

BCR1AM-12A

600V - 1A - Triac

R07DS0177EJ0700

Low Power Use


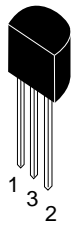
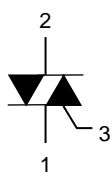
Rev.7.00

Feb. 22, 2022

Features

- $I_T (RMS)$: 1 A
- V_{DRM} : 600 V
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$: 7 mA
- T_j : 125 °C
- Planar Passivation Type
- RoHS Compliant
- Halogen-free (PRSS0003DJ-A)
- Completely Pb-free (PRSS0003DJ-A)

Outline

RENESAS Package code: PRSS0003EA-A (Package name: TO-92*) Ordering code: #C01 	PRSS0003DJ-A (Package name: TO-92) #BD0 		1. T_1 Terminal 2. T_2 Terminal 3. Gate Terminal
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Application

Washing machine, electric fan, air cleaner, Solid State Relay and other general purpose AC control applications.

Maximum Ratings

Parameter	Symbol	Voltage class		Unit
		12		
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	600		V
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	720		V

Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_T (RMS)$	1.0	A	Commercial frequency, sine full wave 360° conduction, $T_c = 56^\circ C$ ^{Note3}
Surge on-state current	I_{TSM}	10	A	60 Hz 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 60 Hz, 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}	0.5	A	
Junction Temperature	T_j	-40 to +125	°C	
Storage temperature	T_{stg}	-40 to +125	°C	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	0.5	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.6	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 1.5\text{ A}$, 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}	—	—	7	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	7	
	III	I_{RGTIII}	—	—	7	
Gate non-trigger voltage	V_{GD}	0.1	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-c)}$	—	—	50	$^\circ\text{C/W}$	Junction to case ^{Note3}
Critical-rate of rise of off-state commutating voltage ^{Note4}	$(dv/dt)_c$	2	—	—	$\text{V}/\mu\text{s}$	$T_j = 125^\circ\text{C}$

