

BCR1AM-8P

400V - 1A - Triac

Low Power Use

R07DS0178EJ0300


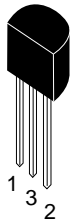
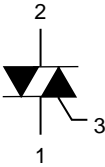
Rev.3.00

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 ^{Note1}	V_{DRM}	400		V
Non-repetitive peak off-state voltage ^{Note1}	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, $T_c = 56^\circ C$ ^{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	
	IV	V_{FGTIII}	—	—	2.0	
Gate trigger current ^{Note2}	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 ^{Note5}	
	III	I_{RGTIII}	—	—	5 ^{Note5}	
	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 ^{Note3}
Critical-rate of rise of off-state commutating voltage ^{Note4}	$(dv/dt)_c$	2	—	—	V/ μs	$T_j = 125^\circ\text{C}$

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

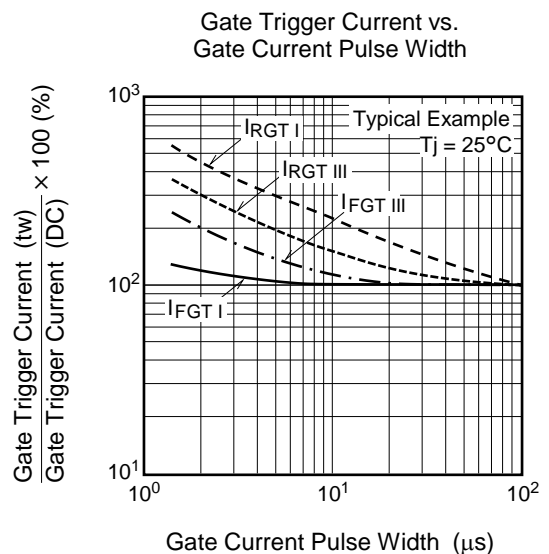
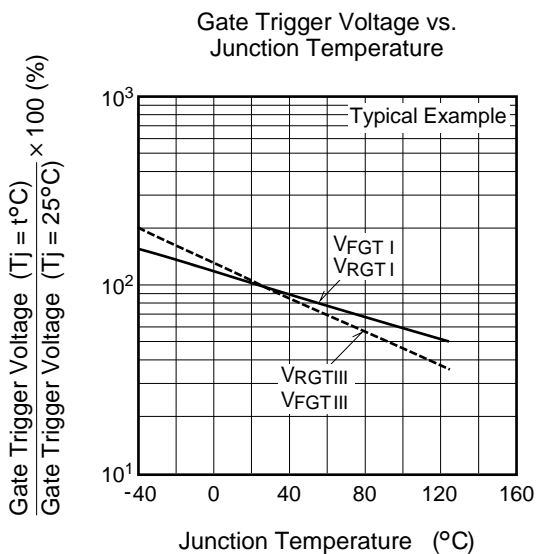
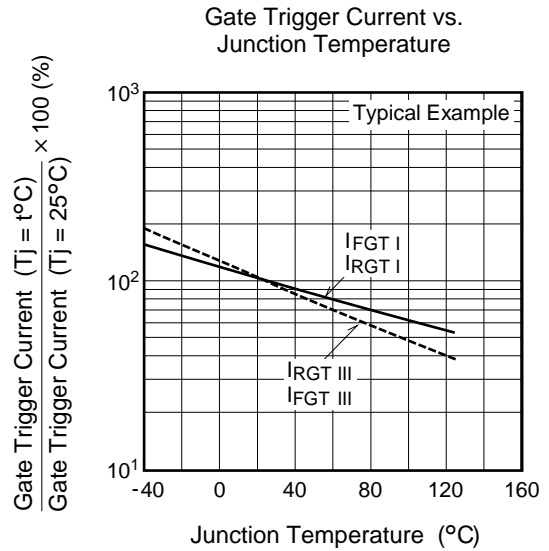
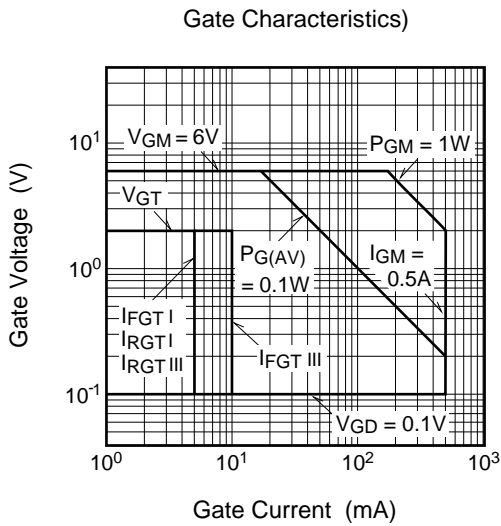
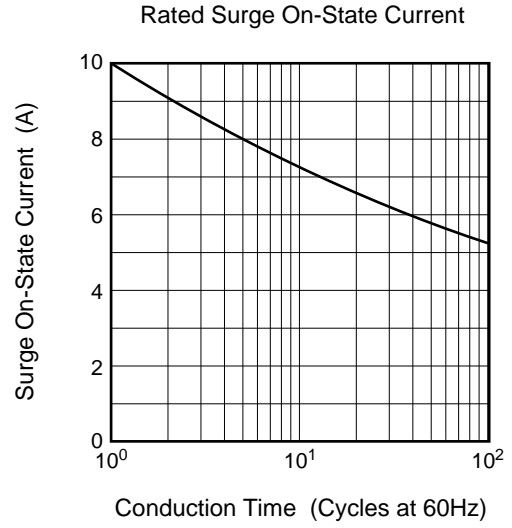
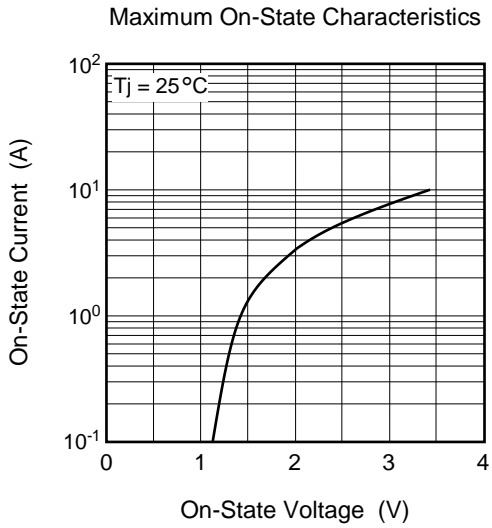
3. Case temperature is measured at the T_2 terminal 1.5 mm away from the molded case.

