

# BCR1AM-8P

400V - 1A - Triac

Low Power Use

R07DS0178EJ0300


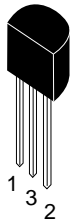
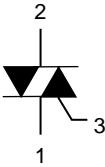
Rev.3.00

Feb. 22, 2022

## Features

- $I_T (RMS)$ : 1 A
- $V_{DRM}$ : 400 V
- $I_{FGT I}$ : 5 mA
- $I_{RGT I}$ ,  $I_{RGT III}$ : 5 mA or 3 mA ( $I_{GT}$  item: 1)
- $I_{FGT III}$ : 10 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*)	PRSS0003DJ-A (Package name: TO-92)	
Ordering code: #B00	#BD0	
		
EOL package		1. $T_1$ Terminal 2. $T_2$ Terminal 3. Gate Terminal

## Application

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

## Maximum Ratings

Parameter	Symbol	Voltage class		Unit
		8		
Repetitive peak off-state voltage <sup>Note1</sup>	$V_{DRM}$	400		V
Non-repetitive peak off-state voltage <sup>Note1</sup>	$V_{DSM}$	500		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, $T_c = 56^\circ C$ <sup>Note3</sup>
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 <sup>2</sup> 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 <sup>Note2</sup>	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	
	IV	$V_{FGTIII}$	—	—	2.0	
Gate trigger current <sup>Note2</sup>	I	$I_{FGTI}$	—	—	5	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $R_L = 6\ \Omega$ , $R_G = 330\ \Omega$
	II	$I_{RGTI}$	—	—	5 <sup>Note5</sup>	
	III	$I_{RGTIII}$	—	—	5 <sup>Note5</sup>	
	IV	$I_{FGTIII}$	—	—	10	
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 <sup>Note3</sup>
Critical-rate of rise of off-state commutating voltage <sup>Note4</sup>	$(dv/dt)_c$	2	—	—	$\text{V}/\mu\text{s}$	$T_j = 125^\circ\text{C}$

