

BCR4AS-16LH

800V - 4A - Triac

Medium Power Use

R07DS0331EJ0101

Rev.1.01

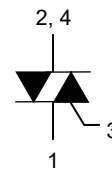
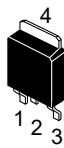
May. 10, 2019

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)
- T_j : 150 °C
- High Commutation
- 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

Application

Small motor control, heater control, and other general purpose AC control applications.

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		16	
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, $T_c = 129^{\circ}C$ ^{Note3}
Surge on-state current	I_{TSM}	30	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	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	

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 fall 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	

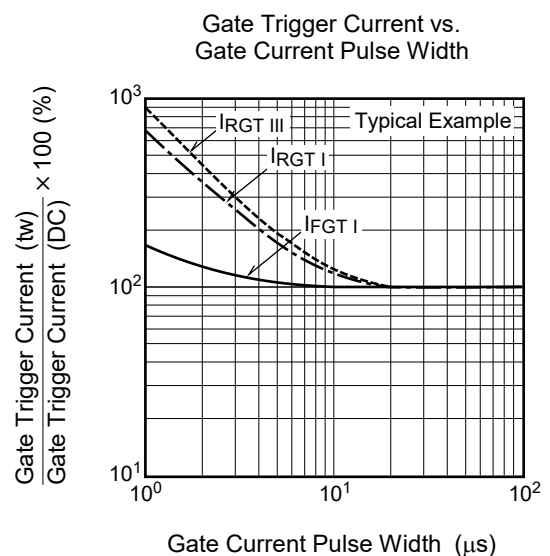
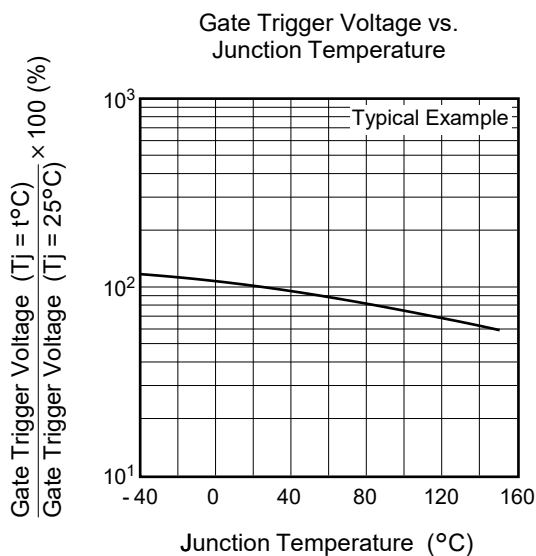
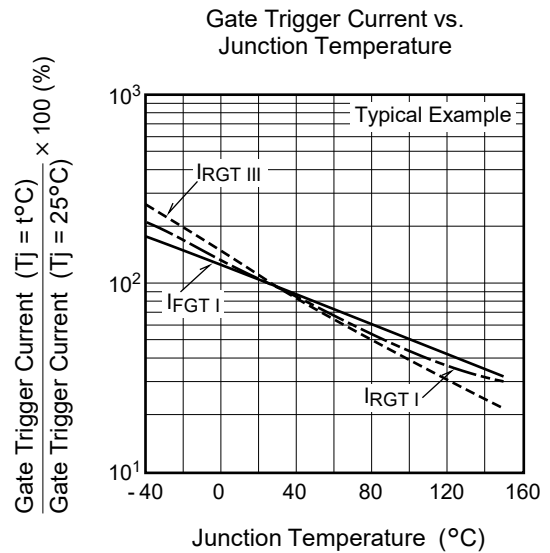
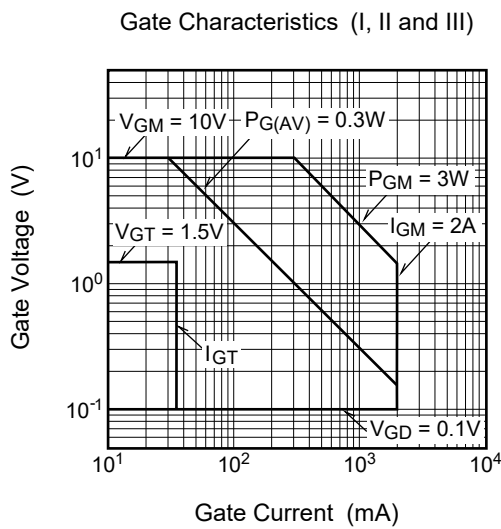
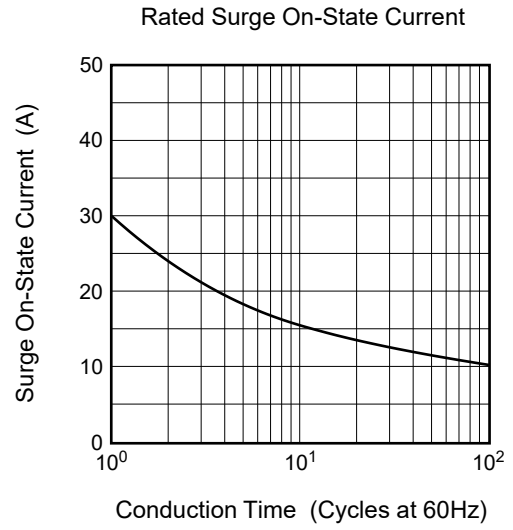
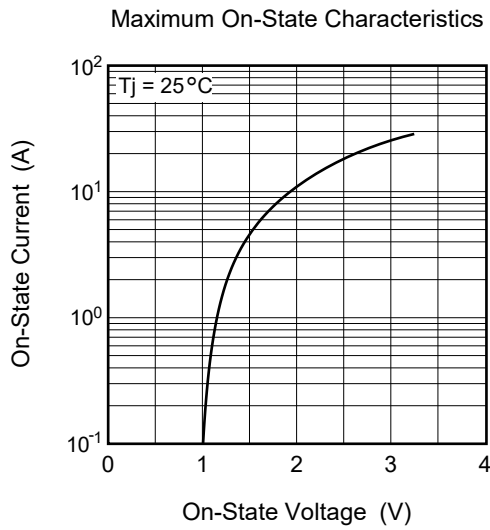
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