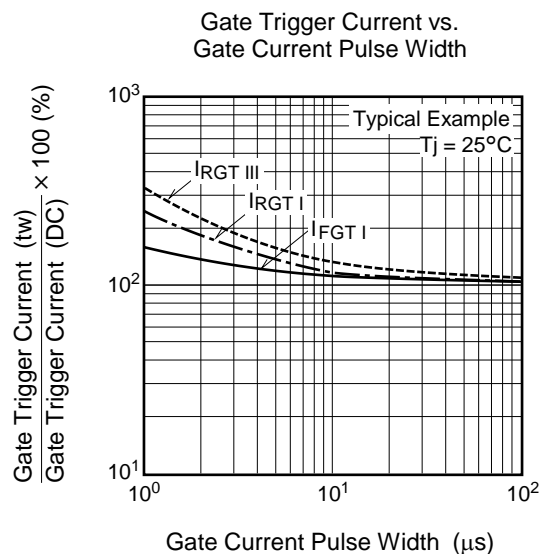
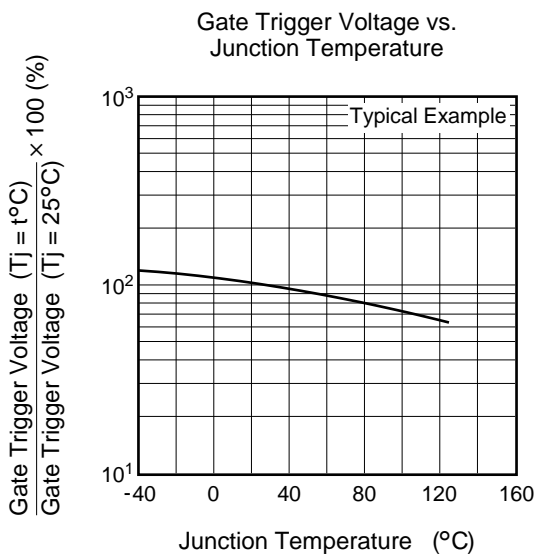
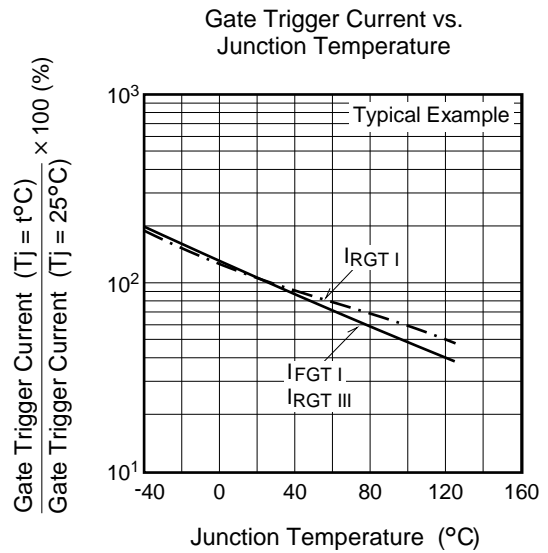
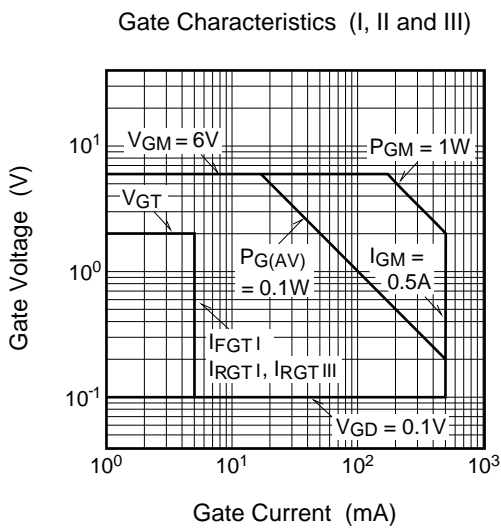
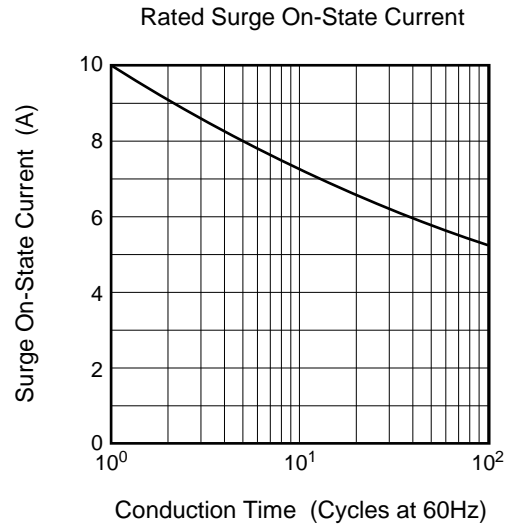
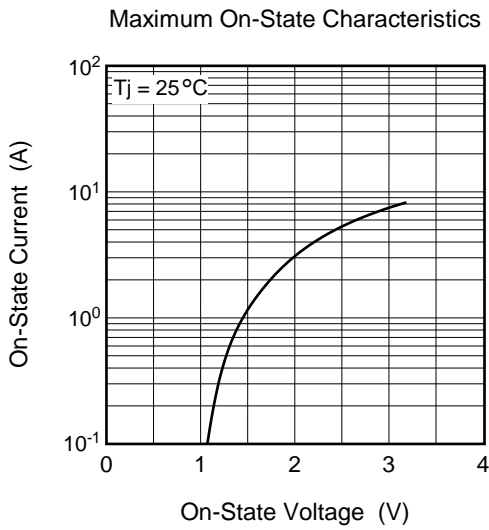
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

