

BCR3AM-14B

700V - 3A - Triac

Low Power Use

R07DS1422EJ0300


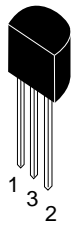
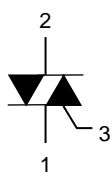
Rev.3.00

Feb. 22, 2022

Features

- $I_T (RMS)$: 3 A (non-continuous)
- V_{DRM} : 800 V ($T_j = 125^\circ\text{C}$)
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$: 30 mA
- T_j : 150°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

Non-continuous motor control and other general purpose AC control applications.

Maximum Ratings

Parameter	Symbol	Voltage class	Unit	Conditions
		14		
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	800	V	$T_j = 125^\circ\text{C}$
		700	V	$T_j = 150^\circ\text{C}$
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	840	V	

Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_T (RMS)$	3	A	Commercial frequency, sine full wave 360° conduction, non-continuous
Surge on-state current	I_{TSM}	30	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	3.7	A ² s	Value corresponding to 1 cycle of half wave 60 Hz, surge on-state current
Peak gate power dissipation	P_{GM}	3	W	
Average gate power dissipation	$P_{G(AV)}$	0.3	W	
Peak gate voltage	V_{GM}	6	V	
Peak gate current	I_{GM}	0.5	A	
Junction Temperature	T_j	-40 to +150	°C	
Storage temperature	T_{stg}	-40 to +150	°C	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	2.0	mA	$T_j = 150^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.6	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 4.5\text{ A}$, instantaneous measurement
Gate trigger voltage ^{Note2}	I	V_{FGTI}	—	—	1.5	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	V_{RGTI}	—	—	1.5	
	III	V_{RGTIII}	—	—	1.5	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	30	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	30	
	III	I_{RGTIII}	—	—	30	
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
		0.1	—	—	V	$T_j = 150^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
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}	$(dv/dt)_c$	5	—	—	V/ μs	$T_j = 125^\circ\text{C}$
		1	—	—	V/ μs	$T_j = 125^\circ\text{C}$