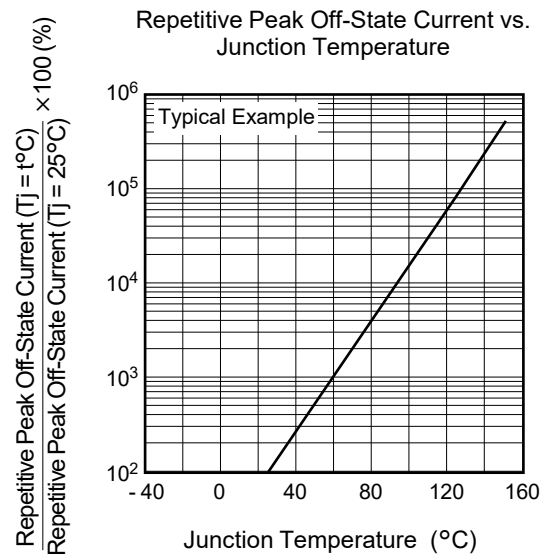
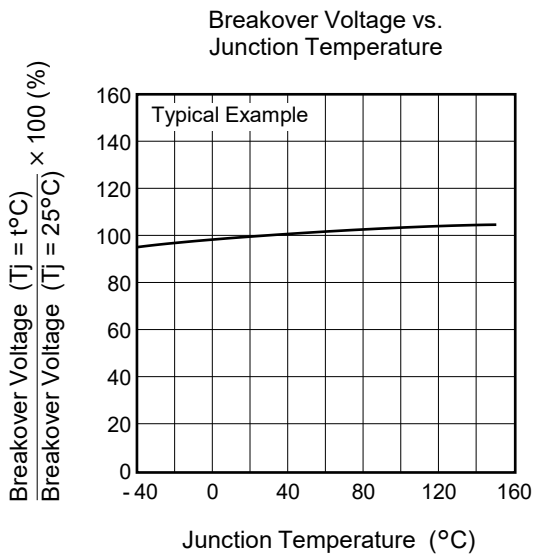
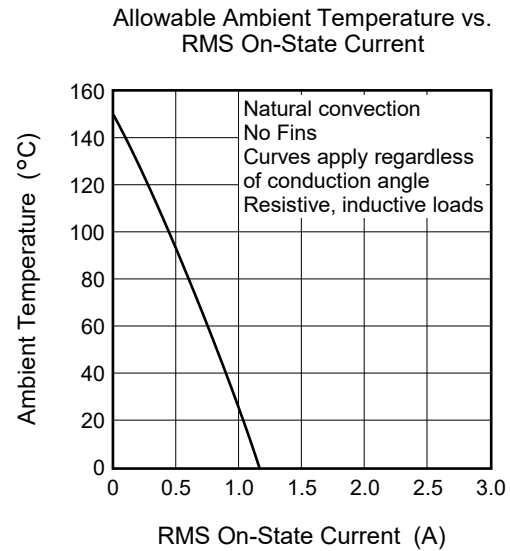
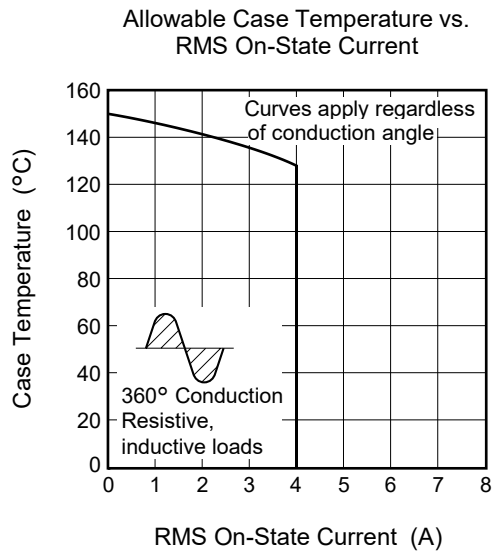
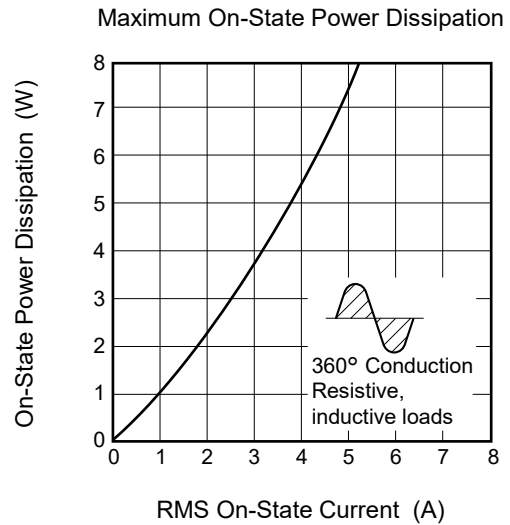
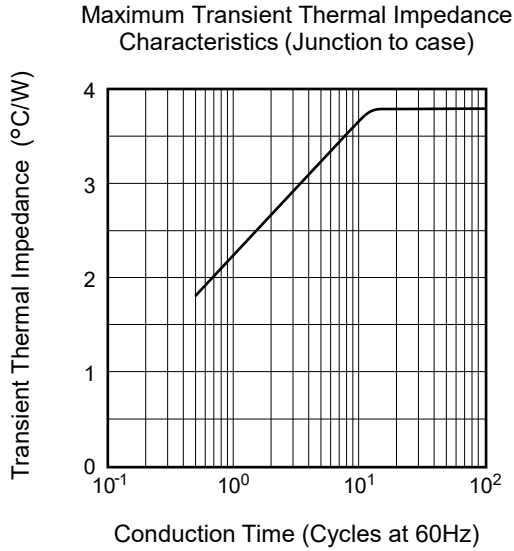
3. Case temperature is measured on the T₂ tab.

