

# CR03AM-16A

800V-0.3A-Thyristor

Low Power Use

R07DS0987EJ0200

Rev.2.00

Jun 14, 2013

## Features

- $I_{T(AV)}$  : 0.3 A
- $V_{DRM}$  : 800 V
- $I_{GT}$ : 100  $\mu$ A
- Planar Type

## Outline

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



1. Cathode
2. Anode
3. Gate

## Applications

Leakage protector, timer, and gas igniter

## Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		16	
Repetitive peak reverse voltage	$V_{RRM}$	800	V
Non-repetitive peak reverse voltage	$V_{RSM}$	960	V
DC reverse voltage	$V_{R(DC)}$	640	V
Repetitive peak off-state voltage <sup>Note1</sup>	$V_{DRM}$	800	V
Non-repetitive peak off-state voltage <sup>Note1</sup>	$V_{DSM}$	960	V
DC off-state voltage <sup>Note1</sup>	$V_{D(DC)}$	640	V

Notes: 1. With gate to cathode resistance  $R_{GK}=1\text{ k}\Omega$

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	0.47	A	
Average on-state current	$I_{T(AV)}$	0.3	A	Commercial frequency, sine half wave 180° conduction, $T_a=62^\circ\text{C}$
Surge on-state current	$I_{TSM}$	20	A	60Hz sine half wave, 1full cycle, peak value, non-repetitive
$I^2t$ for fusing	$I^2t$	1.6	$\text{A}^2\text{s}$	Value corresponding to 1cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	$P_{GM}$	0.5	W	
Average gate power dissipation	$P_{G(AV)}$	0.1	W	
Peak gate forward voltage	$V_{FGM}$	6	V	
Peak gate reverse voltage	$V_{RGM}$	6	V	
Peak gate forward current	$I_{FGM}$	0.3	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

### Electrical Characteristics

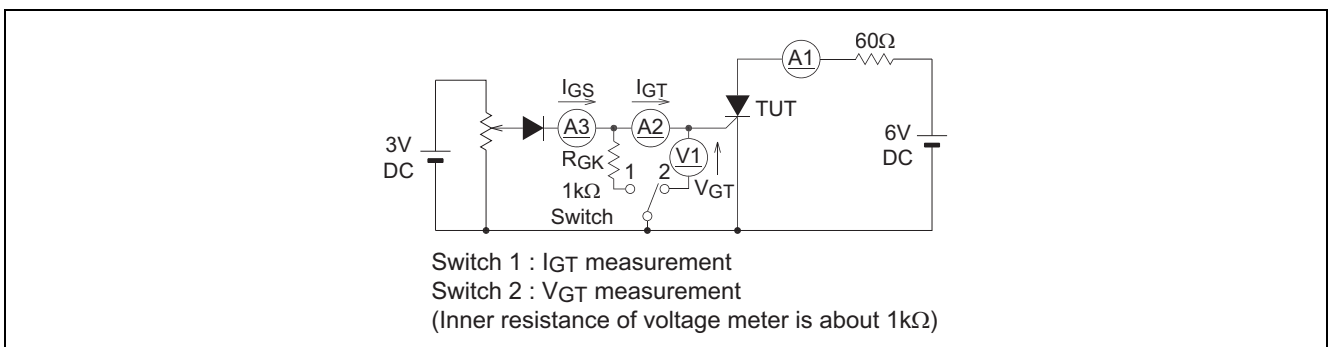
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak reverse current	$I_{RRM}$	—	—	0.1	mA	$T_j = 125^\circ\text{C}$ , $V_{RRM}$ applied
Repetitive peak off-state current	$I_{DRM}$	—	—	0.1	mA	$T_j = 125^\circ\text{C}$ , $V_{DRM}$ applied $R_{GK} = 1\text{ k}\Omega$
On-state voltage	$V_{TM}$	—	—	1.8	V	$T_j = 25^\circ\text{C}$ , $I_{TM} = 4\text{ A}$ instantaneous value
Gate trigger voltage	$V_{GT}$	—	—	0.8	V	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $I_T = 0.1\text{ A}$ <sup>Note3</sup>
Gate non-trigger voltage	$V_{GD}$	0.2	—	—	V	$T_j = 125^\circ\text{C}$ , $V_D = 1/2 V_{DRM}$ $R_{GK} = 1\text{ k}\Omega$
Gate trigger current	$I_{GT}$	1 <sup>Note2</sup>	—	100 <sup>Note2</sup>	$\mu\text{A}$	$T_j = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $I_T = 0.1\text{ A}$ <sup>Note3</sup>
Holding current	$I_H$	—	—	3	mA	$T_j = 25^\circ\text{C}$ , $V_D = 12\text{ V}$ , $R_{GK} = 1\text{ k}\Omega$
Thermal resistance	$R_{th(j-a)}$	—	—	180	$^\circ\text{C/W}$	Junction to ambient

Notes: 2. If special values of  $I_{GT}$  are required, choose item A, B, D or E from those listed in the table below if possible.

