

BCR1AM-14A

700V - 1A - Triac

Low Power Use

R07DS1076EJ0400

Rev.4.00

Feb. 22, 2022

Features

- I_T (RMS): 1 A
- V_{DRM} : 700 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

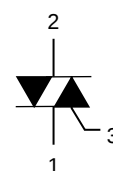
RENESAS Package code: PRSS0003EA-A
(Package name: TO-92*)

Ordering code: #B00



PRSS0003DJ-A
(Package name: TO-92)

#BD0



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
		14	
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	700	V
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	840	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, $T_c = 56^\circ\text{C}$ ^{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	BCR1AM-14A-1 (I _{GT} item : 1)			BCR1AM-14A			Unit	Test conditions
		Min.	Typ.	Max.	Min.	Typ.	Max.		
Repetitive peak off-state current	I _{DRM}	—	—	0.5	—	—	0.5	mA	T _j = 125°C V _{DRM} applied
On-state voltage	V _{TM}	—	—	1.6	—	—	1.6	V	T _c = 25°C, I _{TM} = 1.5 A instantaneous measurement
Gate trigger voltage ^{Note2}	I V _{FGTI}	—	—	2.0	—	—	2.0	V	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II V _{RGTI}	—	—	2.0	—	—	2.0	V	
	III V _{RGTIII}	—	—	2.0	—	—	2.0	V	
	IV V _{FGTIII}	—	—	2.0	—	—	2.0	V	
Gate trigger current ^{Note2}	I I _{FGTI}	—	—	5	—	—	5	mA	T _j = 25°C, V _D = 6 V R _L = 6 Ω, R _G = 330 Ω
	II I _{RGTI}	—	—	3	—	—	5	mA	
	III I _{RGTIII}	—	—	3	—	—	5	mA	
	IV I _{FGTIII}	—	—	10	—	—	10	mA	
Gate non-trigger voltage	V _{GD}	0.1	—	—	0.1	—	—	V	T _j = 125°C V _D = 1/2 V _{DRM}
Thermal resistance	R _{th(j-c)}	—	—	50	—	—	50	°C/W	Junction to case ^{Note3}
Critical-rate of rise of off-state commutating voltage ^{Note4}	(dv/dt) _c	1.0	—	—	2.0	—	—	V/μs	T _j = 125°C

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

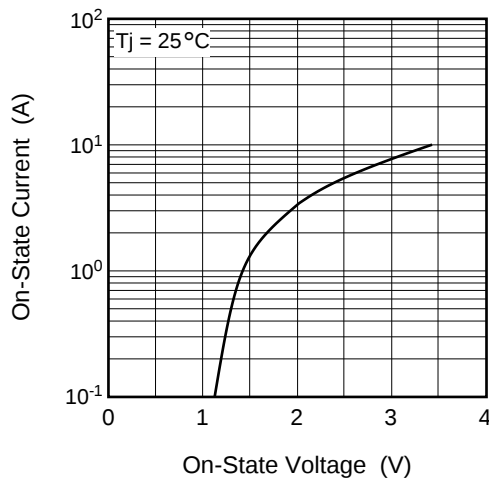
3. Case temperature is measured at the T₂ terminal 1.5 mm away from the molded case.

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

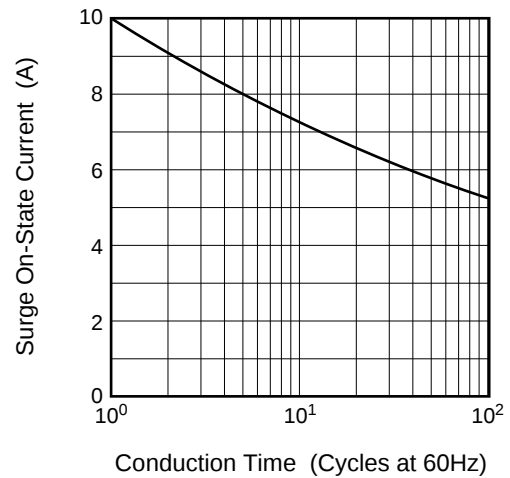
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T _j = 125°C 2. Rate of decay of on-state commutating current (di/dt) _c = - 0.5 A/ms 3. Peak off-state voltage V _D = 400 V	

