

# BCR08AM-12A

## Triac

Low Power Use

REJ03G0343-0200

Rev.2.00

Nov 30, 2007

### Features

- $I_{T(RMS)}$  : 0.8 A
- $V_{DRM}$  : 600 V
- $I_{RGTI}$ ,  $I_{RGTIII}$  : 5 mA
- Planar Passivation Type

### Outline

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

1. T<sub>1</sub> Terminal  
2. T<sub>2</sub> Terminal  
3. Gate Terminal

### Applications

Electric fan, air cleaner, and other general purpose control applications

### Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		12	
Repetitive peak off-state voltage <sup>Note1</sup>	$V_{DRM}$	600	V
Non-repetitive peak off-state voltage <sup>Note1</sup>	$V_{DSM}$	720	V

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	60Hz sine wave 1 full cycle, peak value, non-repetitive
$I^2t$ for fusing	$I^2t$	0.26	$\text{A}^2\text{s}$	Value corresponding to 1 cycle of half wave 60Hz, 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	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	- 40 to +125	$^\circ\text{C}$	
Mass	—	0.23	g	Typical value

Notes: 1. Gate open.

## 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 <sup>Note2</sup>	II $V_{RGTI}$	—	—	2.0	V	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $R_L = 6\ \Omega$ , $R_G = 330\ \Omega$
	III $V_{RGTIII}$	—	—	2.0	V	
Gate trigger current <sup>Note2</sup>	II $I_{RGTI}$	—	—	5	mA	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $R_L = 6\ \Omega$ , $R_G = 330\ \Omega$
	III $I_{RGTIII}$	—	—	5	mA	
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 <sup>Note3</sup>
Critical-rate of rise of off-state commutating voltage <sup>Note4</sup>	$(dv/dt)_c$	0.5	—	—	$\text{V}/\mu\text{s}$	$T_j = 125^\circ\text{C}$

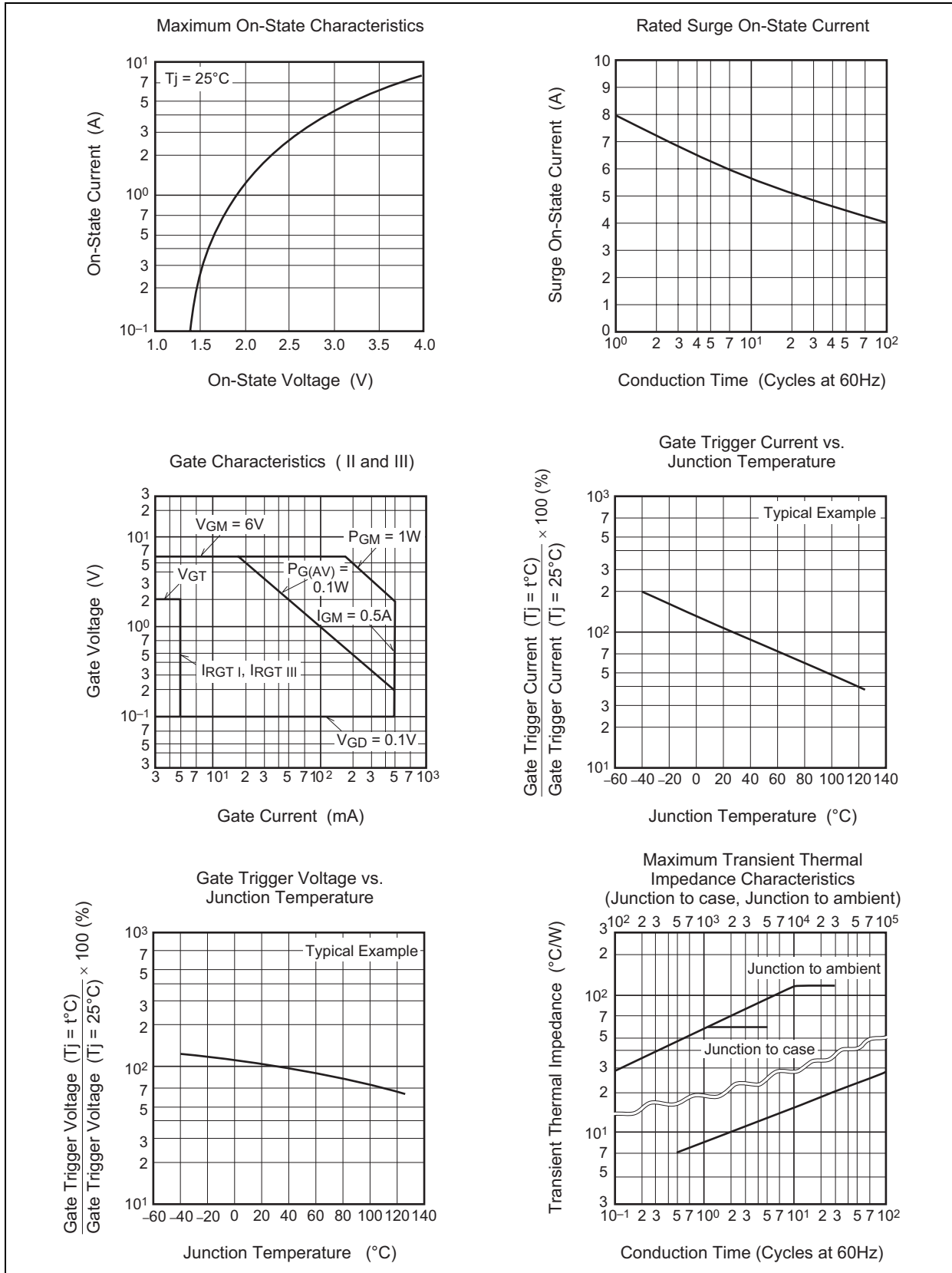
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