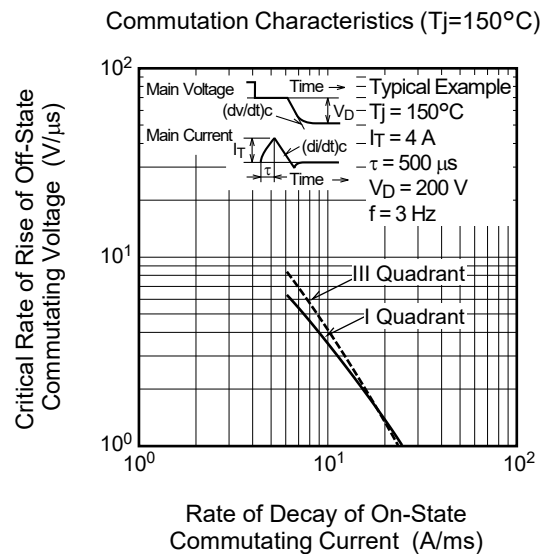
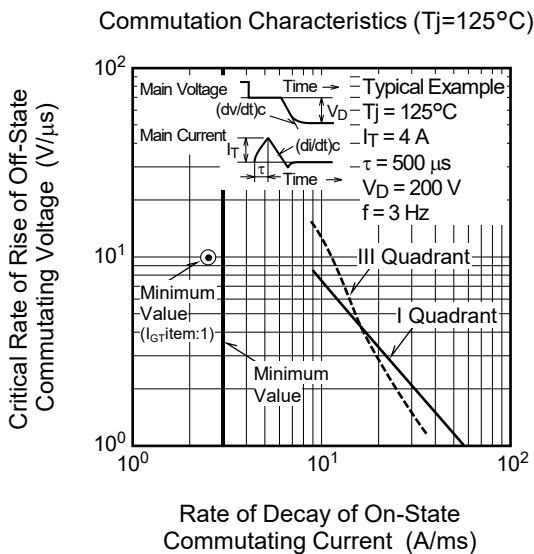
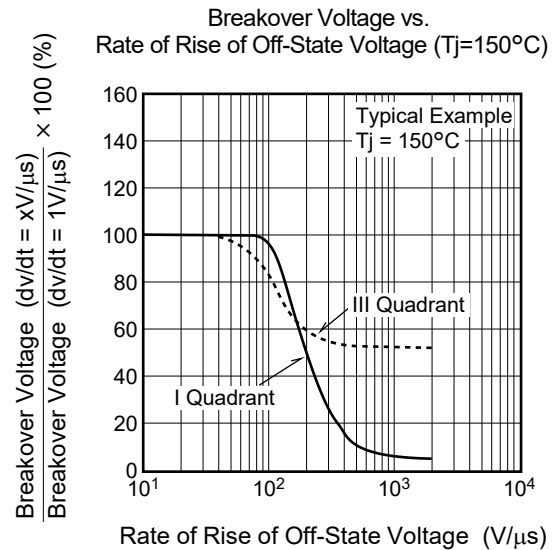
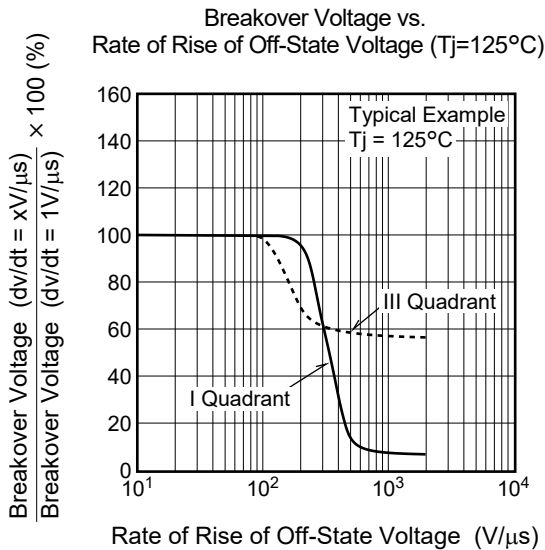
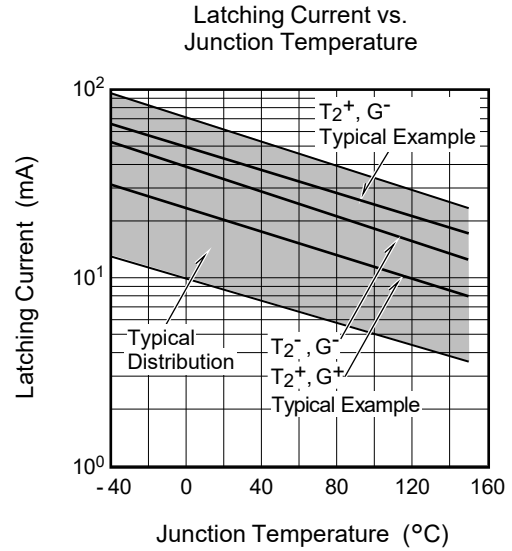
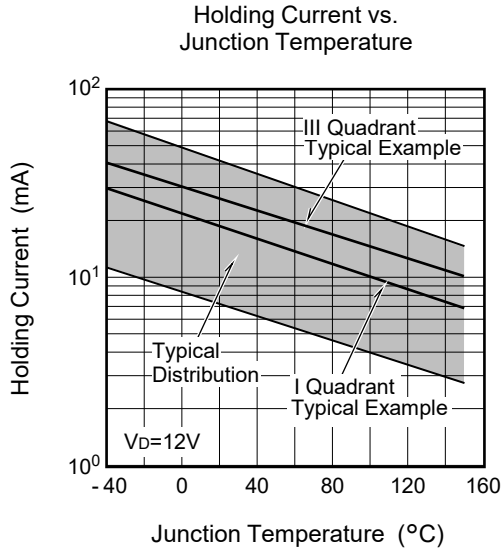
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T _j = 125°C 2. Peak off-state voltage V _D = 400 V 3. 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

