

BCR08AM-12A

600V - 0.8A - Triac

Low Power Use

R07DS1421EJ0400

Rev.4.00

Feb. 22, 2022

Features

- I_T (RMS): 0.8 A
- V_{DRM} : 600 V
- I_{RGTI} , I_{RGTIII} : 5 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

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

Application

Electric fan, air cleaner, 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)	0.8	A	Commercial frequency, sine full wave 360° conduction, $T_c = 56^\circ\text{C}$
Surge on-state current	I_{TSM}	8	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	0.26	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}	—	—	1.0	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	2.0	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 1.2\text{ A}$, instantaneous measurement
Gate trigger voltage ^{Note2}	II	V_{RGTI}	—	—	2.0	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	III	V_{RGTIII}	—	—	2.0	
Gate trigger current ^{Note2}	II	I_{RGTI}	—	—	5	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	III	I_{RGTIII}	—	—	5	
Gate non-trigger voltage	V_{GD}	0.1	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-c)}$	—	—	60	$^\circ\text{C/W}$	Junction to case ^{Note3}
Critical-rate of rise of off-state commutating voltage ^{Note4}	$(dv/dt)_c$	0.5	—	—	$\text{V}/\mu\text{s}$	$T_j = 125^\circ\text{C}$

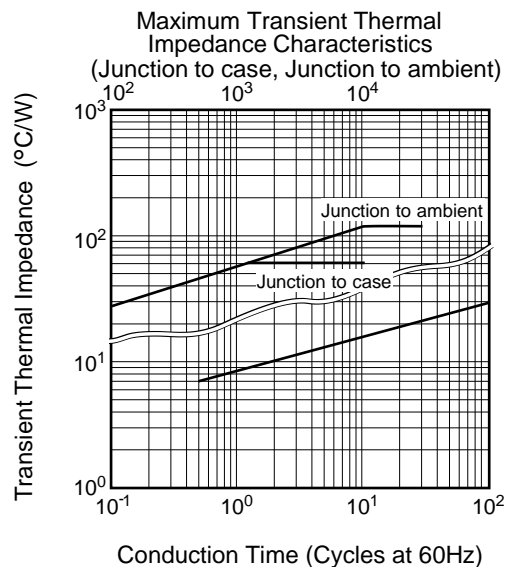
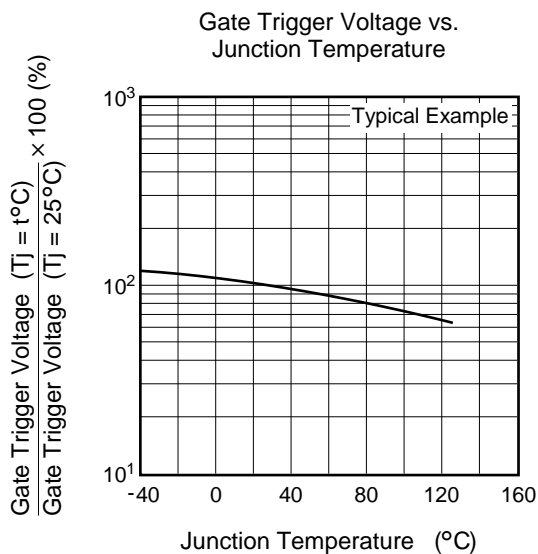
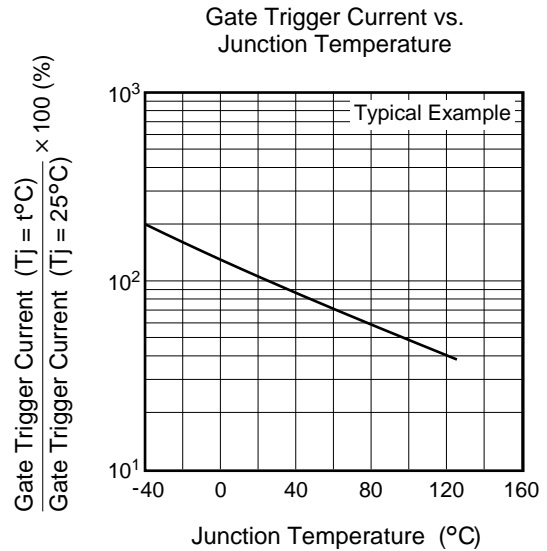
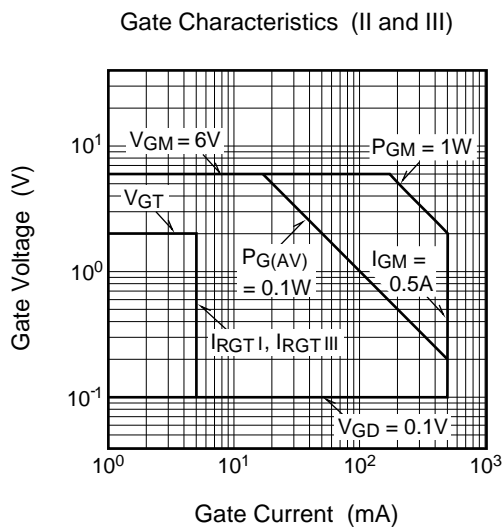
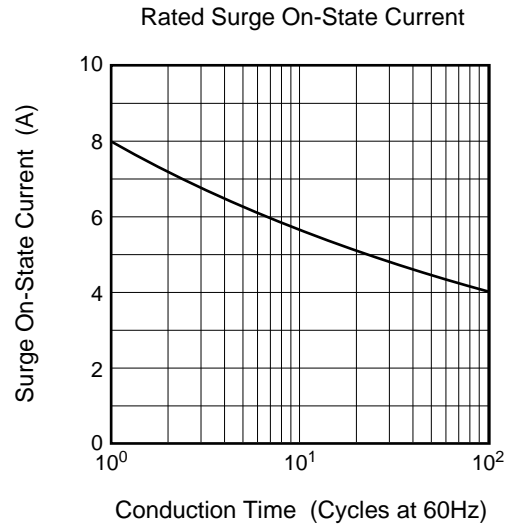
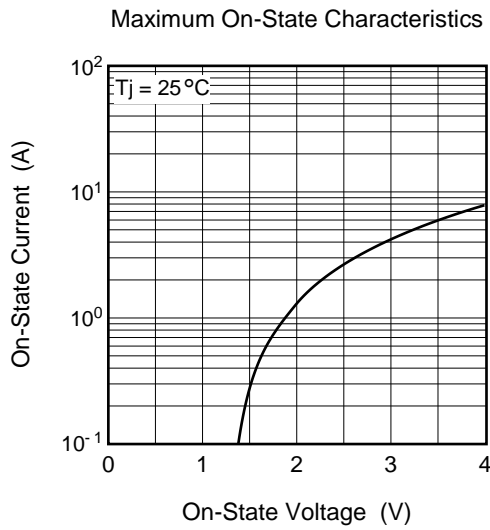
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