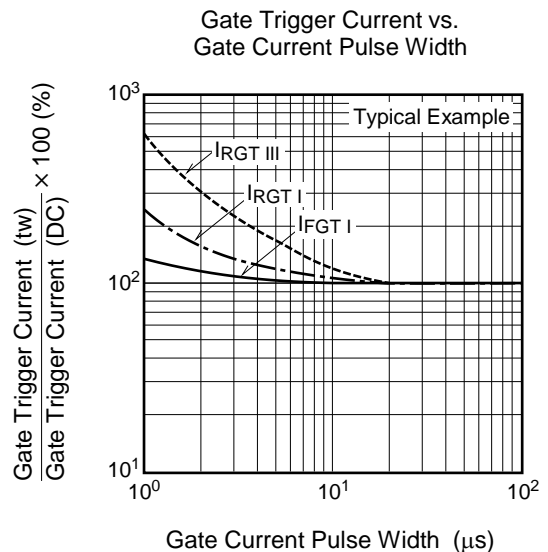
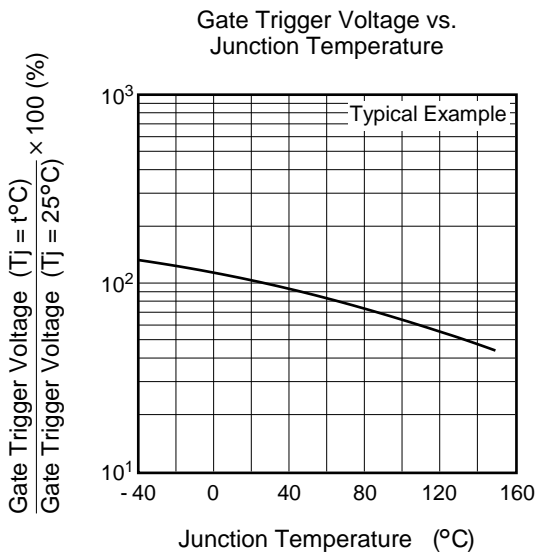
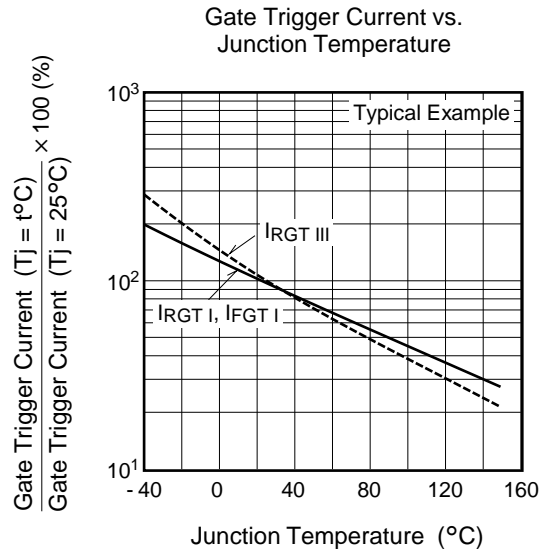
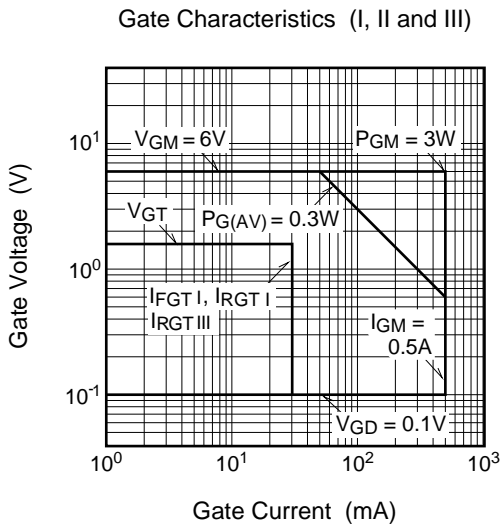
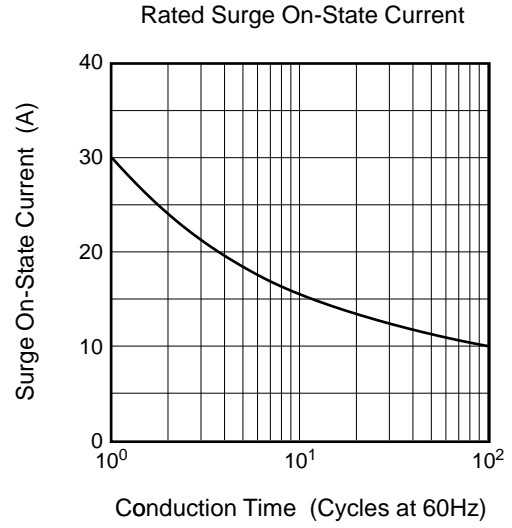
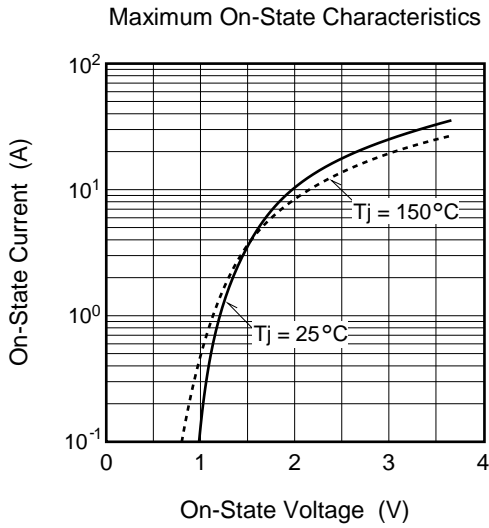
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