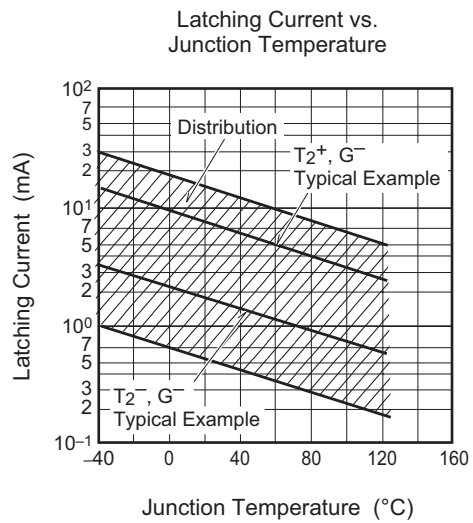
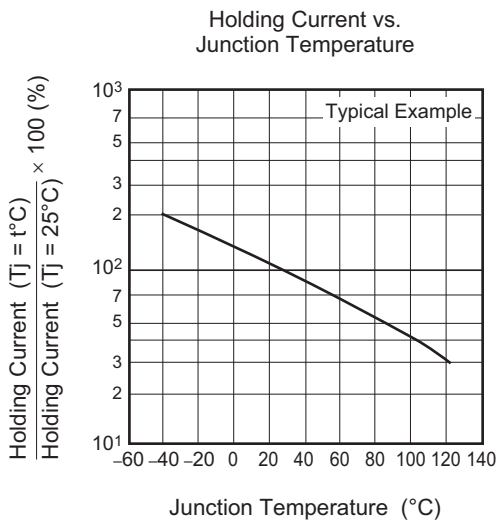
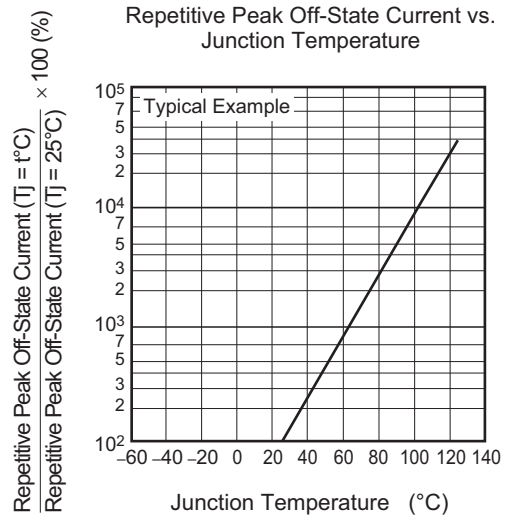
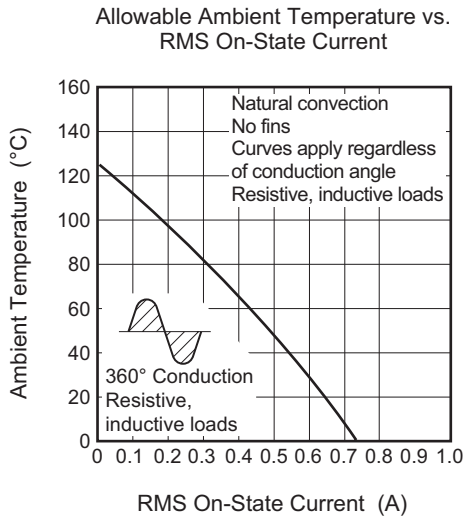
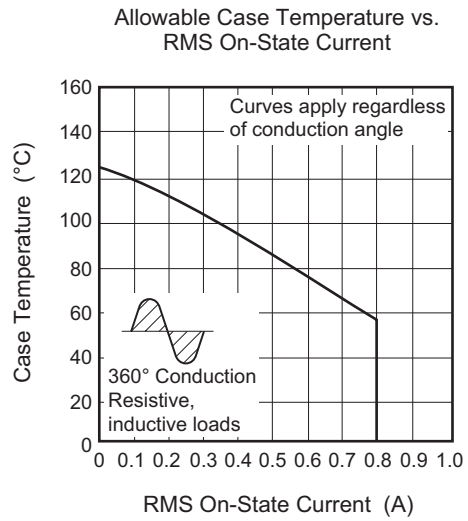
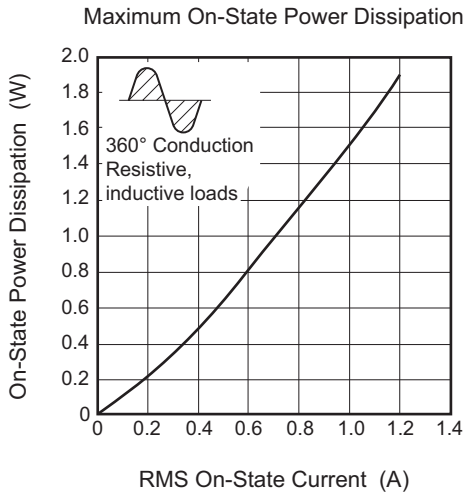
3. Case temperature is measured at the  $T_2$  terminal 1.5 mm away from the molded case.