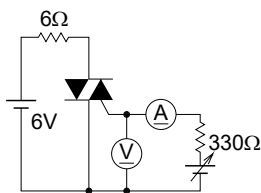




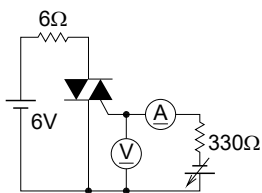


Gate Trigger Characteristics Test Circuits

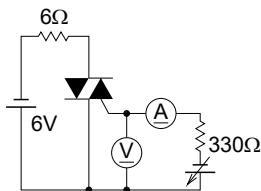
Recommended peripheral components for Triac



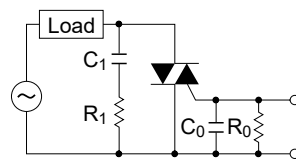
Test Procedure I



Test Procedure II



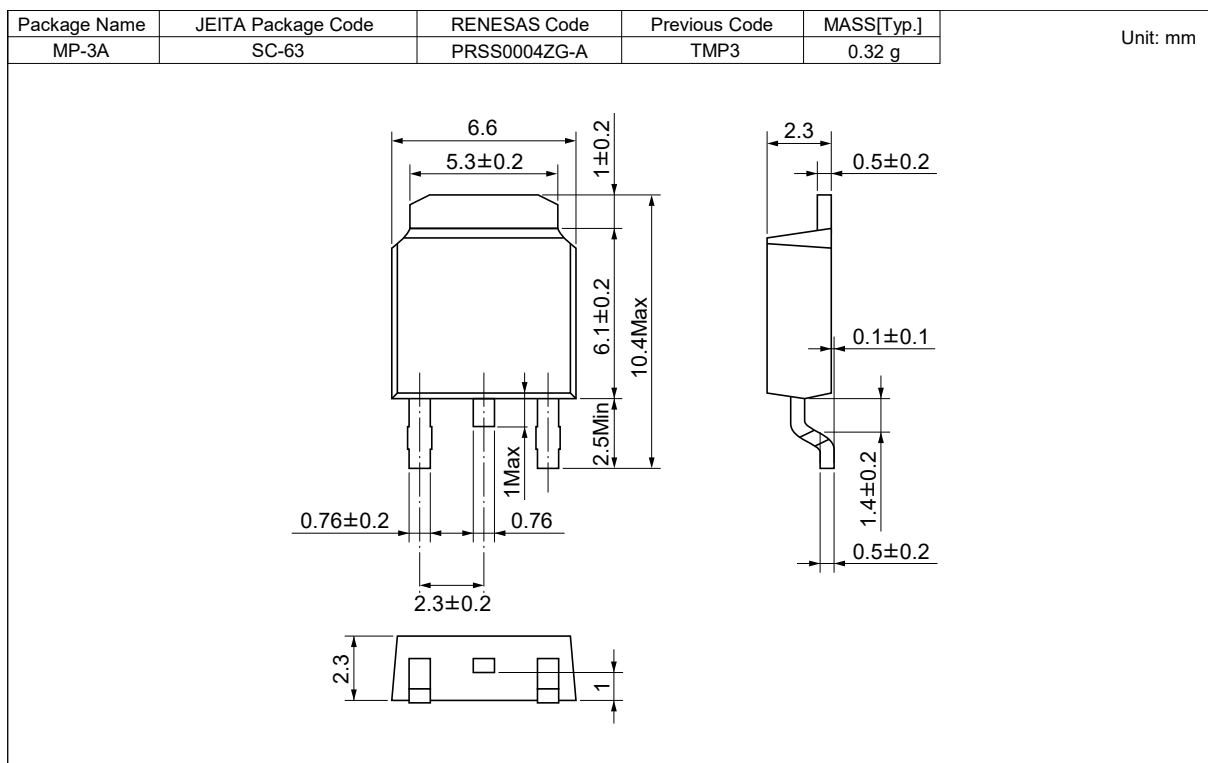
Test Procedure III



$C_1 = 0.1 \text{ to } 0.47 \mu\text{F}$ $C_0 = 0.1 \mu\text{F}$
 $R_1 = 47 \text{ to } 100\Omega$ $R_0 = 100\Omega$

Package Dimensions

Package Name: MP-3A



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark
BCR4AS-16LHT13#B00	MP-3A	Embossed tape	3000 pcs.	
BCR4AS16LH1T13#B00	MP-3A	Embossed tape	3000 pcs.	IGT item:1
BCR4AS-16LH#B00	MP-3A	Tube	75 pcs.	Tube packing is to be abolished.
BCR4AS-16LH-1#B00	MP-3A	Tube	75 pcs.	Tube packing is to be abolished. IGT item:1

Note: 5. Please confirm the specification about the shipping in detail.

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Renesas Electronics Corporation
TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061, Japan

Renesas Electronics America Inc.
1001 Murphy Ranch Road, Milpitas, CA 95035, U.S.A.
Tel: +1-408-432-8888, Fax: +1-408-434-5351

Renesas Electronics Canada Limited
9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3
Tel: +1-905-237-2004

Renesas Electronics Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K
Tel: +44-1628-651-700