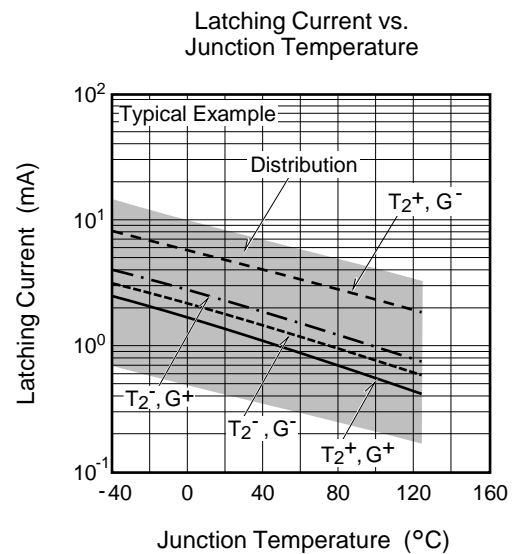
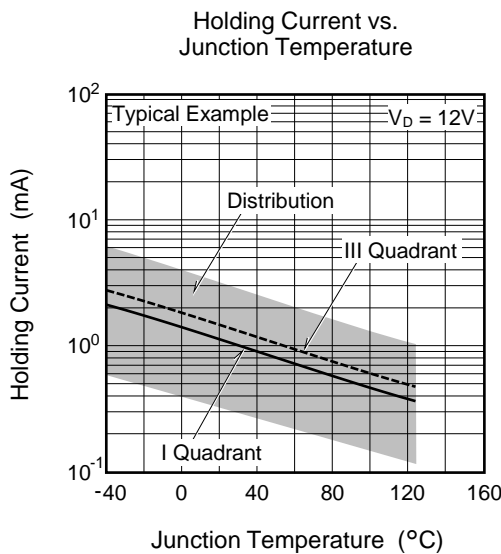
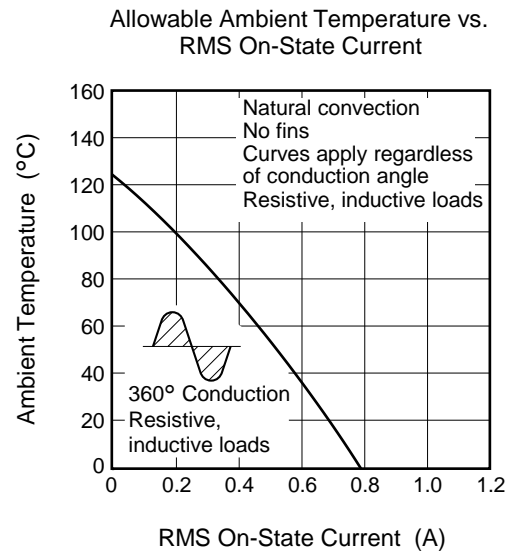
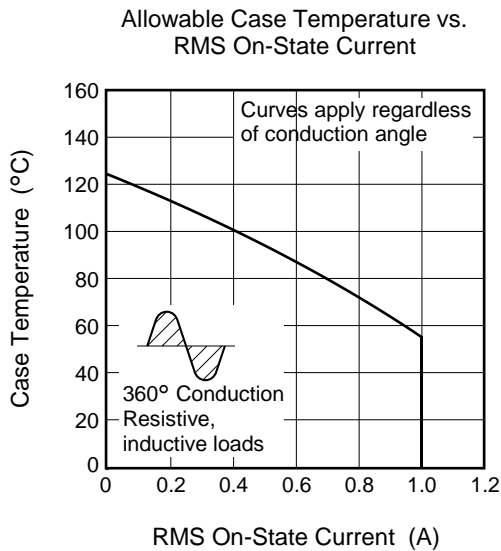
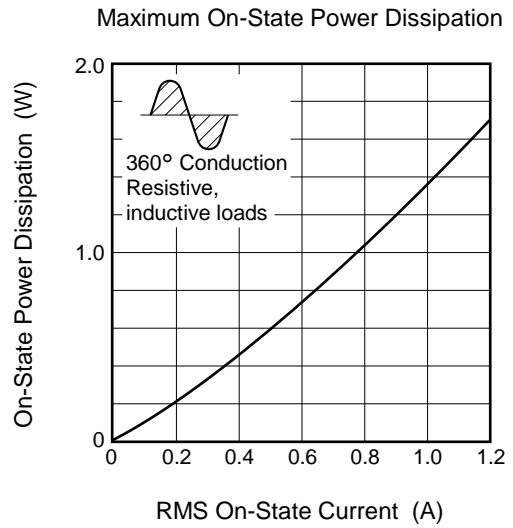
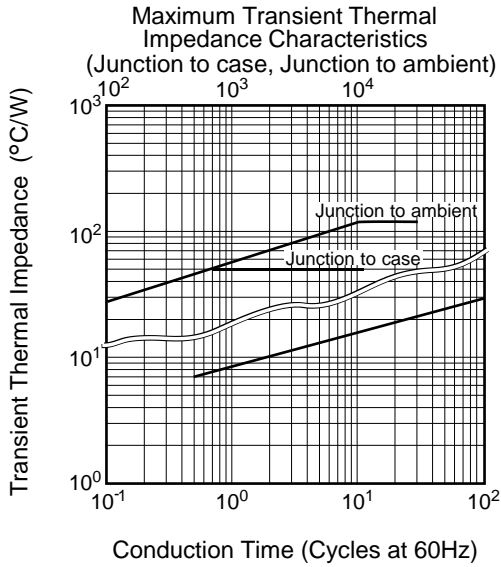
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