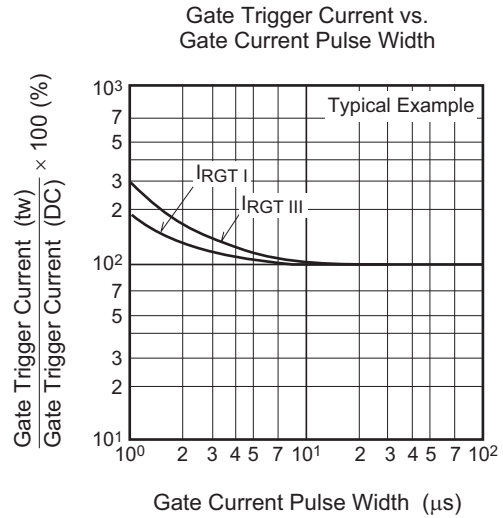
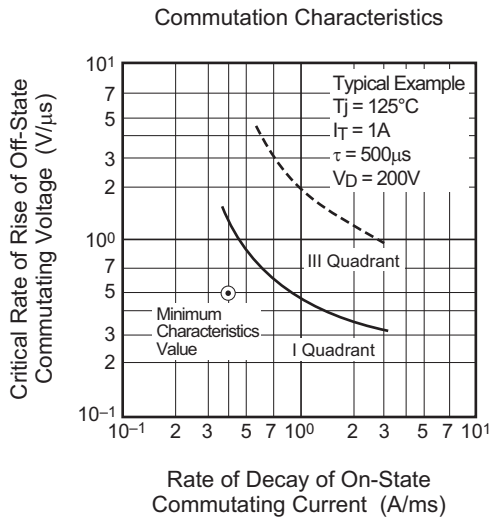
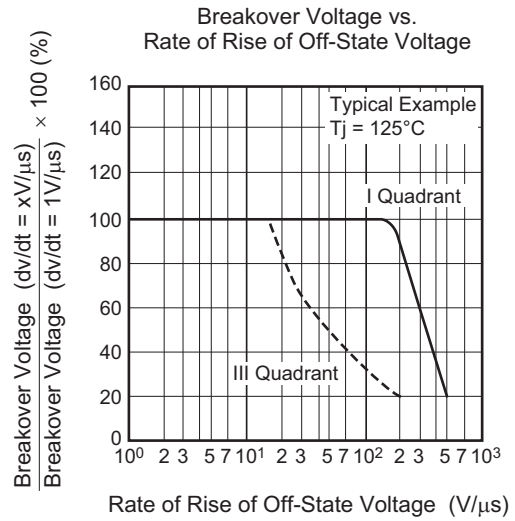
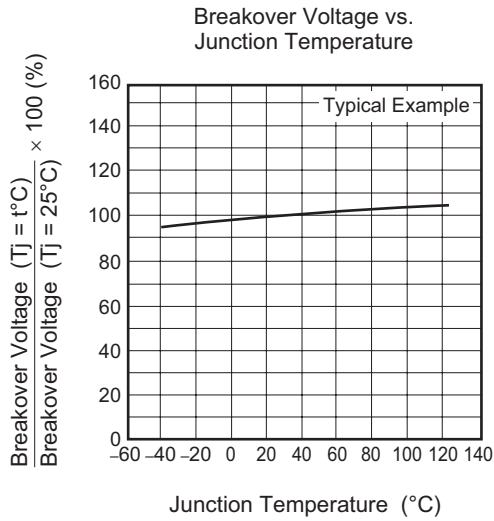
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