Performance Curves

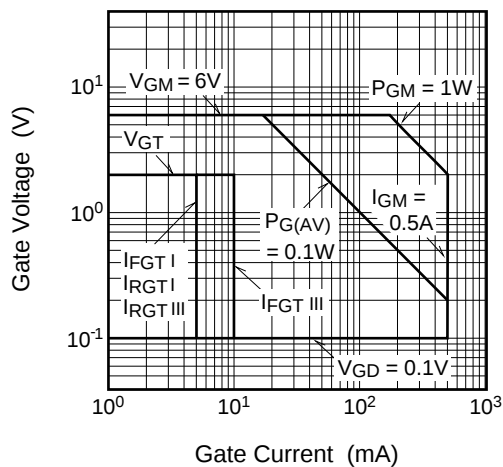
Maximum On-State Characteristics



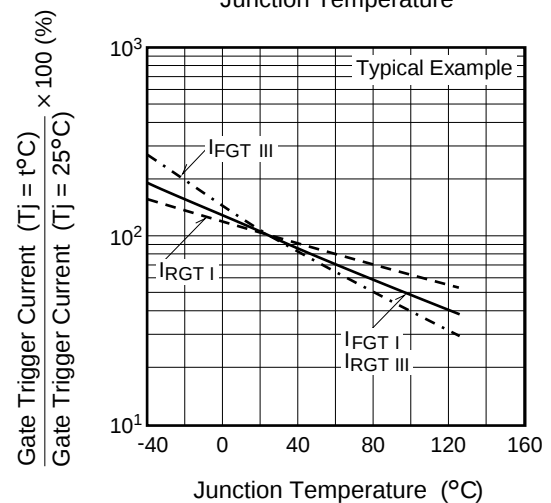
Rated Surge On-State Current



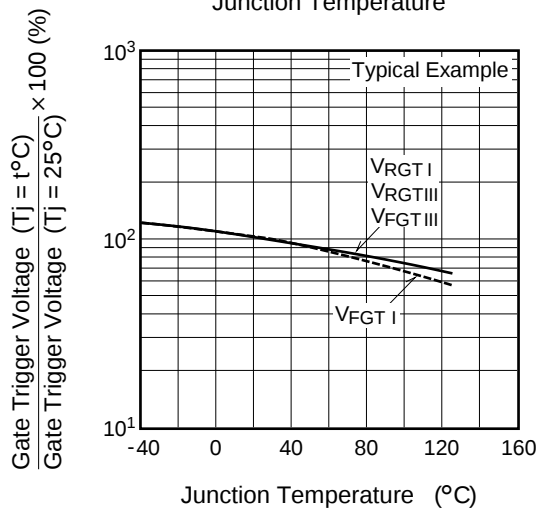
Gate Characteristics



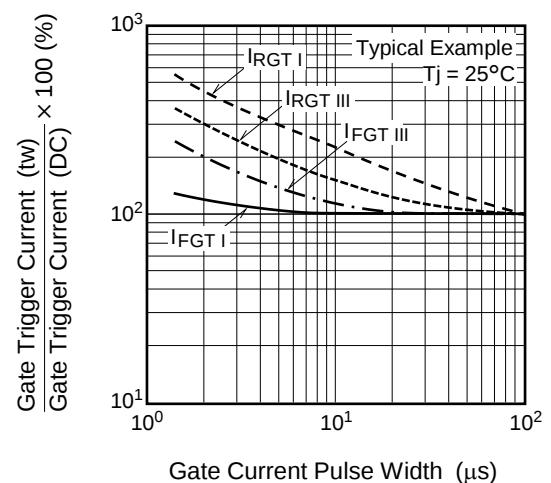
Gate Trigger Current vs. Junction Temperature