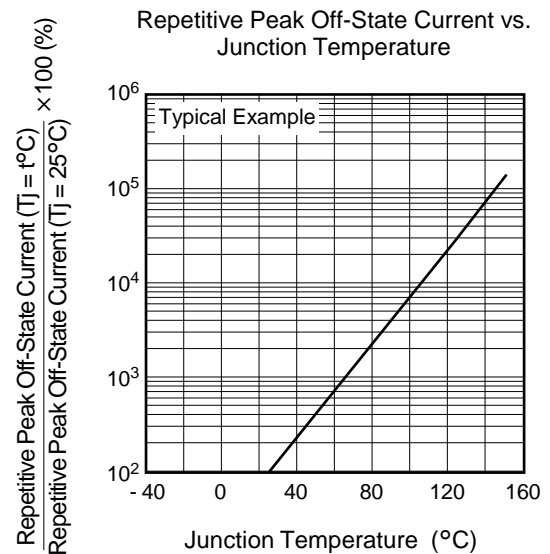
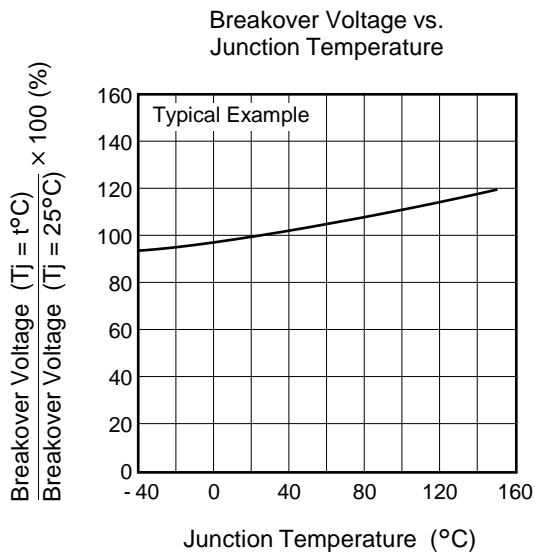
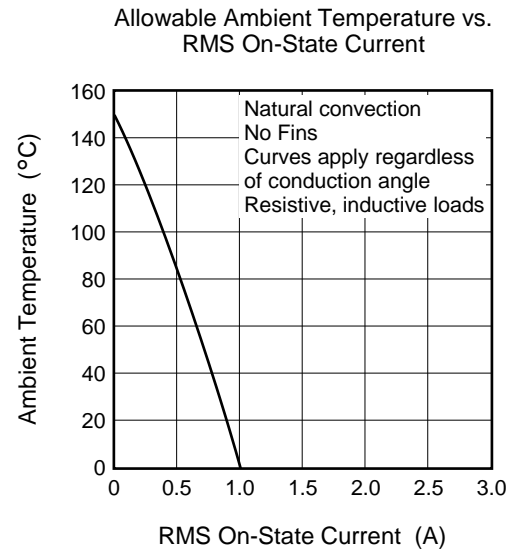
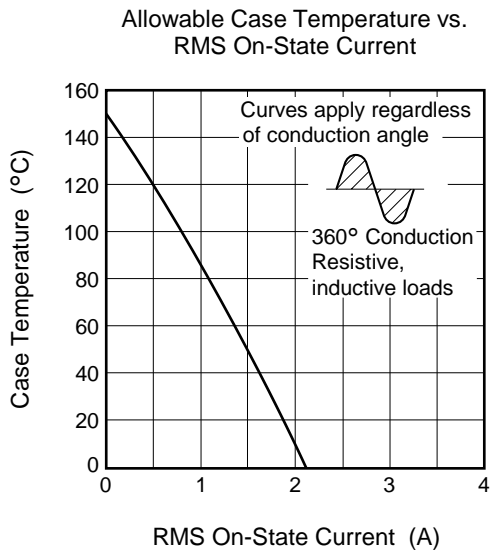
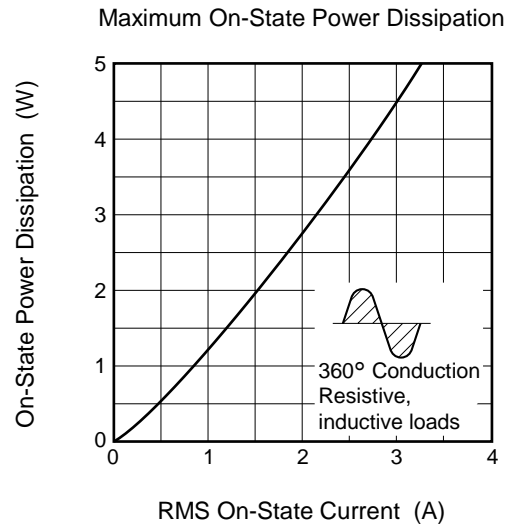
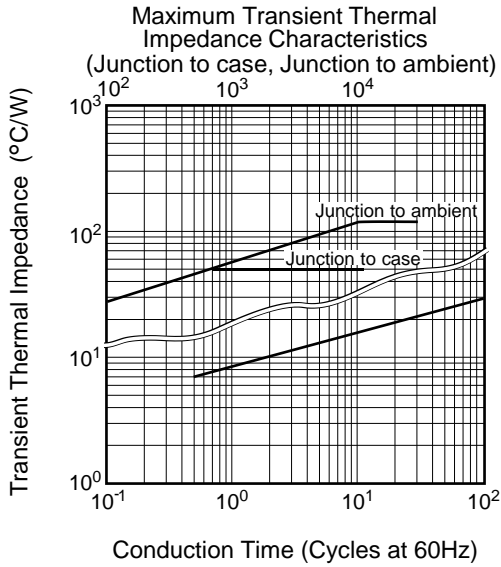
3. Case temperature is measured at the T_2 terminal 1.5 mm away from the molded case.