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 $V_D = 400\text{ V}$	

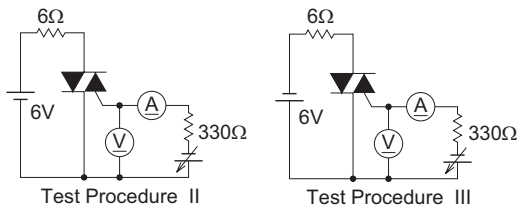
Performance Curves



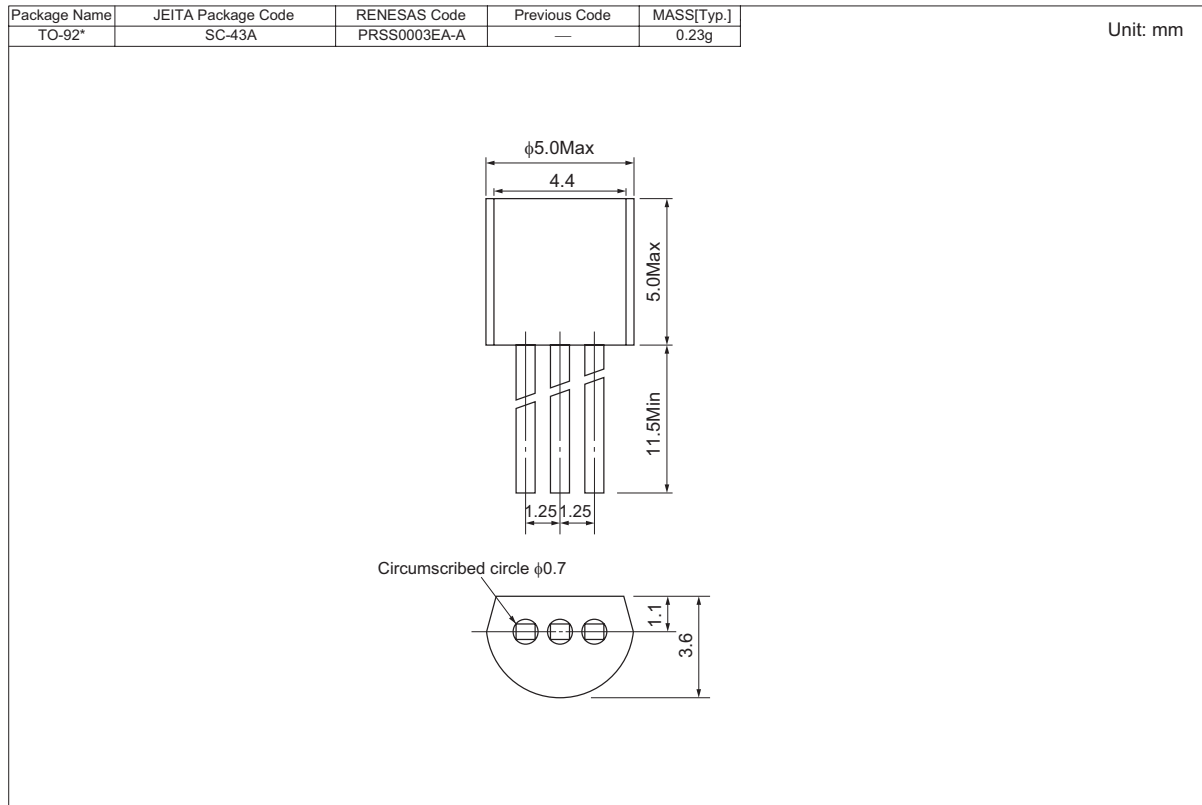




#### Gate Trigger Characteristics Test Circuits



## Package Dimensions



## Order Code

Lead form	Standard packing	Quantity	Standard order code	Standard order code example
Straight type	Vinyl sack	500	Type name	BCR08AM-12A
Lead form	Vinyl sack	500	Type name – Lead forming code	BCR08AM-12A-A6
Form A8	Taping	2000	Type name – TB	BCR08AM-12A-TB

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

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