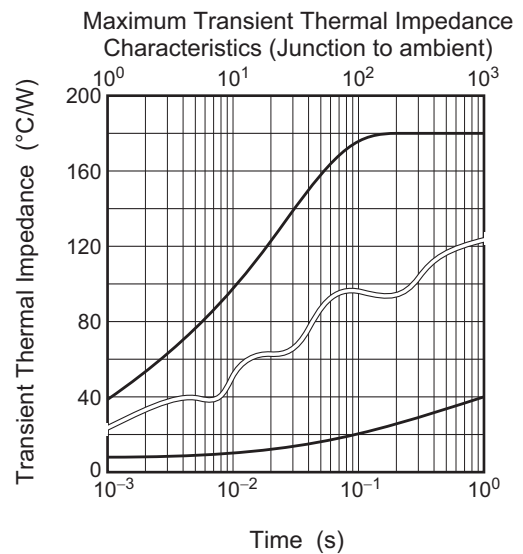
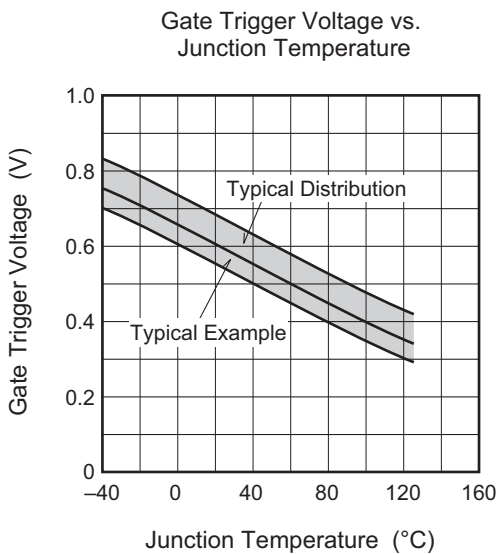
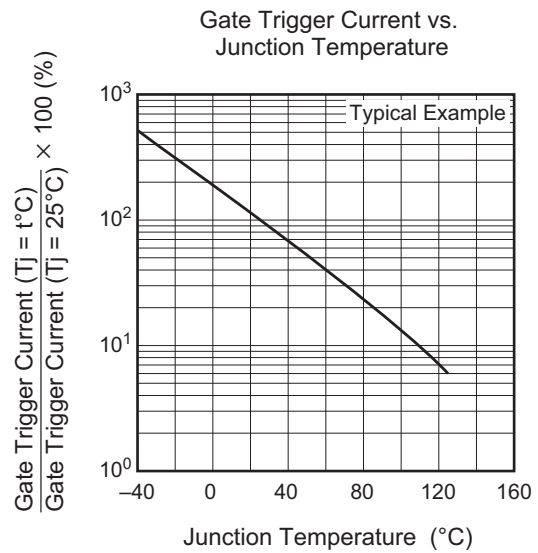
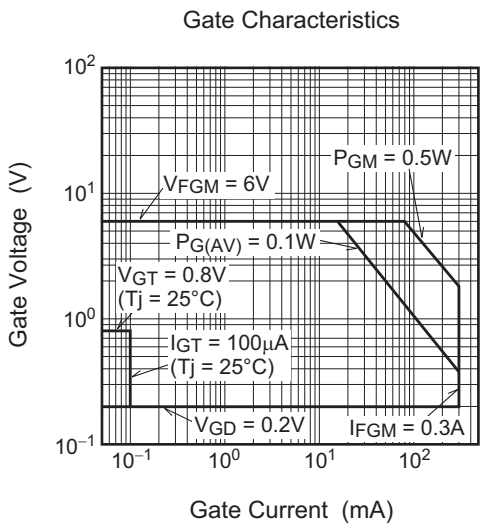
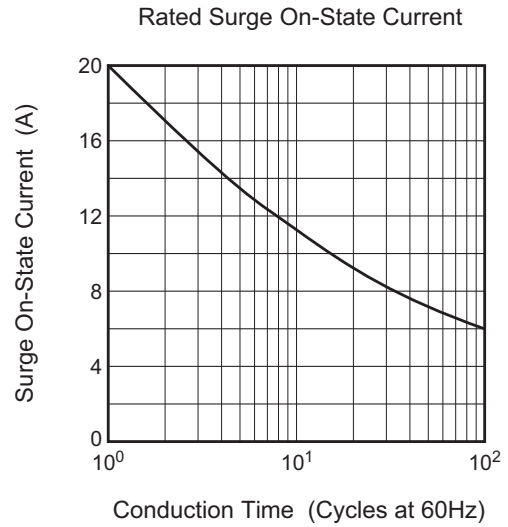
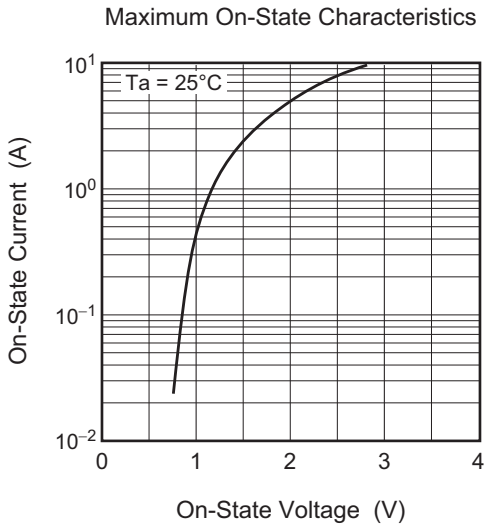
Item	A	B	D	E
$I_{GT}$ ( $\mu\text{A}$ )	1 to 30	20 to 50	1 to 50	20 to 100