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

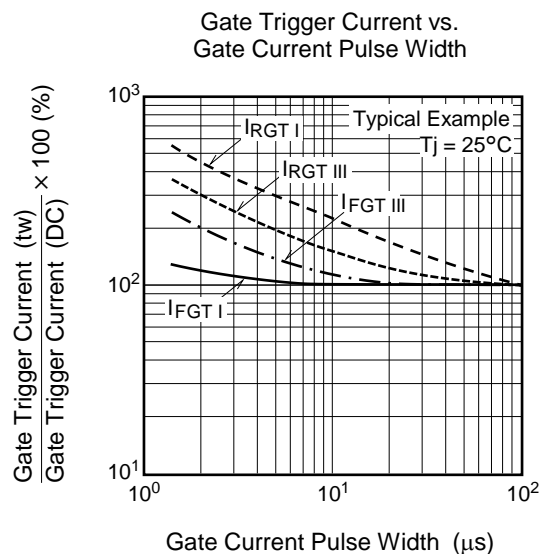
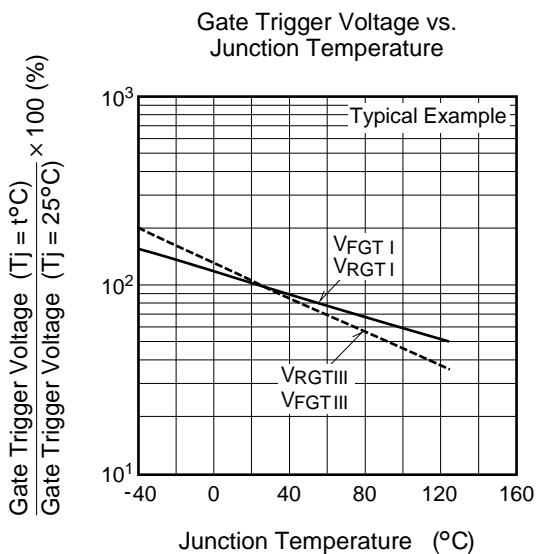
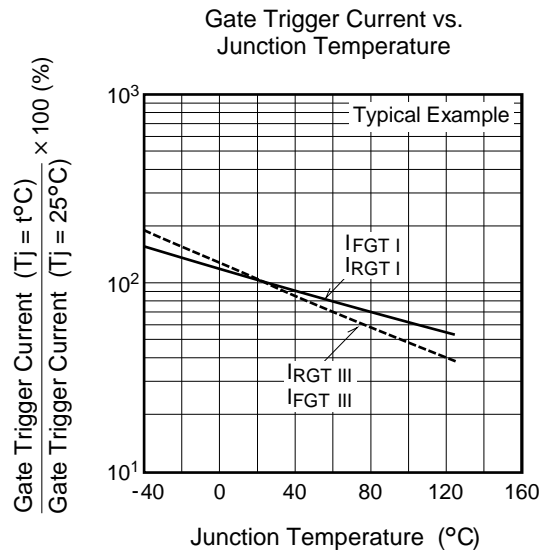
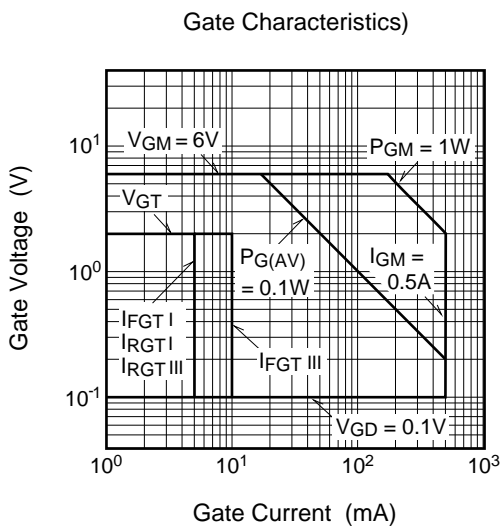
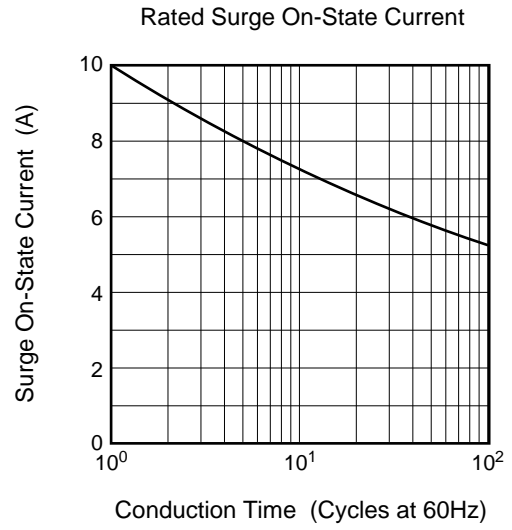
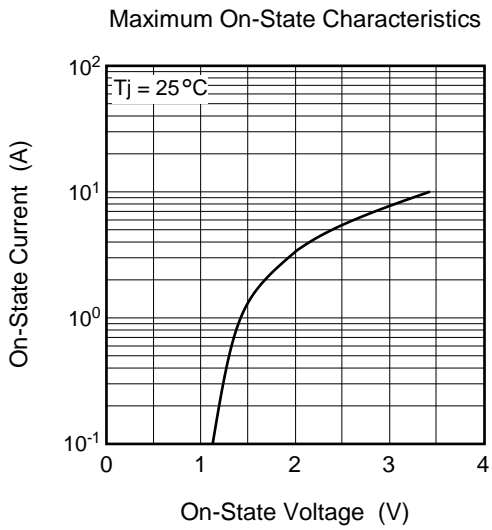
3. Case temperature is measured at the  $T_2$  terminal 1.5 mm away from the molded case.