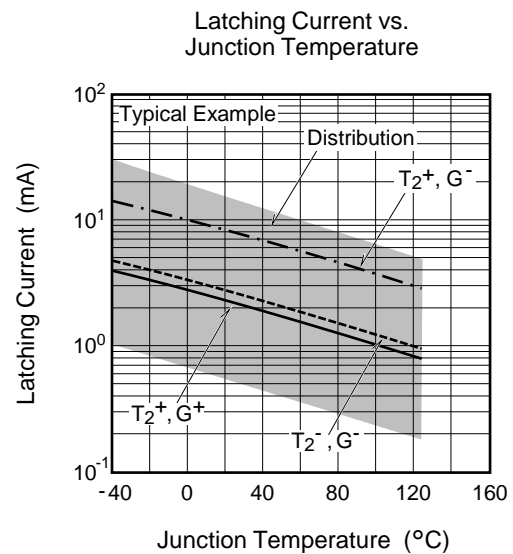
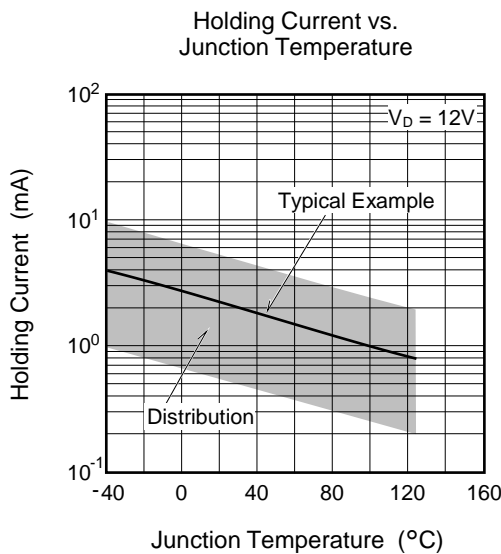
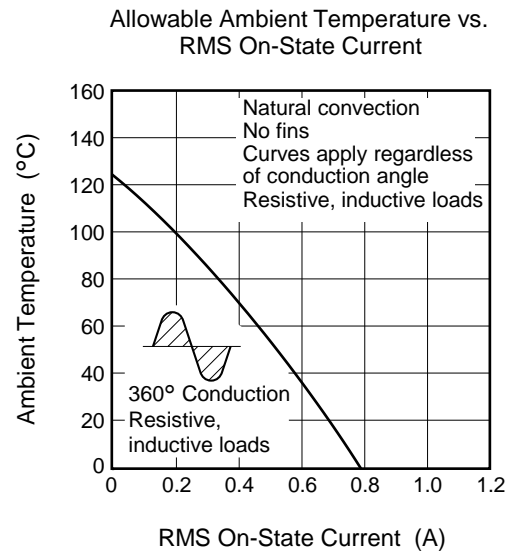
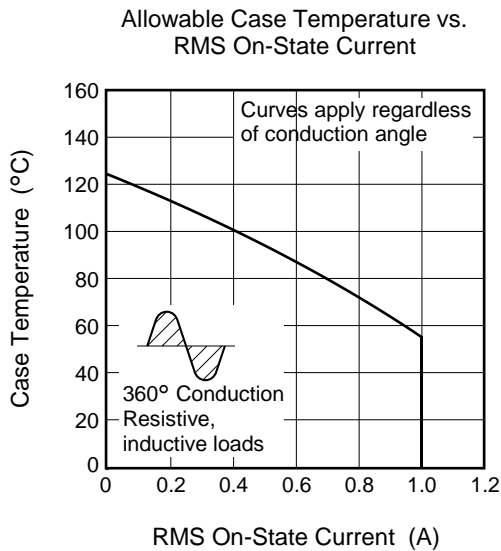
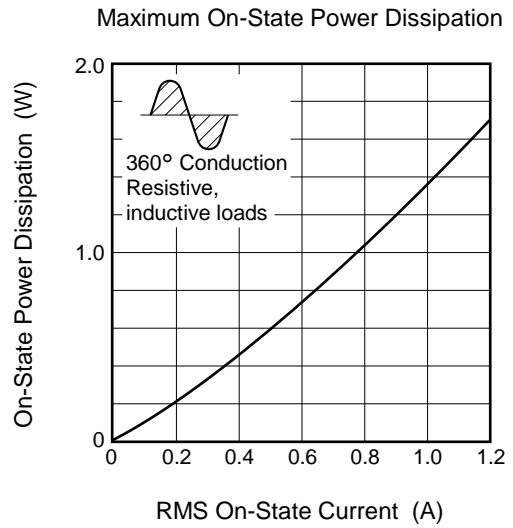
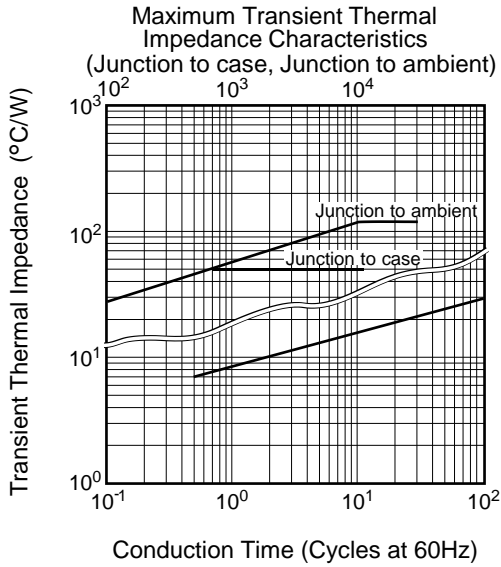
3. Case temperature is measured at the T_2 terminal 1.5 mm away from the molded case.