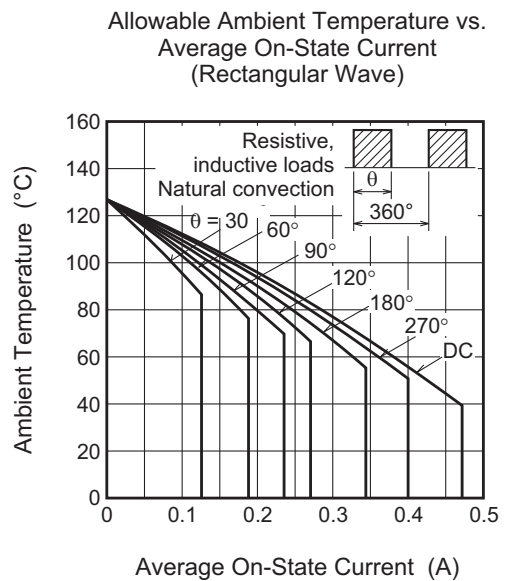
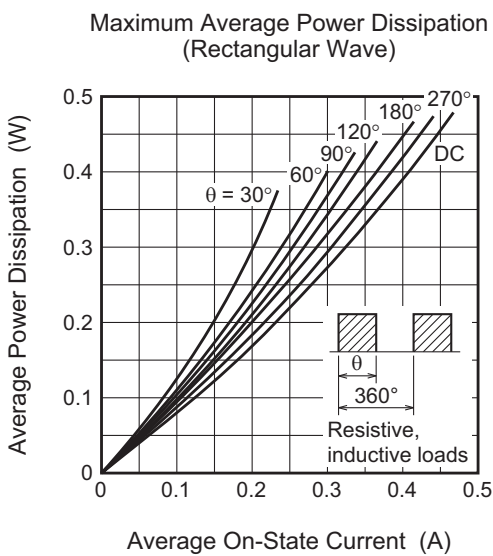
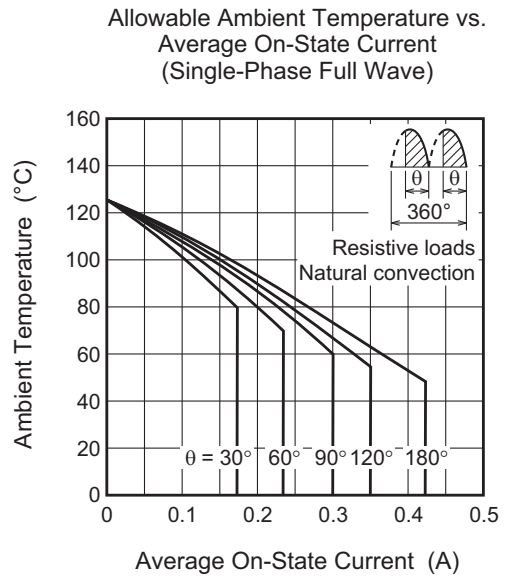
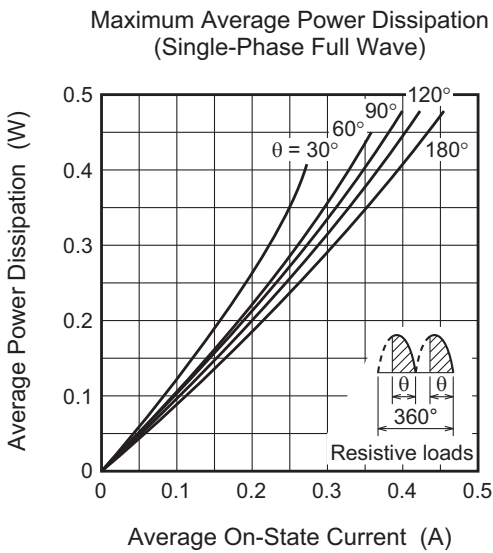
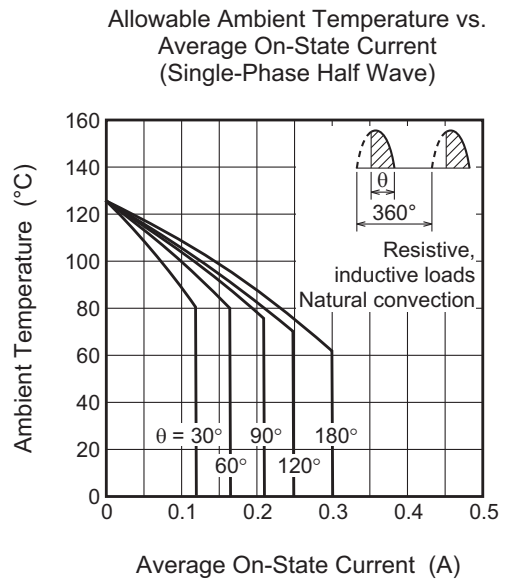
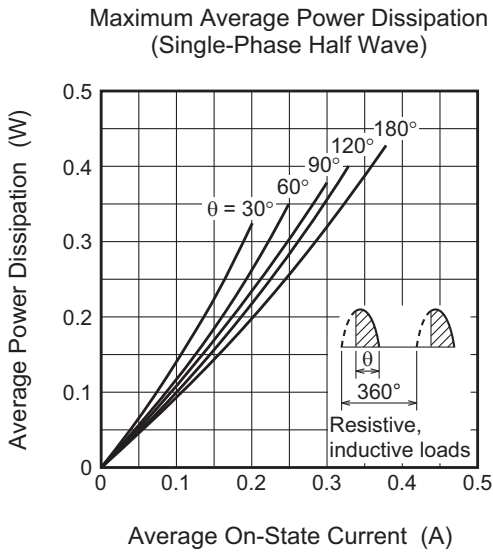
The above values do not include the current flowing through the 1 k $\Omega$  resistance between the gate and cathode.