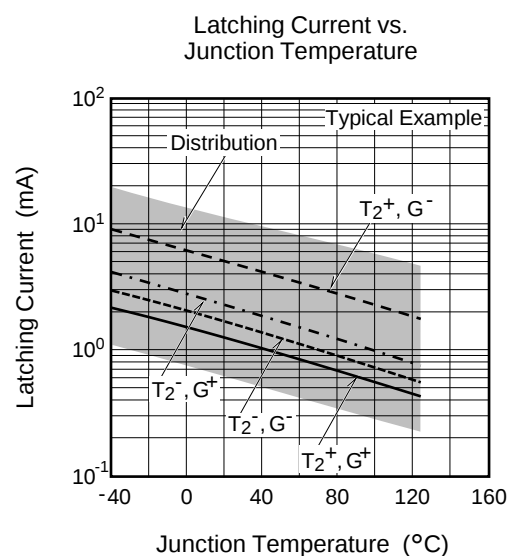
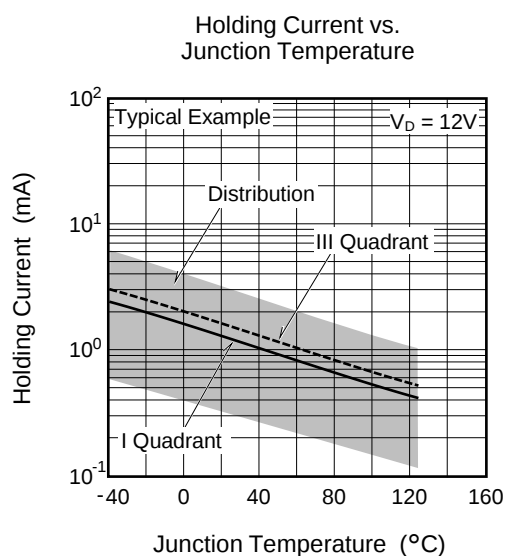
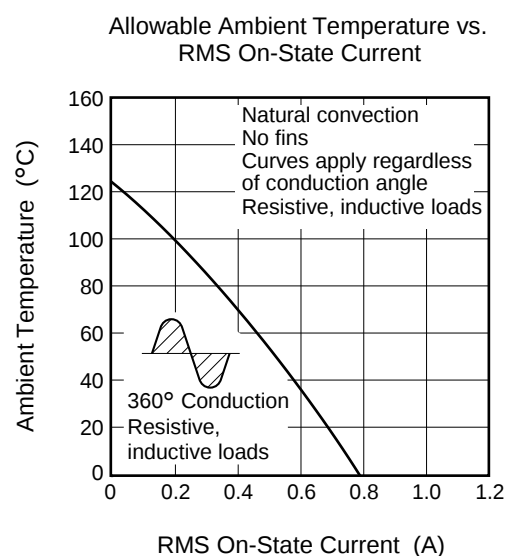
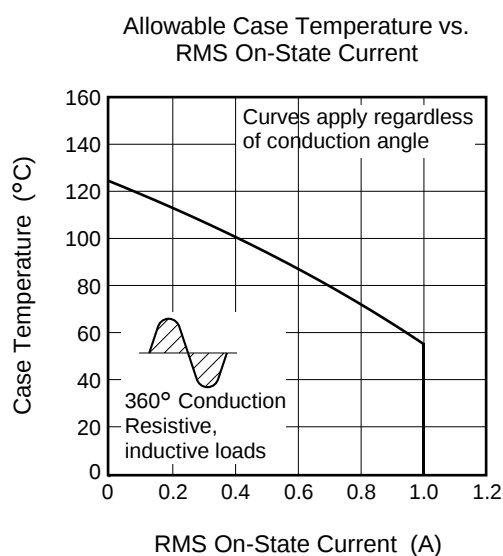
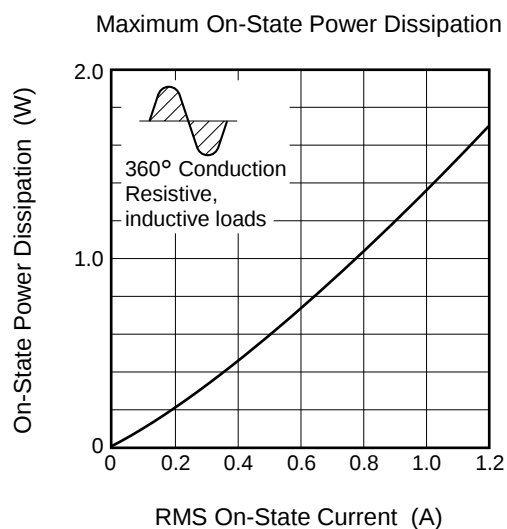
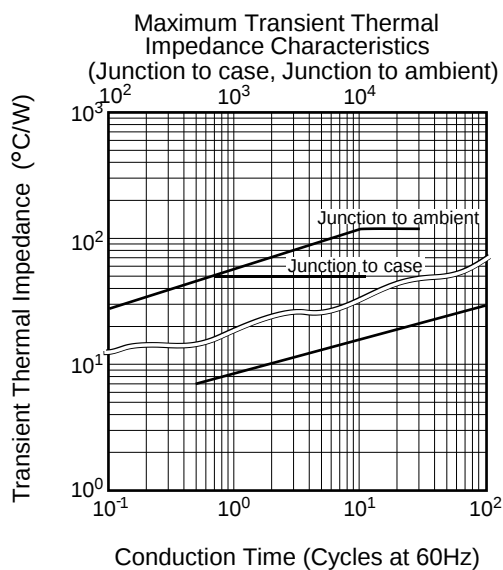