Renesas Electronics Europe GmbH
Arcadiastrasse 10, 40472 Düsseldorf, Germany
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.
Room 1709 Quantum Plaza, No.27 ZhichunLu, Haidian District, Beijing, 100191 P. R. China
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.
Unit 301, Tower A, Central Towers, 555 Langao Road, Putuo District, Shanghai, 200333 P. R. China
Tel: +86-21-2226-0888, Fax: +86-21-2226-0999

Renesas Electronics Hong Kong Limited
Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong
Tel: +852-2265-6688, Fax: +852 2886-9022

Renesas Electronics Taiwan Co., Ltd.
13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

Renesas Electronics Singapore Pte. Ltd.
80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre, Singapore 339949
Tel: +65-6213-0200, Fax: +65-6213-0300

Renesas Electronics Malaysia Sdn.Bhd.
Unit 1207, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

Renesas Electronics India Pvt. Ltd.
No.777C, 100 Feet Road, HAL 2nd Stage, Indiranagar, Bangalore 560 038, India
Tel: +91-80-67208700, Fax: +91-80-67208777

Renesas Electronics Korea Co., Ltd.
17F, KAMCO Yangjae Tower, 262, Gangnam-daero, Gangnam-gu, Seoul, 06265 Korea
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Телефон: 8 (812) 309-75-97 (многоканальный)

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Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А