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

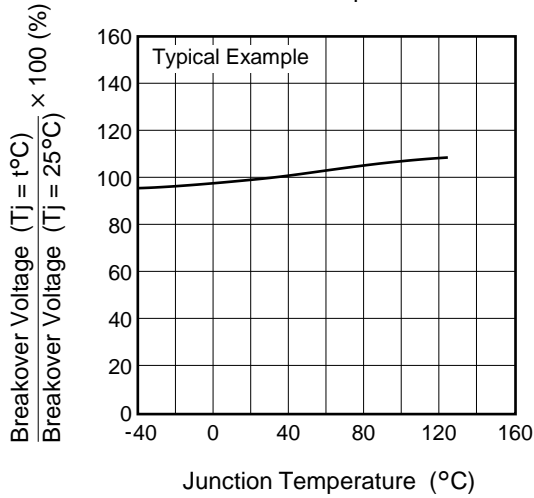
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -0.5\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

Performance Curves

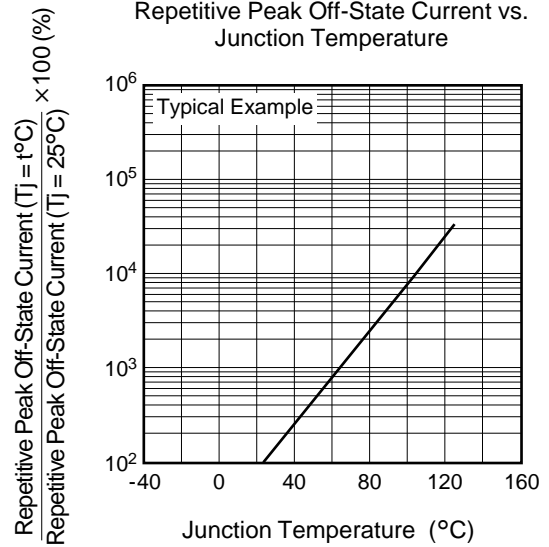




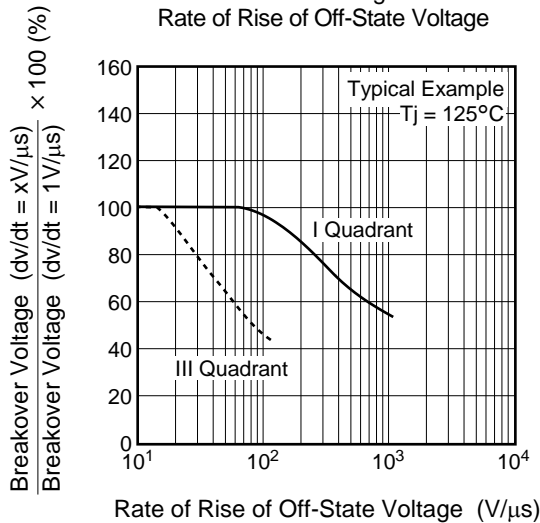
Breakover Voltage vs. Junction Temperature



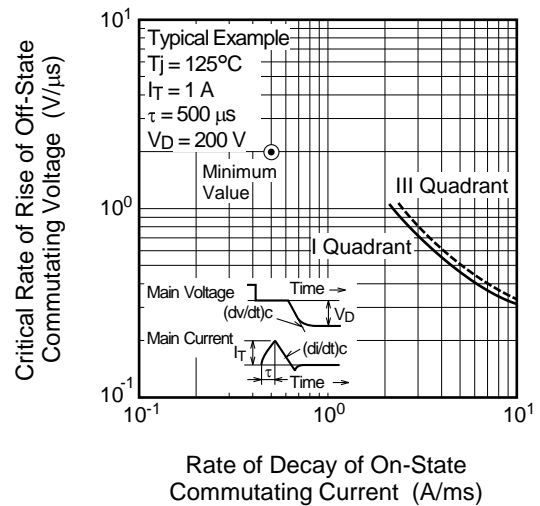
Repetitive Peak Off-State Current vs. Junction Temperature