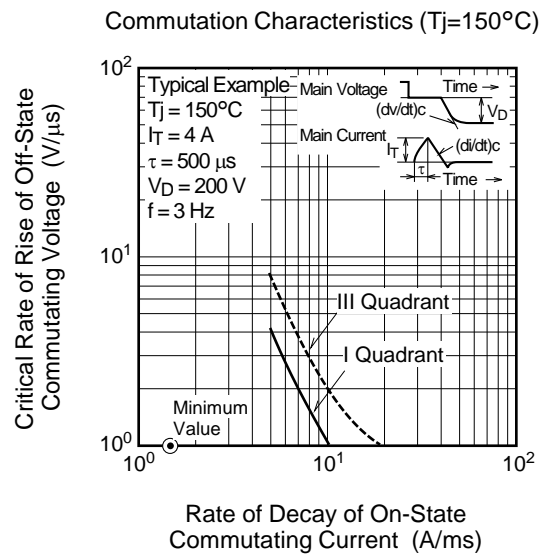
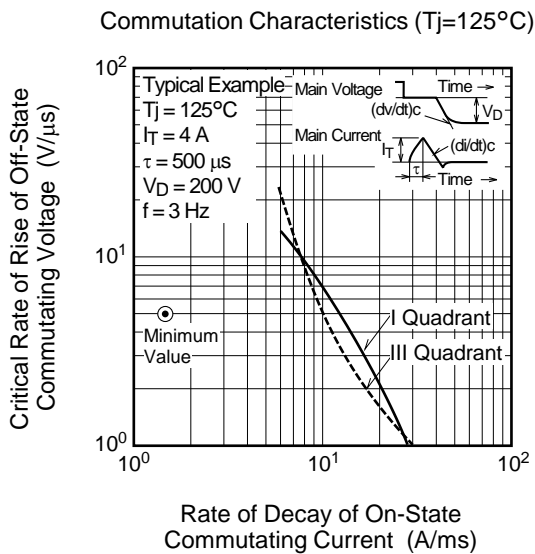
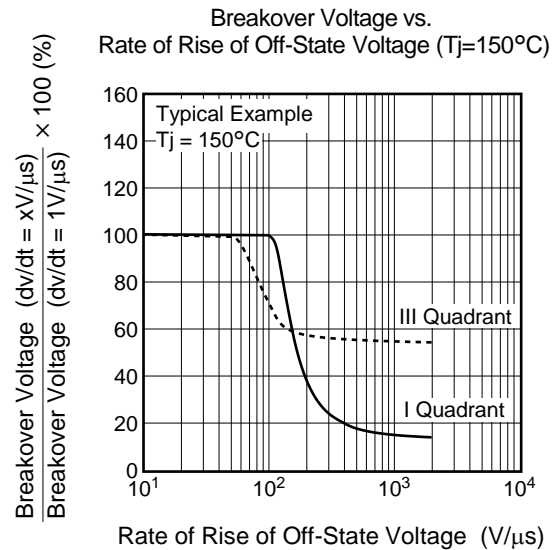
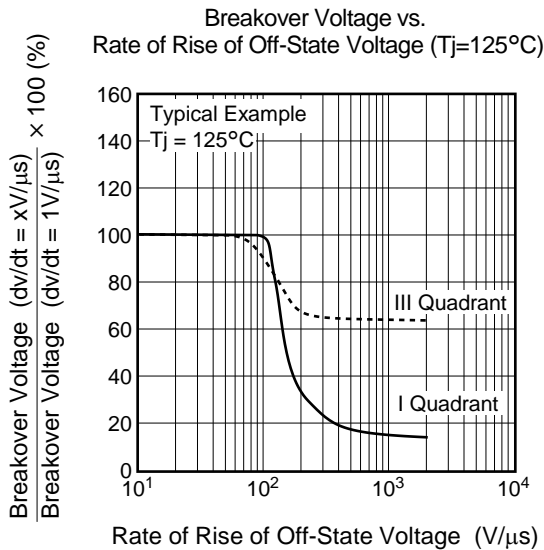
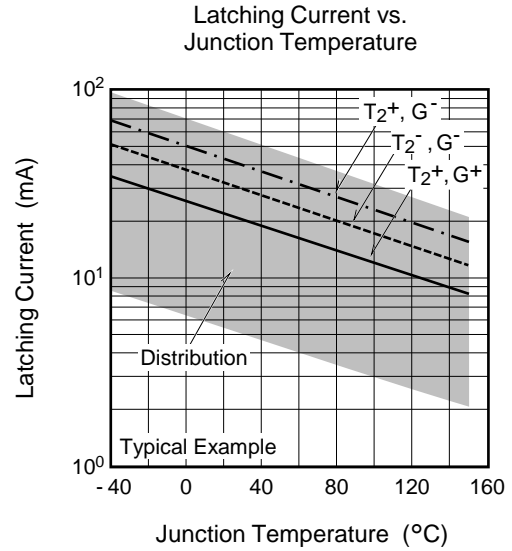
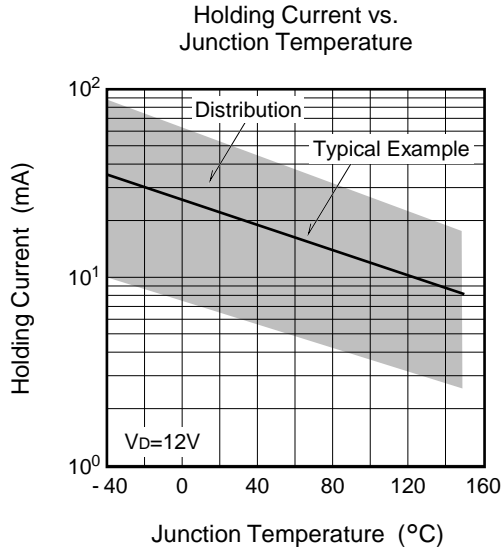
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C} / 150^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -1.5\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