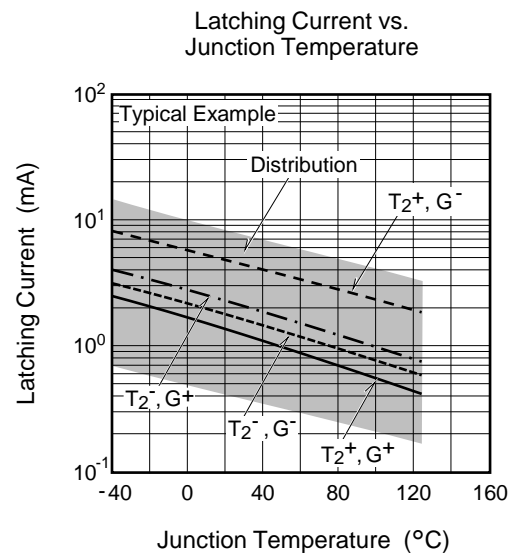
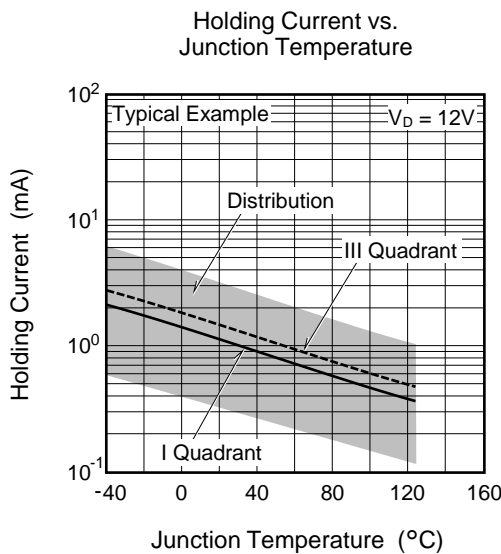
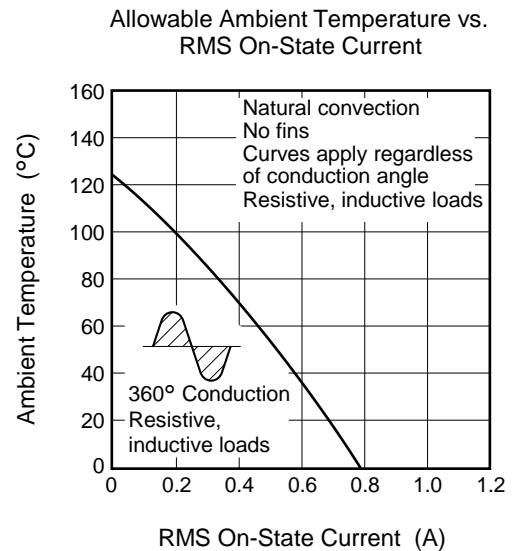
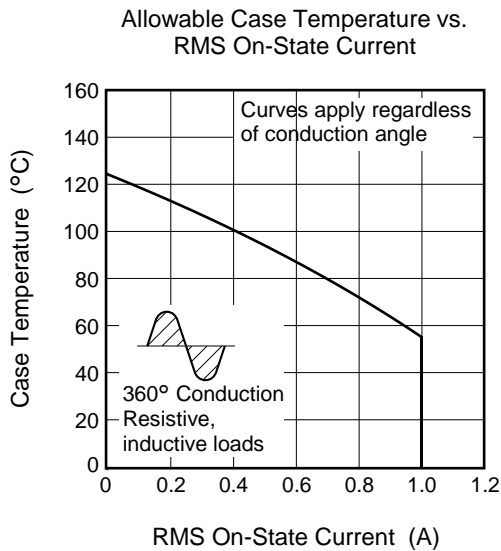
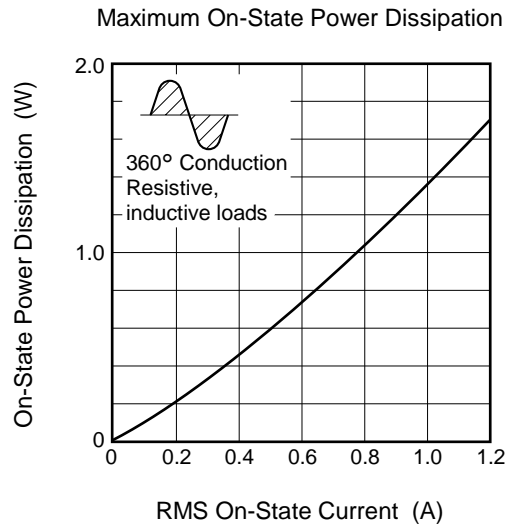
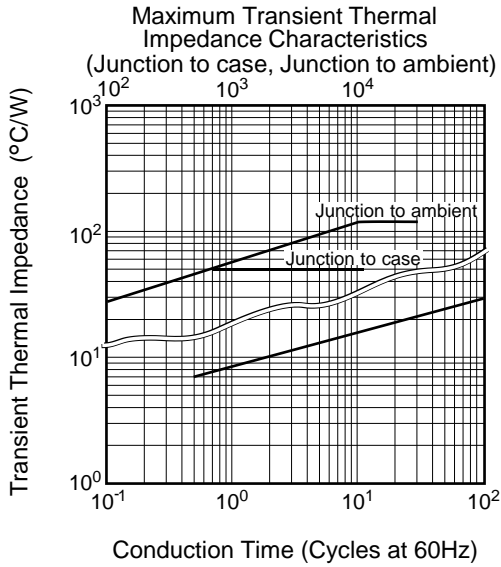
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