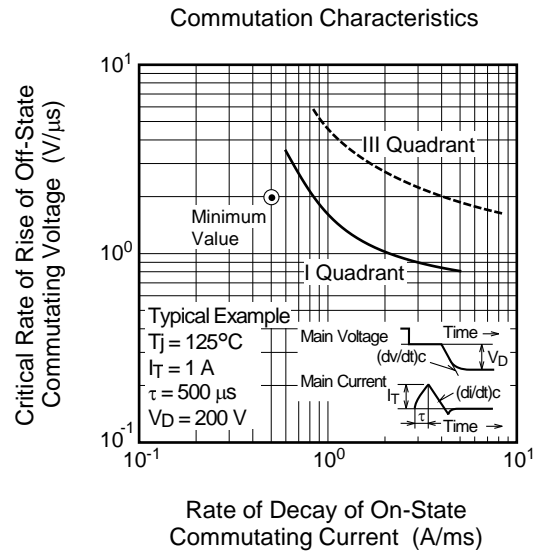
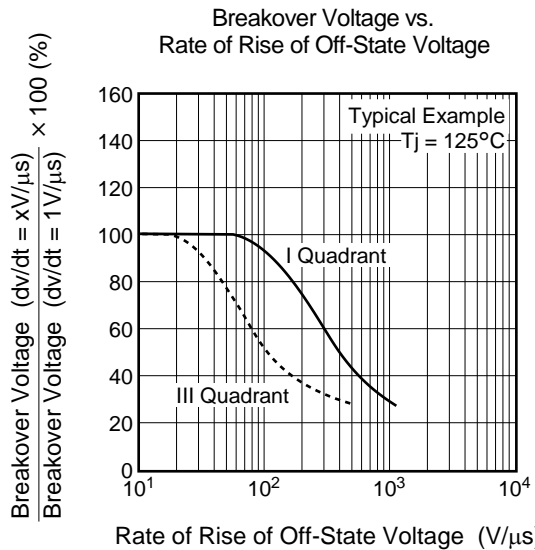
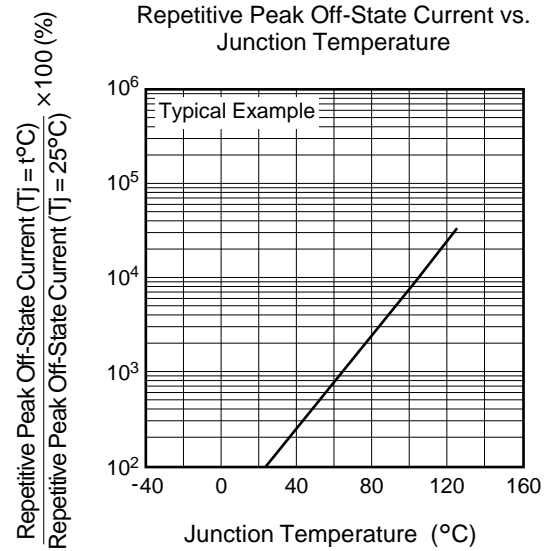
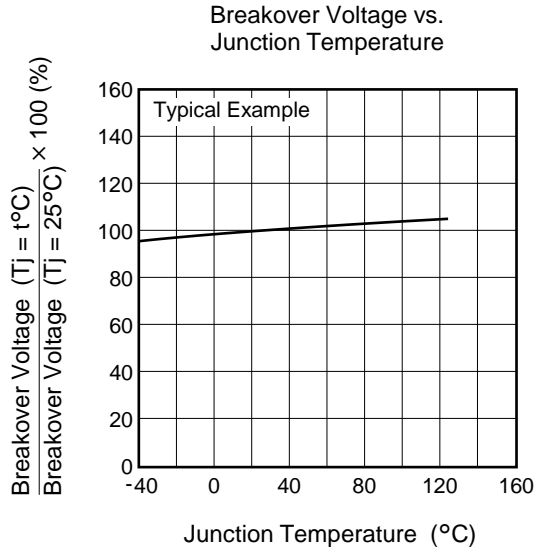
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

