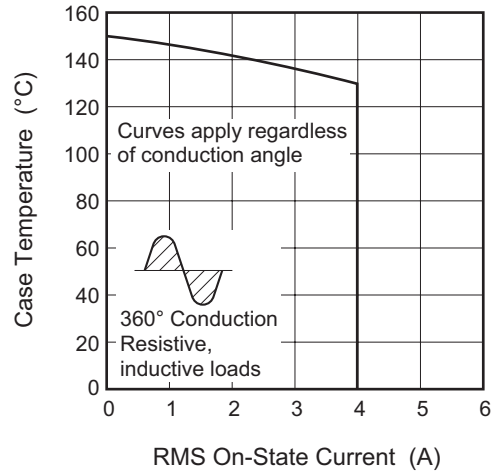
Performance Curves



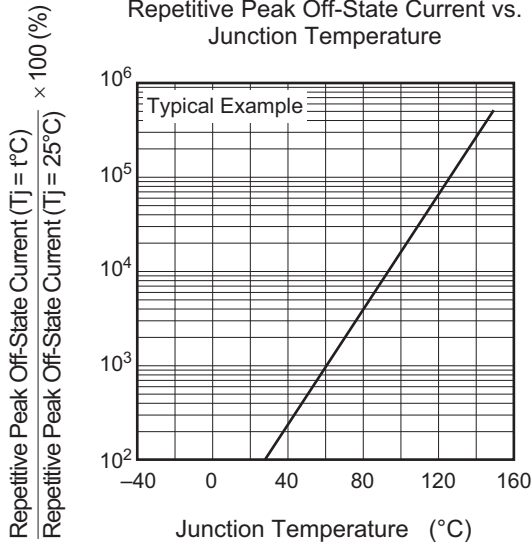
Maximum On-State Power Dissipation



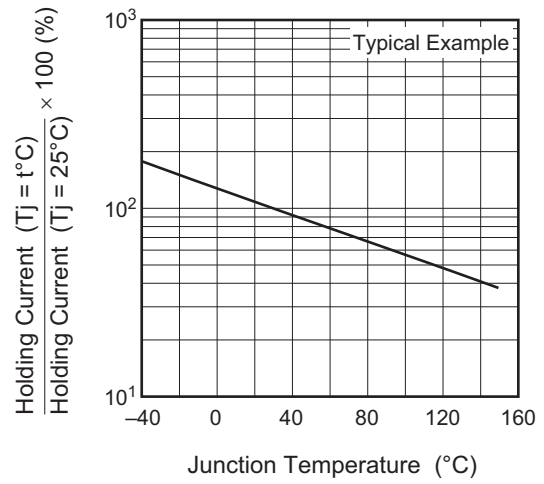
Allowable Case Temperature vs. RMS On-State Current



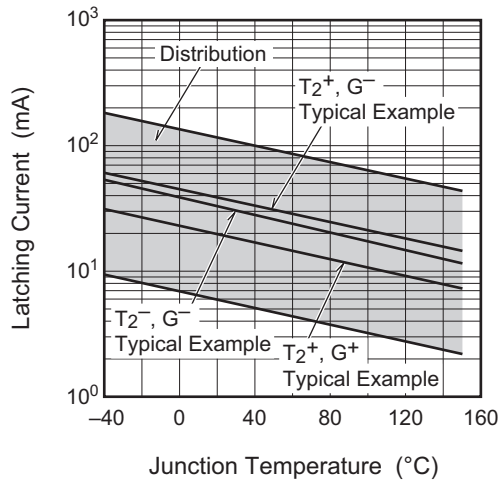
Repetitive Peak Off-State Current vs. Junction Temperature



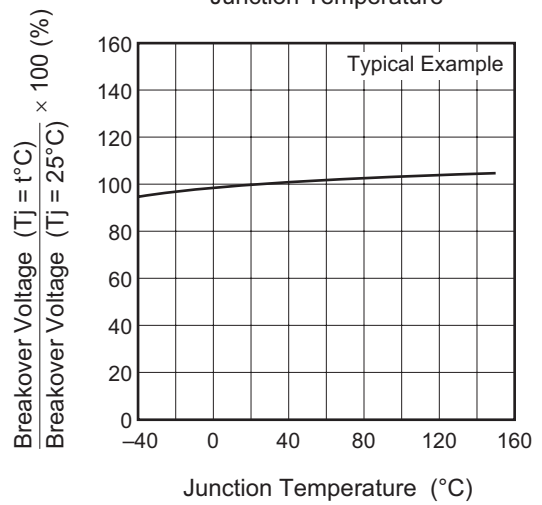
Holding Current vs. Junction Temperature