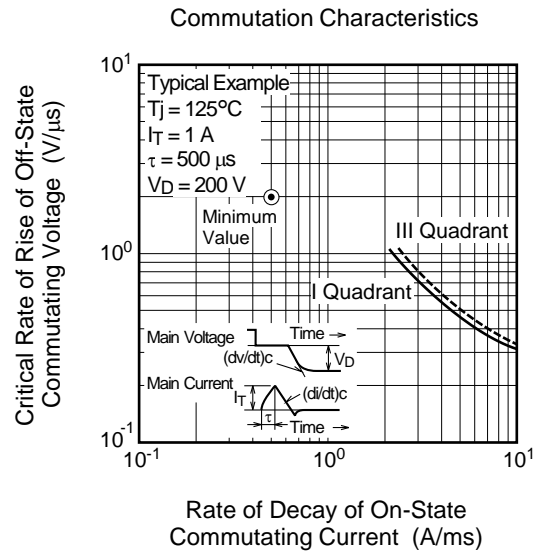
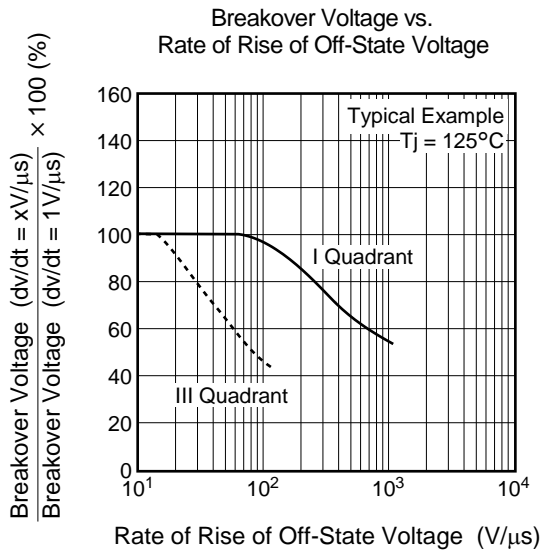
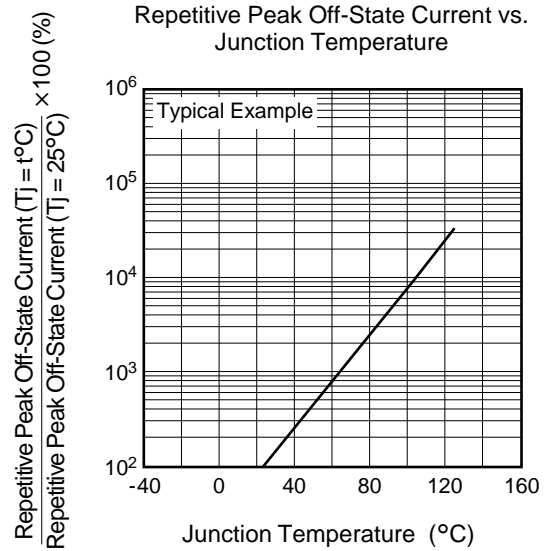
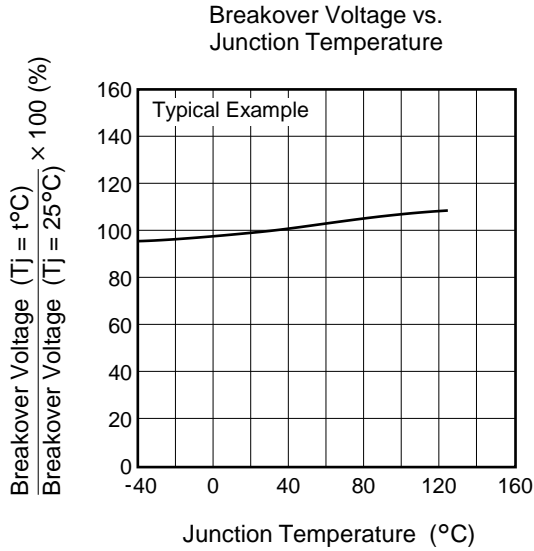
5. High sensitivity ( $I_{GT} \leq 3\text{ mA}$ ) is also available. ( $I_{GT}$  item:1)