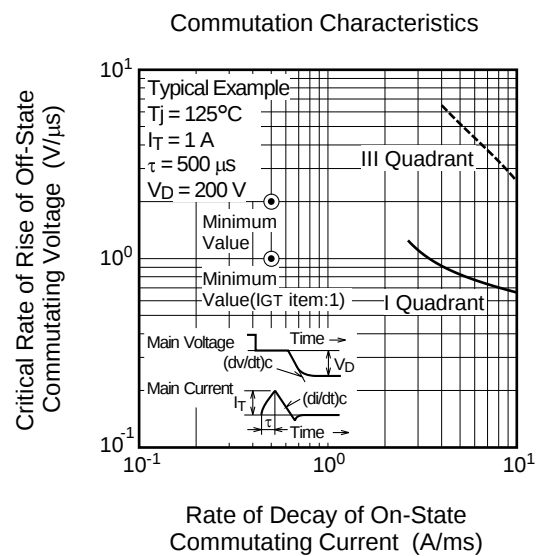
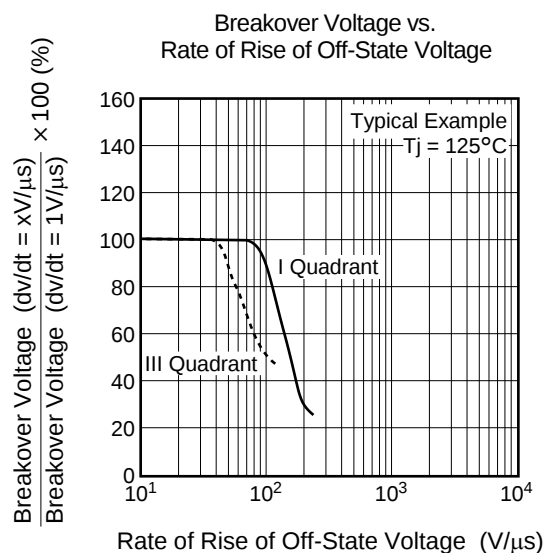
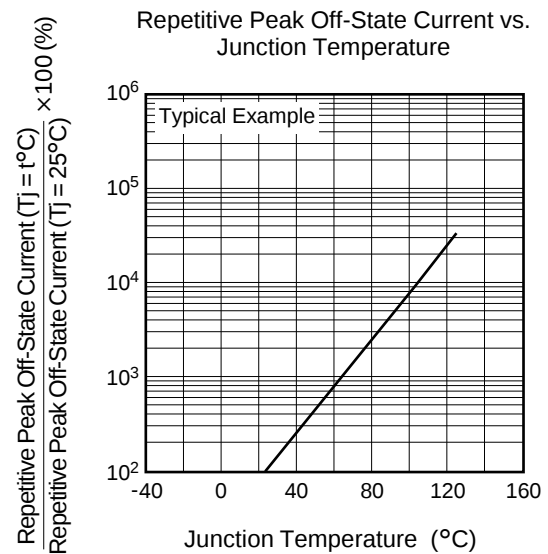
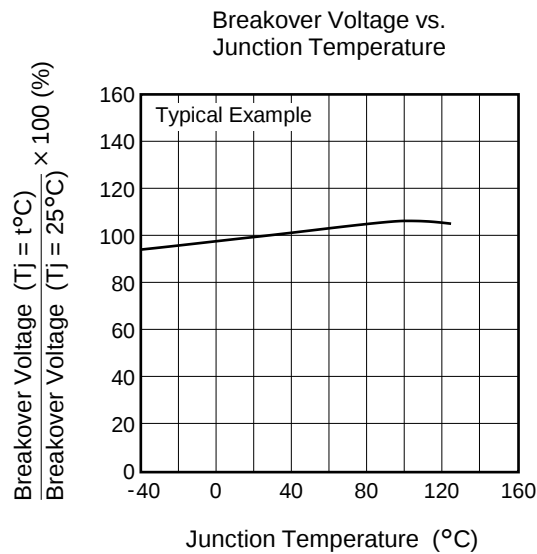
Gate Trigger Voltage vs. Junction Temperature