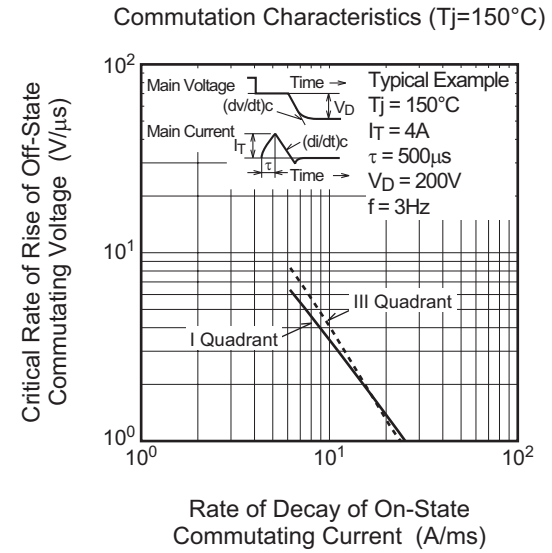
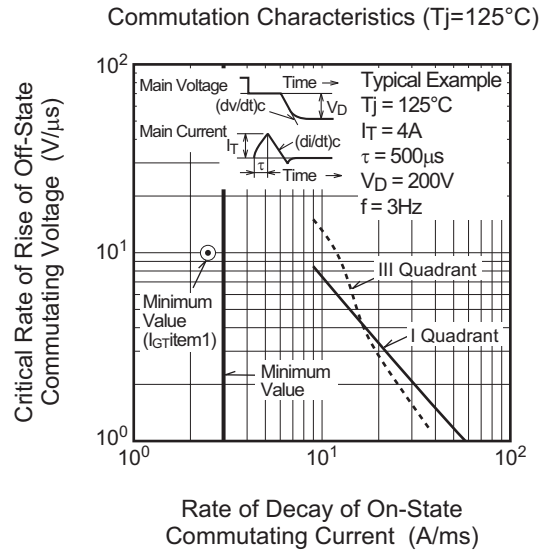
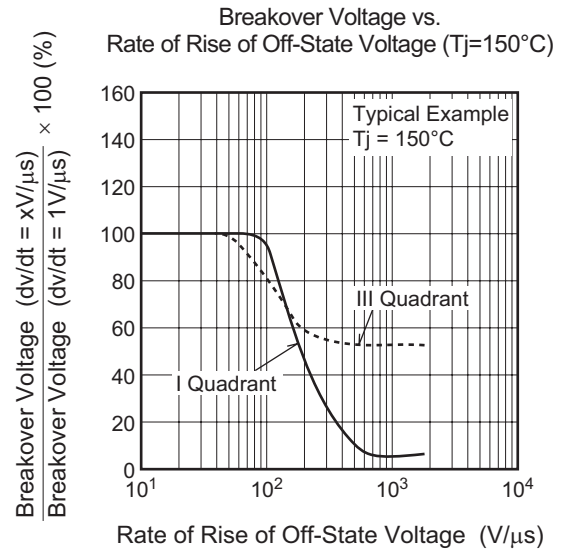
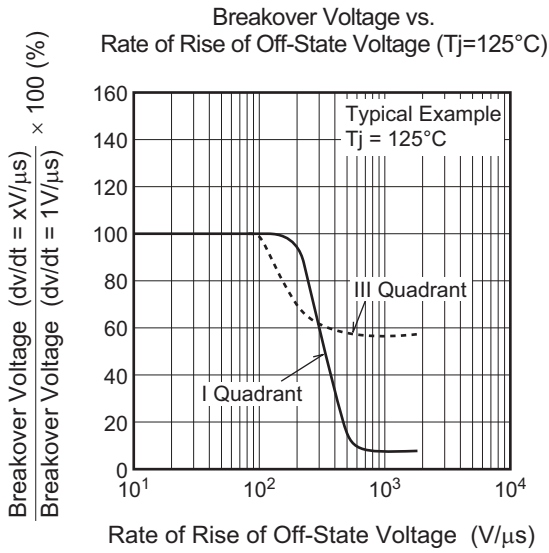


Latching Current vs. Junction Temperature

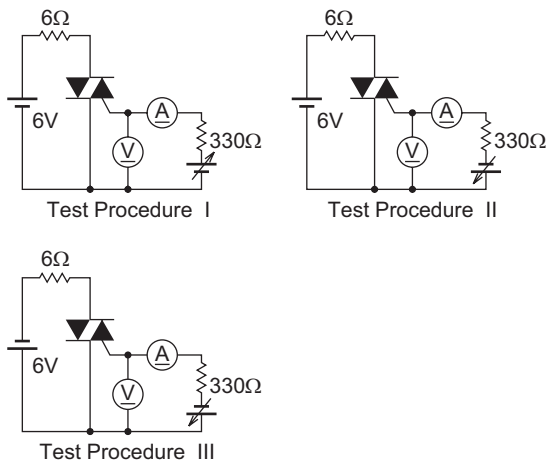


Breakover Voltage vs. Junction Temperature

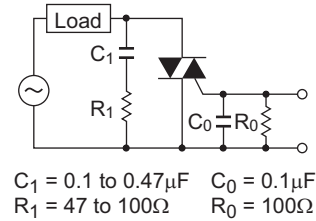




Gate Trigger Characteristics Test Circuits



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	TMP3	0.32g	

The drawing shows three views of the package:

- Top View:** Overall width is 6.6 mm. The main body width is 5.3 ± 0.2 mm. The distance between the two leads is 2.3 ± 0.2 mm. The lead width is 0.76 ± 0.2 mm. The lead thickness is 1 mm. The lead length is 2.5 Min to 10.4 Max mm. The distance from the lead tip to the main body edge is 1 ± 0.2 mm.
- Side View:** The package height is 2.3 mm. The lead height is 0.5 ± 0.2 mm. The lead thickness is 0.1 ± 0.1 mm. The lead length is 1.4 ± 0.2 mm. The distance from the lead tip to the main body edge is 0.5 ± 0.2 mm.
- Bottom View:** Shows the lead thickness of 1 mm and the distance between leads of 2.3 ± 0.2 mm.

Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR4AS-16LH#B00	Tube	75 pcs.	
BCR4AS-16LH-1#B00	Tube	75 pcs.	IGT item1
BCR4AS-16LH-T13#B00	Embossed Tape	3000 pcs.	Taping direction "T1"
BCR4AS-16LH-1T13#B00	Embossed Tape	3000 pcs.	Taping direction "T1", IGT item1

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

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