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 $V_D = 400\text{ V}$	

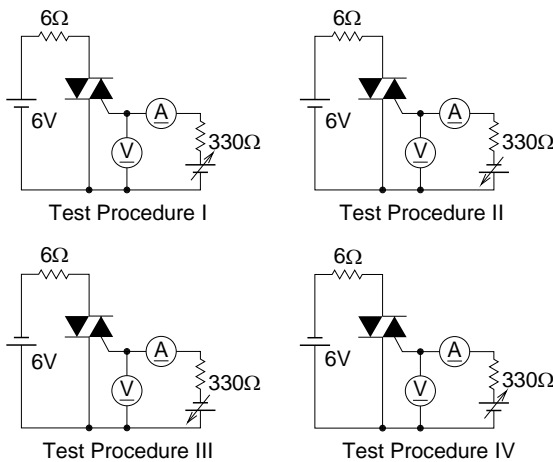
Performance Curves





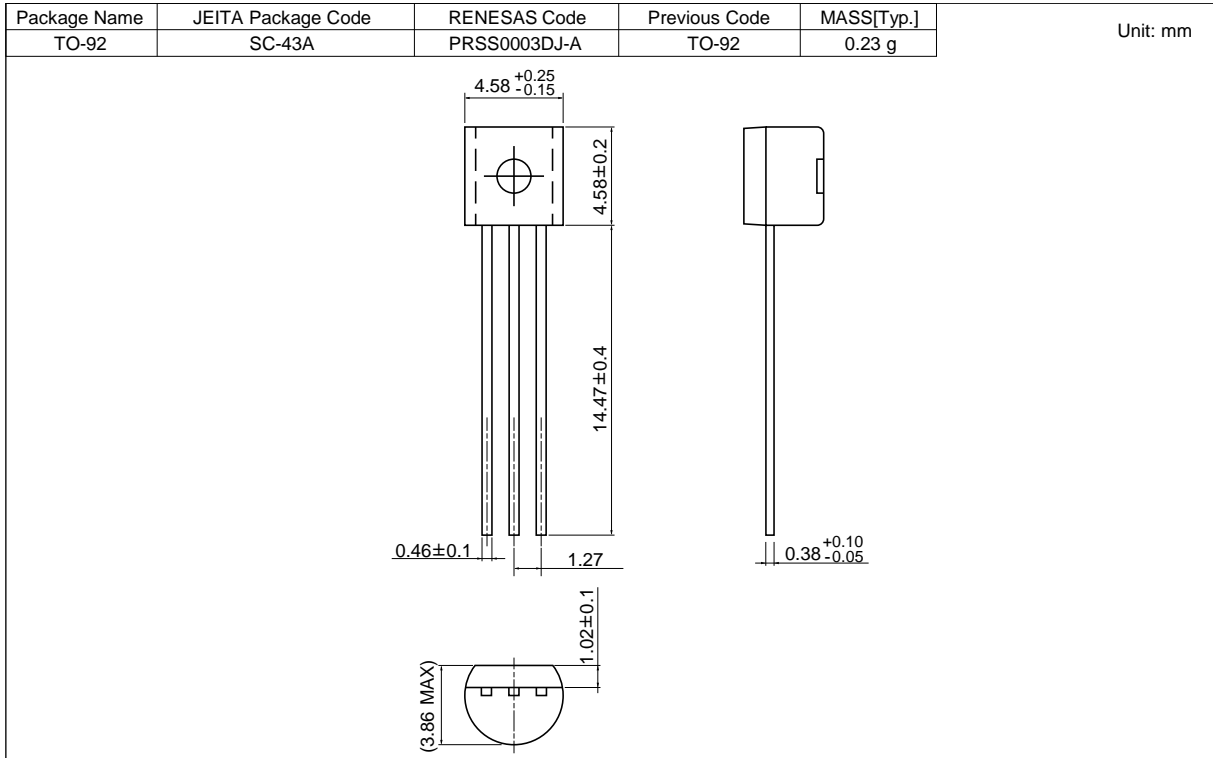


Gate Trigger Characteristics Test Circuits

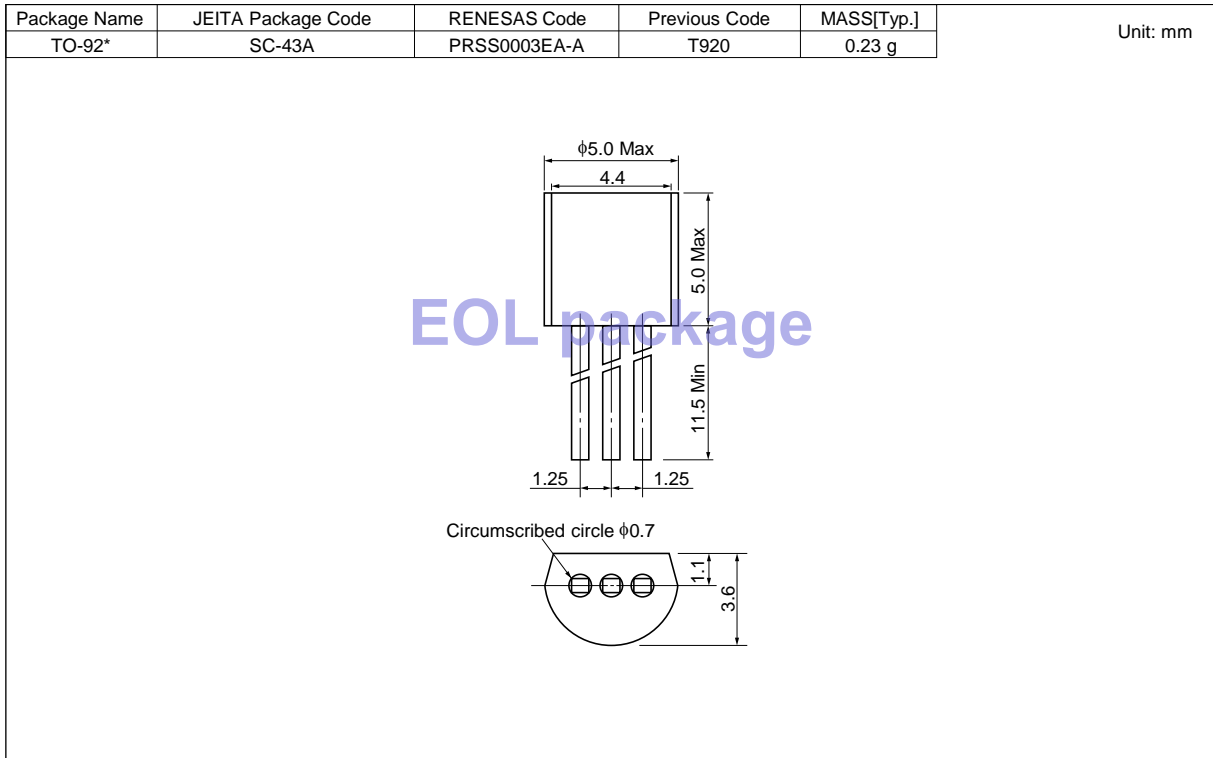


### Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #B00 <Obsolete>



## Ordering Information

Orderable Part Number	Package	Packing <sup>Note6</sup>	Quantity	Remark	Status
BCR1AM-8P#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type	Active
BCR1AM-8P-1#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type, I <sub>GT</sub> item:1	
BCR1AM-8P-A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form	
BCR1AM-8P-1A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form, I <sub>GT</sub> item:1	
BCR1AM-8P-TB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form	
BCR1AM-8P-1TB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item:1	
BCR1AM-8P#B00	TO-92*	Plastic Bag	500 pcs.	Straight type	Obsolete
BCR1AM-8P-1#B00	TO-92*	Plastic Bag	500 pcs.	Straight type, I <sub>GT</sub> item:1	
BCR1AM-8P-A6#B00	TO-92*	Plastic Bag	500 pcs.	A6 Lead form	
BCR1AM-8P-1A6#B00	TO-92*	Plastic Bag	500 pcs.	A6 Lead form, I <sub>GT</sub> item:1	
BCR1AM-8P-TB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form	
BCR1AM-8P-1TB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item:1	

Note: 6. Please confirm the specification about the shipping in detail.

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(Rev.4.0-1 November 2017)



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