Performance Curves

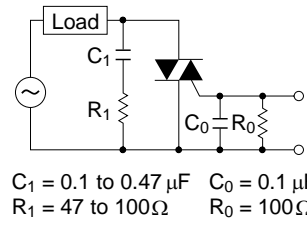
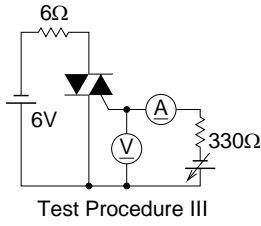
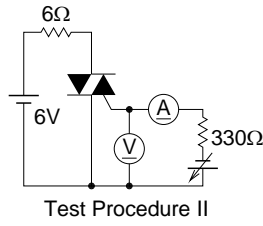
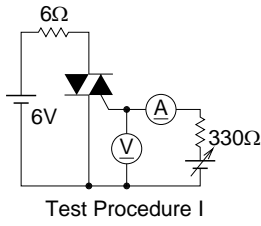






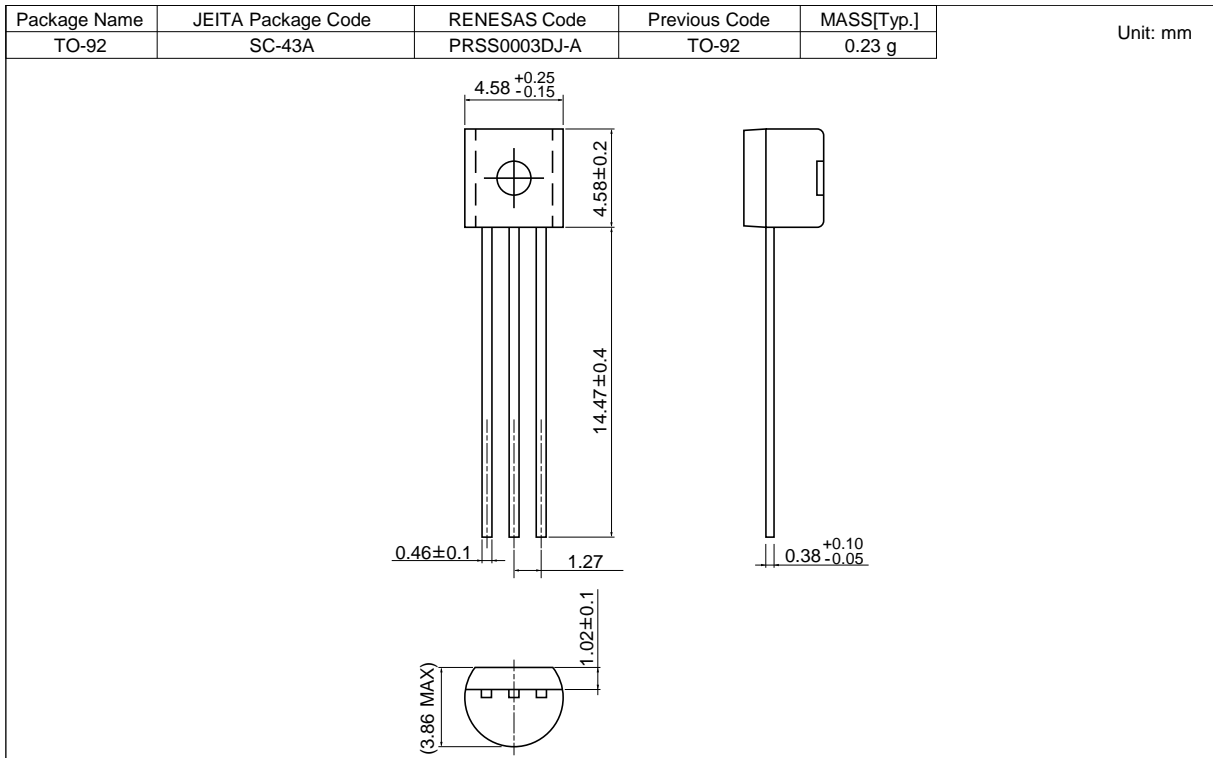
Gate Trigger Characteristics Test Circuits