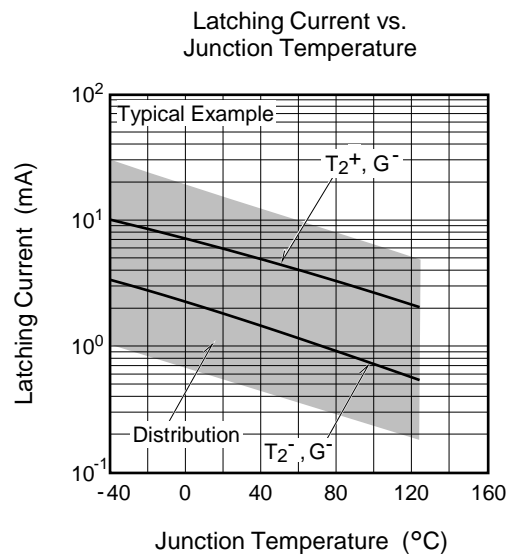
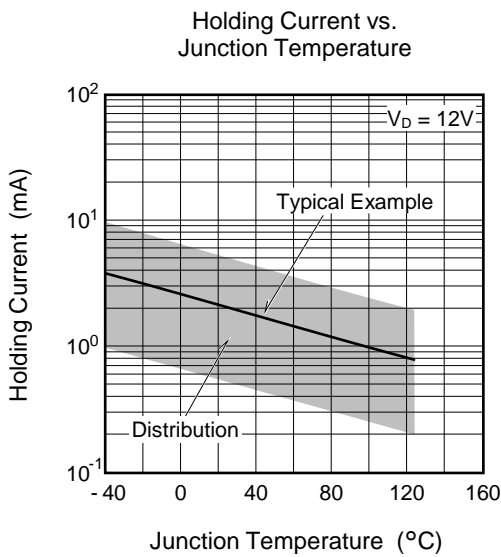
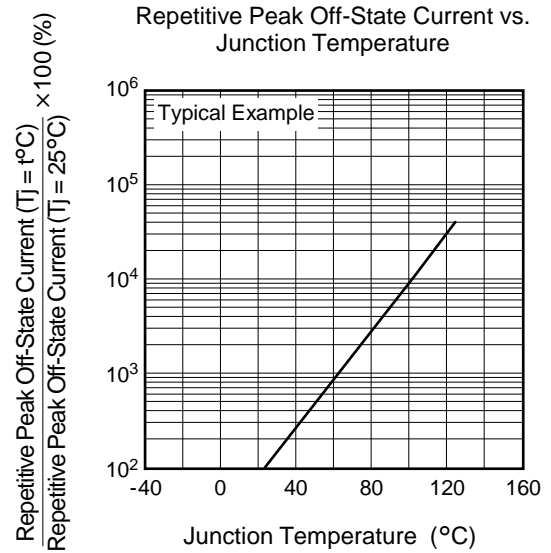
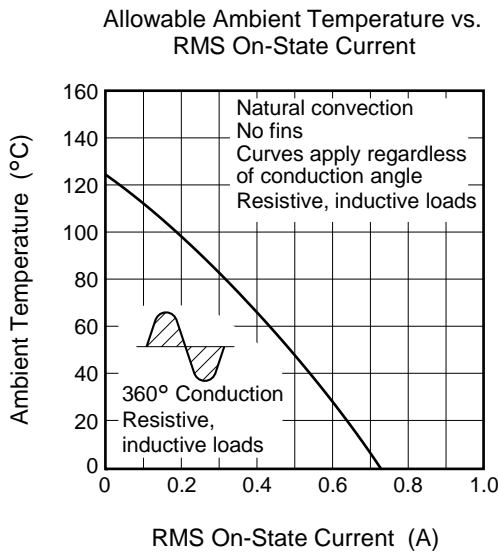
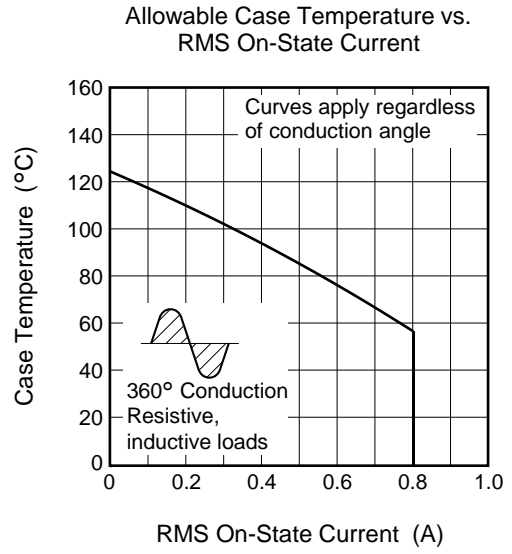
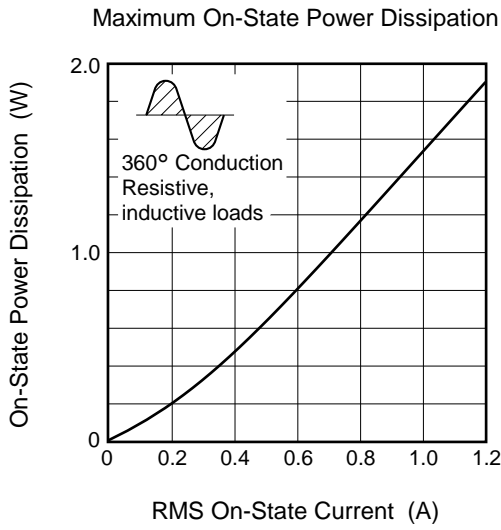
3. Case temperature is measured at the T_2 terminal 1.5 mm away from the molded case.