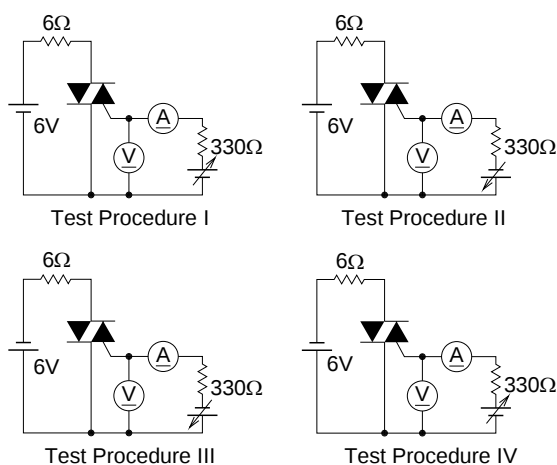
Gate Trigger Current vs. Gate Current Pulse Width





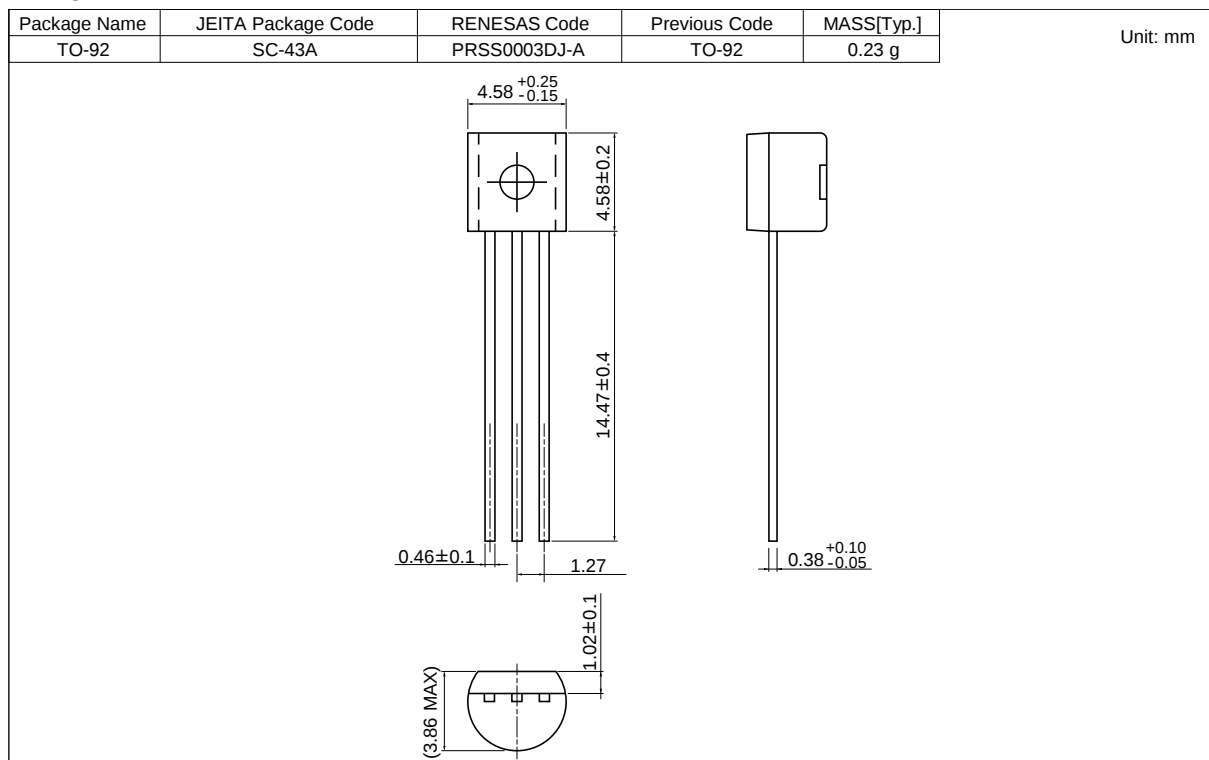


Gate Trigger Characteristics Test Circuits

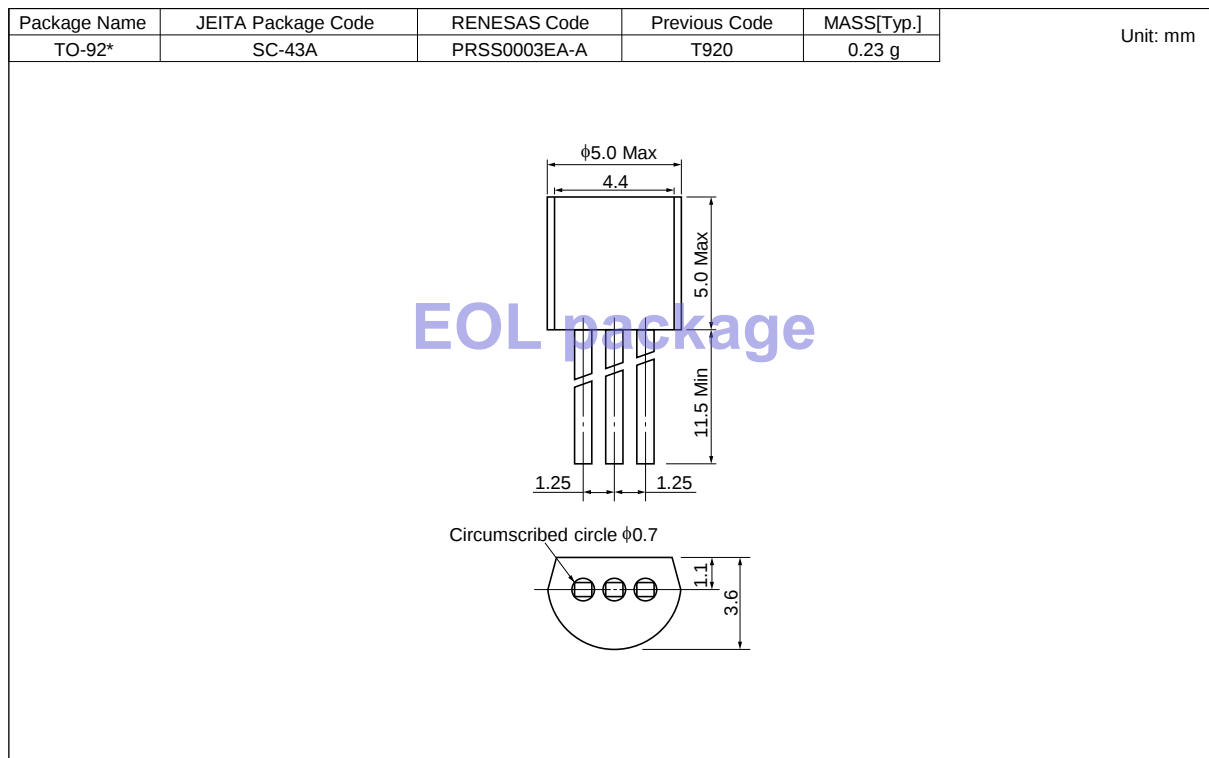


Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #B00 <Obsolete>



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark	Status
BCR1AM-14A#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type	Active
BCR1AM-14A-1#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type, I _{GT} item:1	
BCR1AM-14A-A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form	
BCR1AM-14A-1A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form, I _{GT} item:1	
BCR1AM-14A-TB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form	
BCR1AM-14A-1TB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form, I _{GT} item:1	
BCR1AM-14A#B00	TO-92*	Plastic Bag	500 pcs.	Straight type	Obsolete
BCR1AM-14A-1#B00	TO-92*	Plastic Bag	500 pcs.	Straight type, I _{GT} item:1	
BCR1AM-14A-A6#B00	TO-92*	Plastic Bag	500 pcs.	A6 Lead form	
BCR1AM-14A-1A6#B00	TO-92*	Plastic Bag	500 pcs.	A6 Lead form, I _{GT} item:1	
BCR1AM-14A-TB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form	
BCR1AM-14A-1TB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form, I _{GT} item:1	

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

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(Rev.4.0-1 November 2017)



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