Recommended peripheral components for Triac

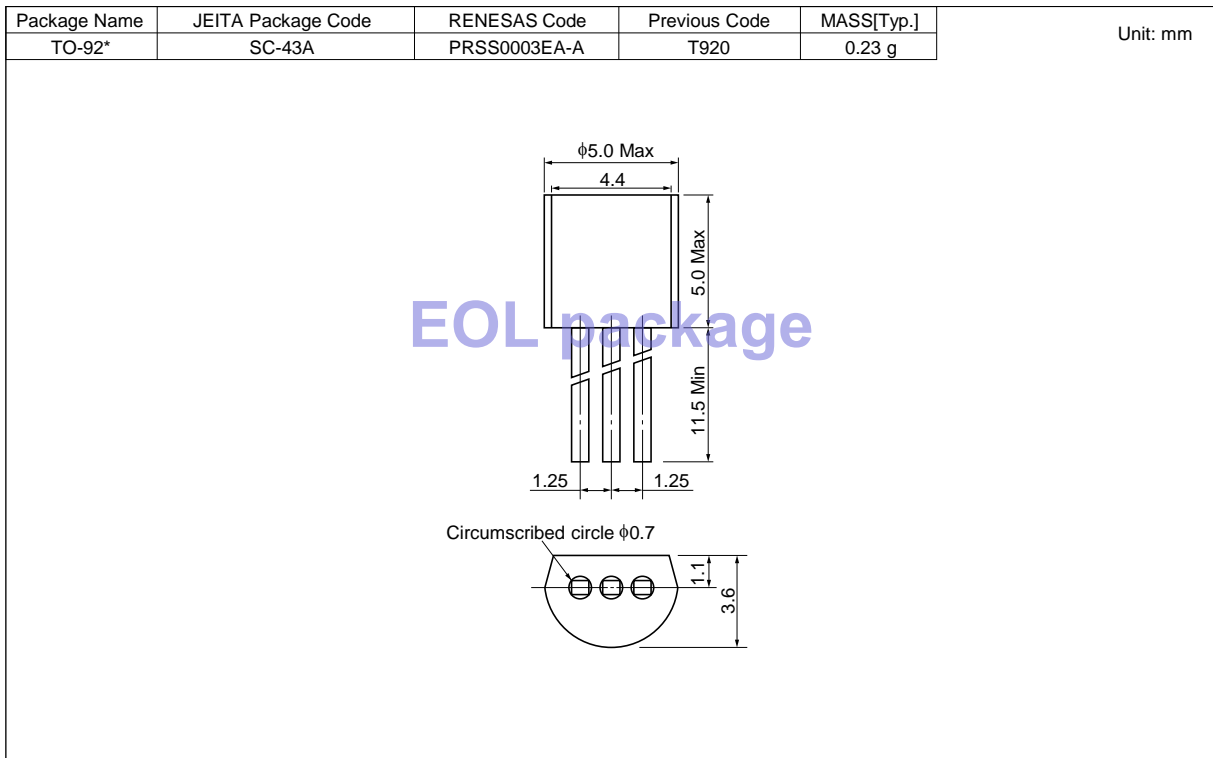


Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #B00 <Obsolete>



Ordering Information

Orderable Part Number	Package	Packing ^{Note5}	Quantity	Remark	Status
BCR3AM-14B#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type	Active
BCR3AM-14B-A6#BD0	TO-92	Plastic Bag	1000 pcs.	A6 Lead form	
BCR3AM-14B#B00	TO-92*	Plastic Bag	500 pcs.	Straight type	Obsolete
BCR3AM-14B-A6#B00	TO-92*	Plastic Bag	500 pcs.	A6 Lead form	

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

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