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

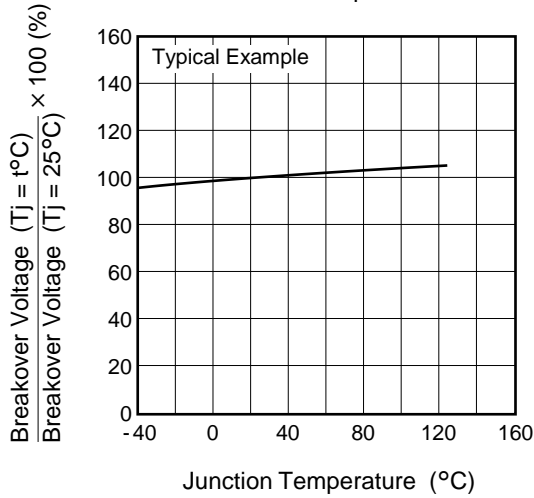
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -0.4\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

Performance Curves

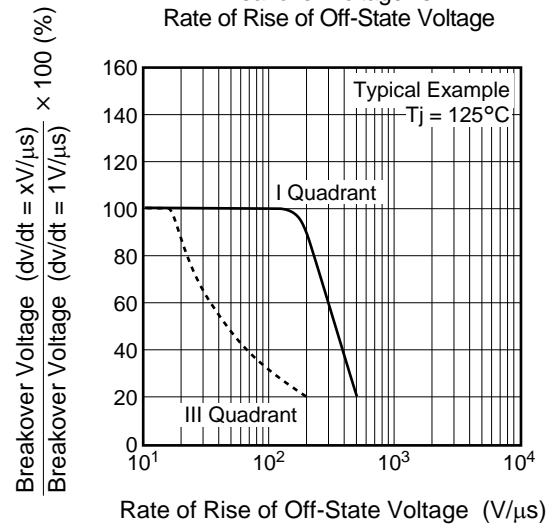




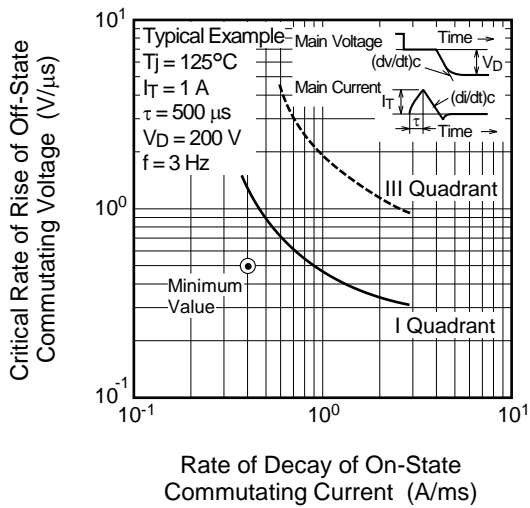
Breakover Voltage vs. Junction Temperature