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 $(di/dt)_c = -0.5\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

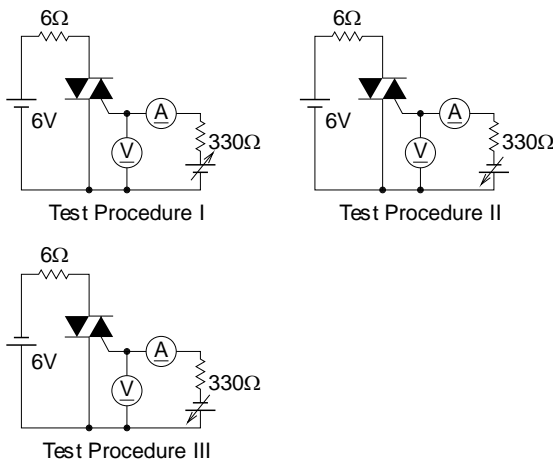
Performance Curves





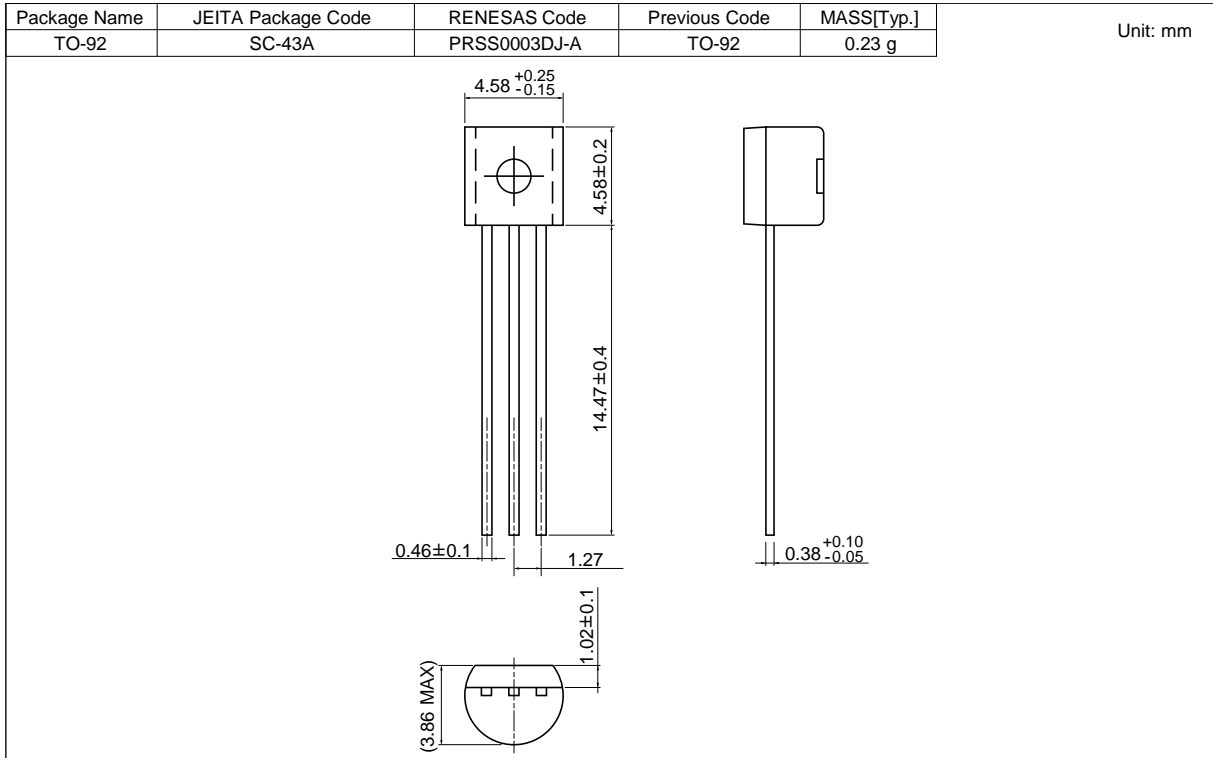


Gate Trigger Characteristics Test Circuits

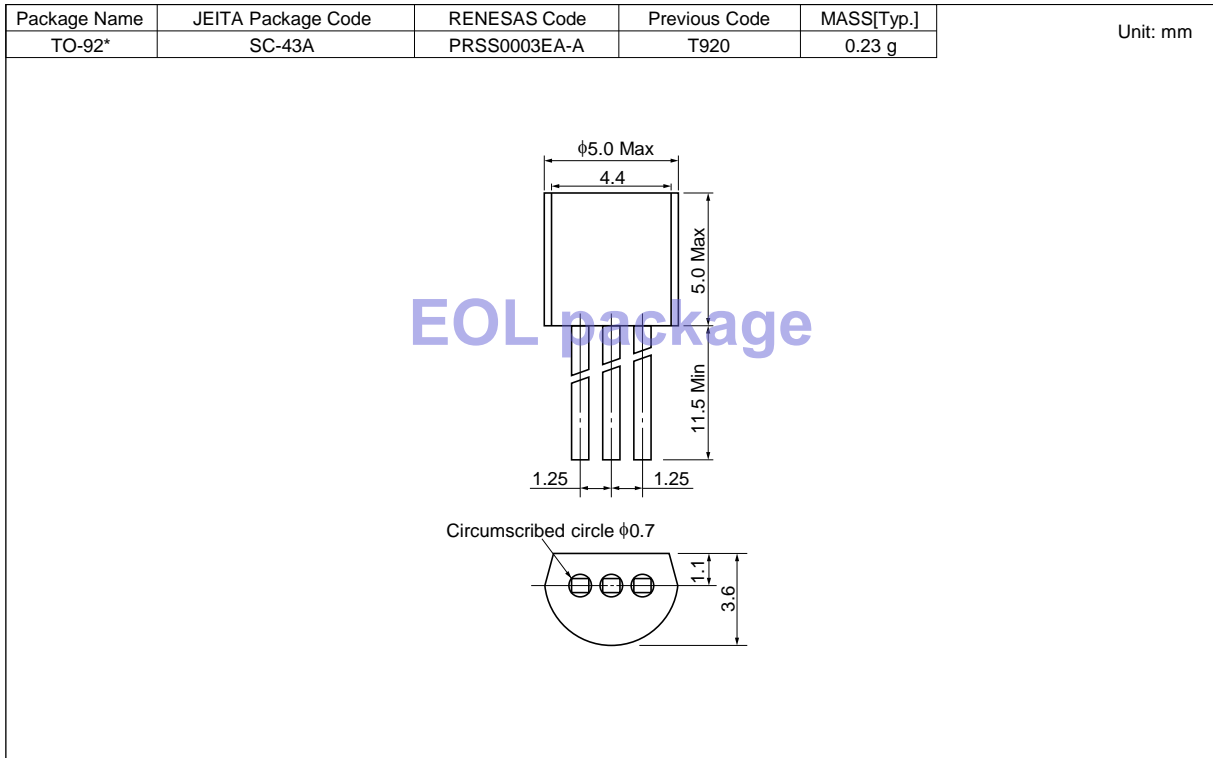


Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #C01 <Obsolete>



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark	Status
BCR1AM-12A#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type	Active
BCR1AM-12A-A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form	
BCR1AM-12A-TB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form	
BCR1AM-12A#C01	TO-92*	Plastic Bag	500 pcs.	Straight type	Obsolete
BCR1AM-12A-A6#C01	TO-92*	Plastic Bag	500 pcs.	A6 Lead form	
BCR1AM-12A-TB#C01	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form	

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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