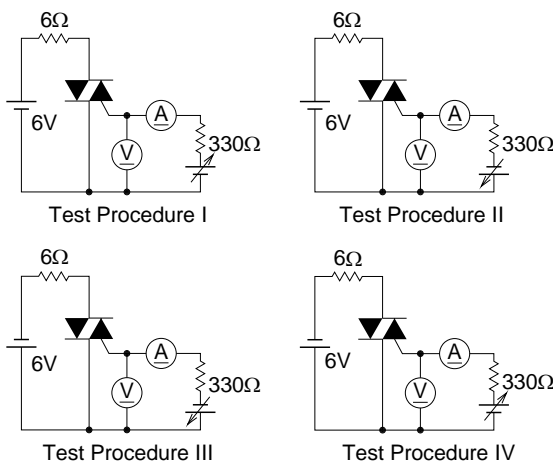
Breakover Voltage vs. Rate of Rise of Off-State Voltage



Commutation Characteristics

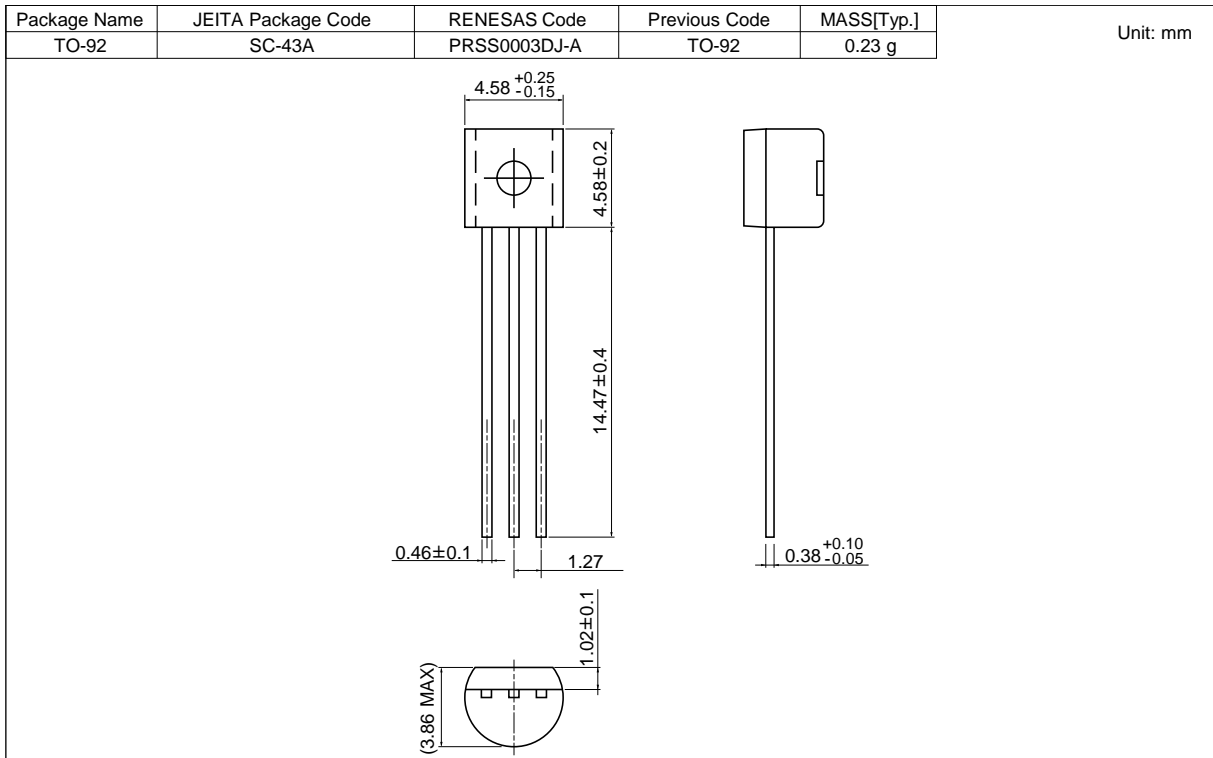


Gate Trigger Characteristics Test Circuits

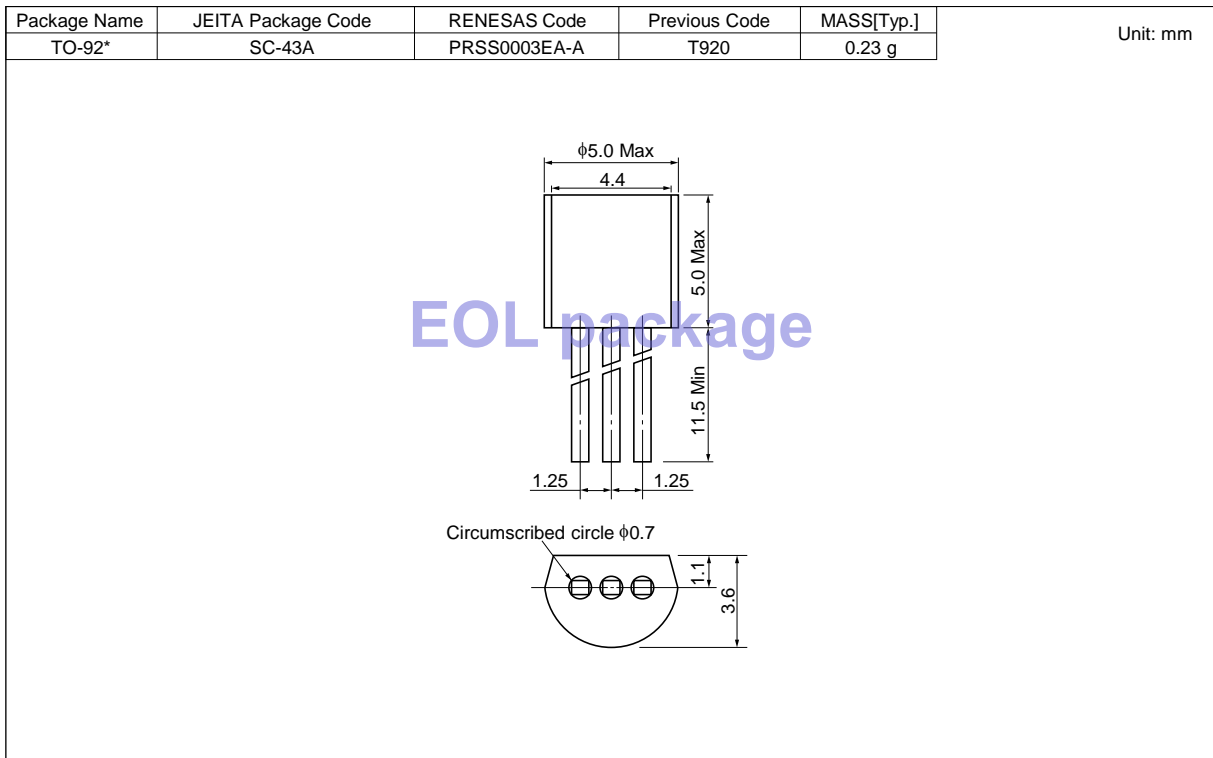


Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #B00 <Obsolete>



Ordering Information

Orderable Part Number	Package	Packing ^{Note6}	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 _{GT} 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 _{GT} 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 _{GT} 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 _{GT} 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 _{GT} 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 _{GT} item:1	

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

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