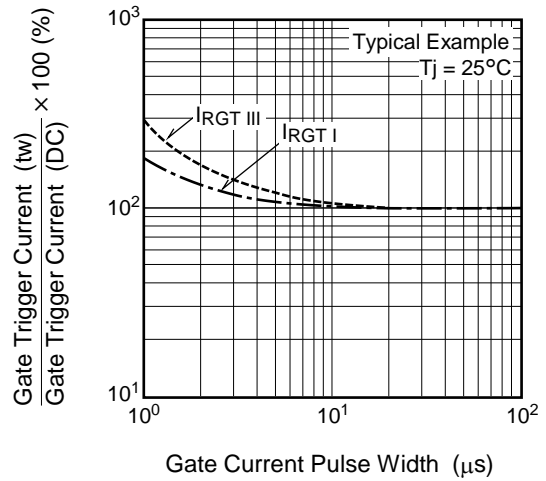
Breakover Voltage vs. Rate of Rise of Off-State Voltage



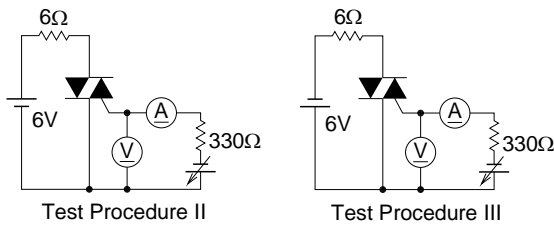
Commutation Characteristics



Gate Trigger Current vs. Gate Current Pulse Width

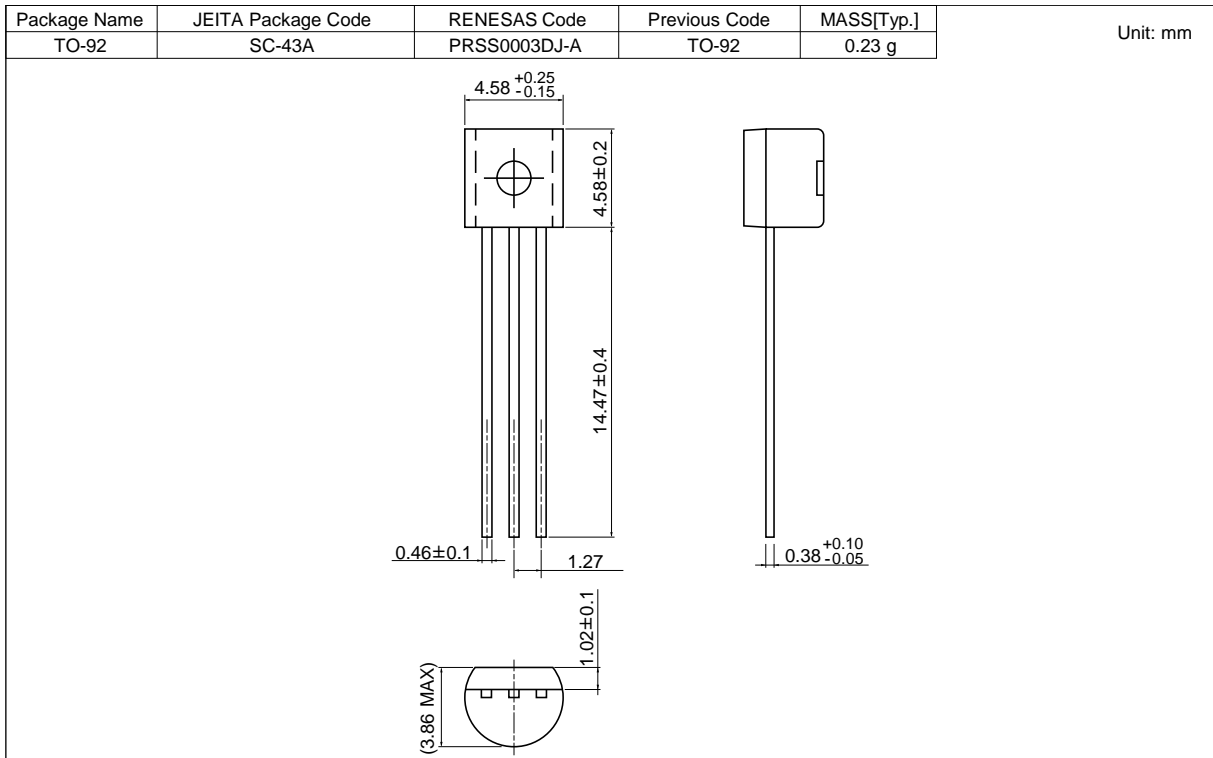


Gate Trigger Characteristics Test Circuits

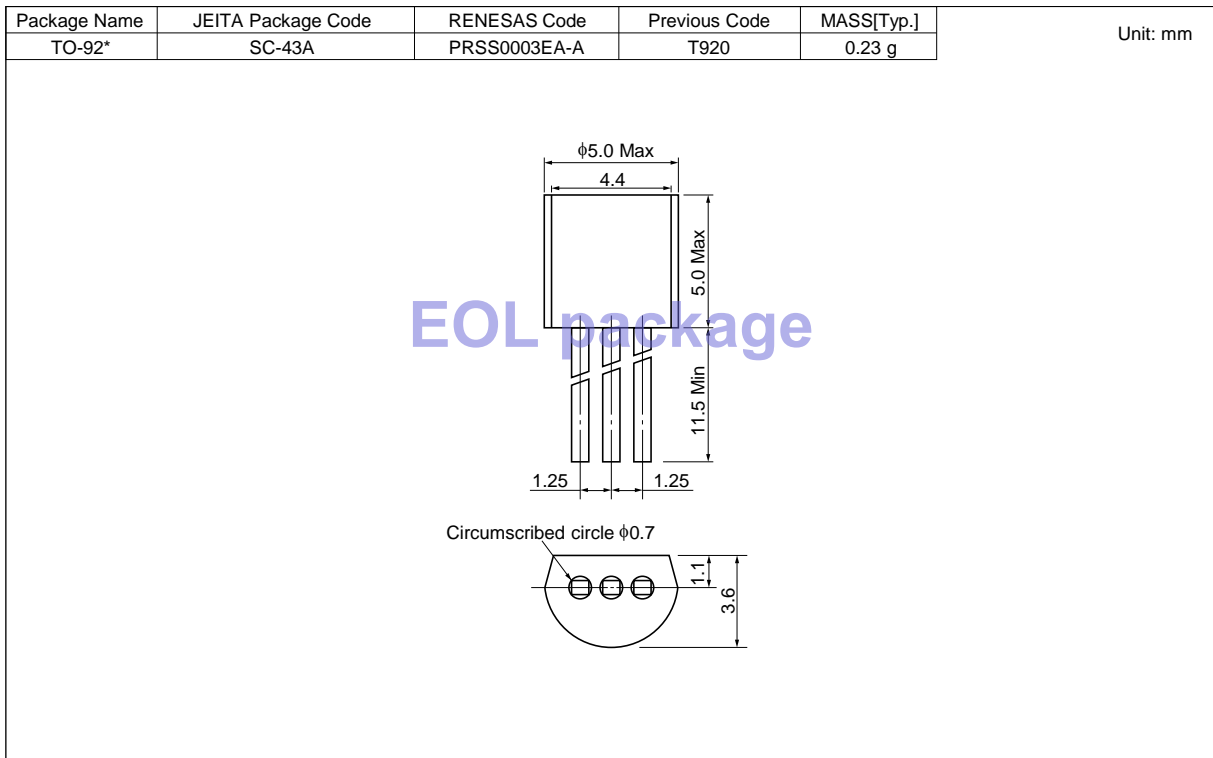


Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #B00 <Obsolete>



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark	Status
BCR08AM-12A#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type	Active
BCR08AM-12A-A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form	
BCR08AM-12A-TB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form	
BCR08AM-12A#B00	TO-92*	Plastic Bag	500 pcs.	Straight type	Obsolete
BCR08AM-12A-A6#B00	TO-92*	Plastic Bag	500 pcs.	A6 Lead form	
BCR08AM-12A-TB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form	

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

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