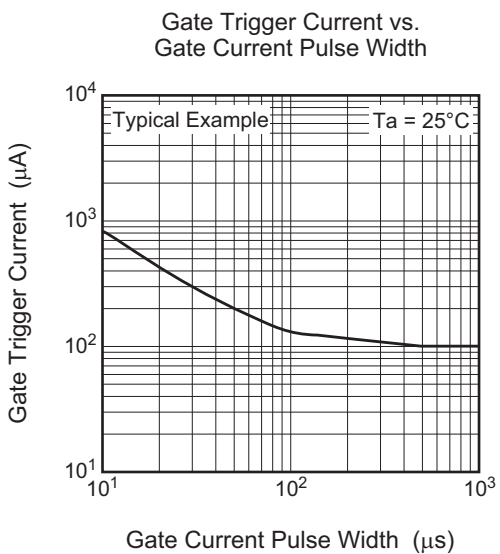
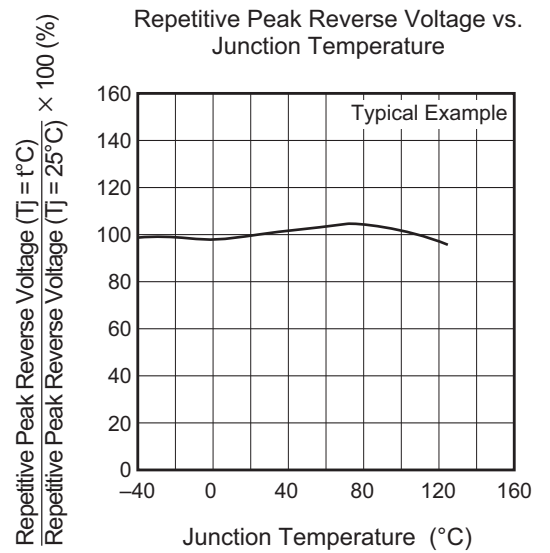
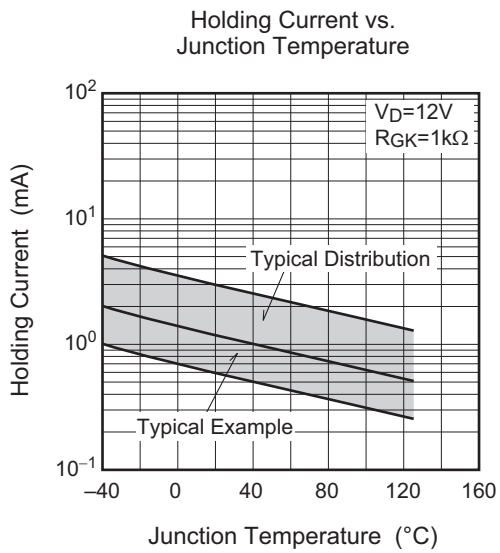
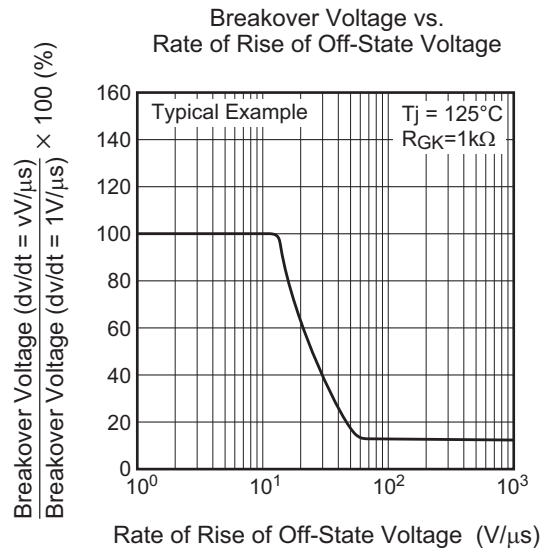
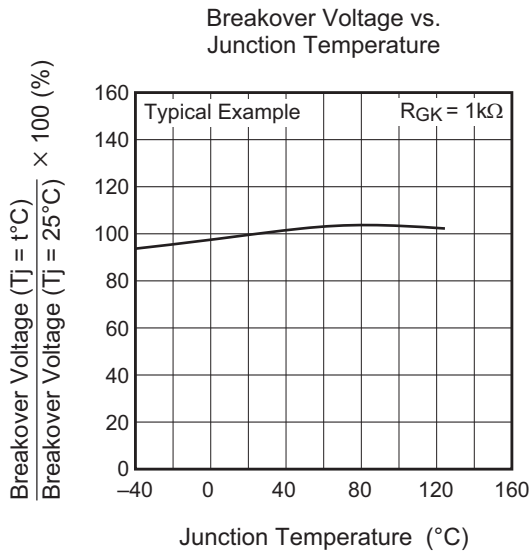
3.  $I_{GT}$ ,  $V_{GT}$  measurement circuit.



Performance Curves







## Package dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-92*	SC-43A	PRSS003EA-A	T920	0.23g

Unit: mm

The technical drawing shows the package dimensions in millimeters. The top view is a square with a maximum width of  $\phi 5.0$  mm and a width of 4.4 mm. The height of the package body is 5.0 mm maximum. The leads are 11.5 mm minimum in length. The distance between the leads is 1.25 mm. The side view shows a lead height of 1.1 mm and a lead width of 3.6 mm. A circumscribed circle of  $\phi 0.7$  mm is shown around the leads.

## Ordering Information

Orderable Part Number	Packing	Quantity	Remark
CR03AM-16A#B00	Bag	500 pcs.	Straight type
CR03AM-16A-B#B00	Bag	500 pcs.	Straight type, I <sub>GT</sub> item : B
CR03AM-16A-A6#B00	Bag	500 pcs.	A6 Lead form
CR03AM-16A-TB#B00	Adhesive Tape	2000 pcs.	A8 Lead form
CR03AM-16A-BTB#B00	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item : B

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

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