

# CR05AM-16A

Thyristor  
Low Power Use

R07DS0988EJ0100  
Rev.1.00  
Dec 05, 2012

## 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	$I_{TSM}$	10	A	60 Hz sine half wave, 1 full cycle, peak value, non-repetitive
$I^2t$ for fusing	$I^2t$	0.4	$\text{A}^2\text{s}$	Value corresponding to 1 cycle of half wave 60 Hz, 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

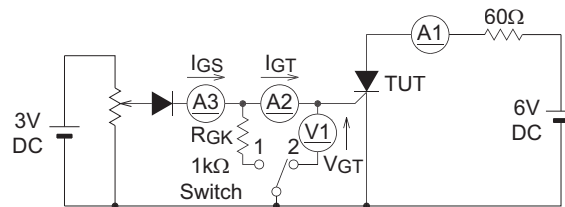
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak reverse current	$I_{RRM}$	—	—	0.1	mA	$T_j = 125^\circ\text{C}$ , $V_{RRM}$ applied
Repetitive peak off-state current	$I_{DRM}$	—	—	0.1	mA	$T_j = 125^\circ\text{C}$ , $V_{DRM}$ applied $R_{GK} = 1\text{ k}\Omega$
On-state voltage	$V_{TM}$	—	—	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>Note2</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>Note2</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 D or E from those listed in the table below if possible.

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

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

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

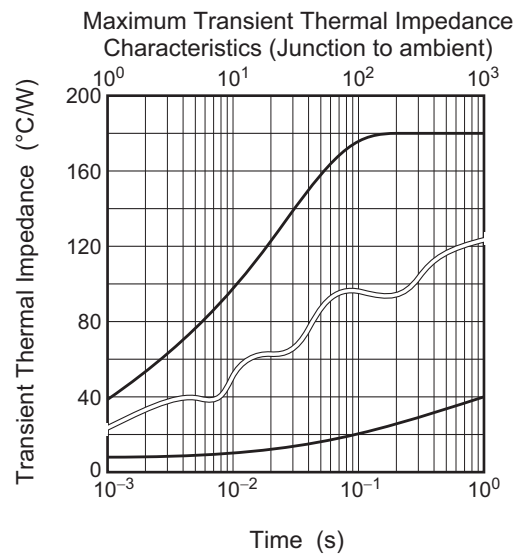
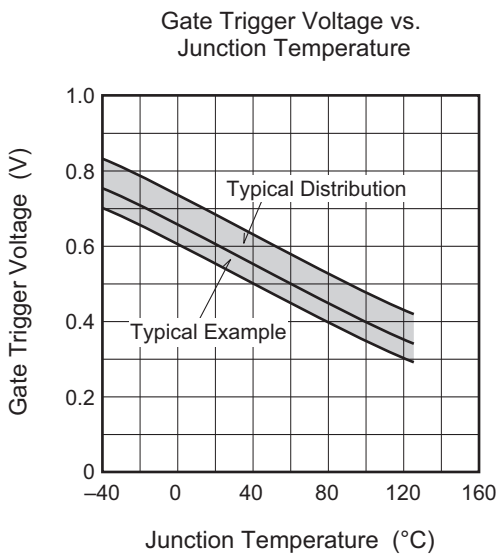
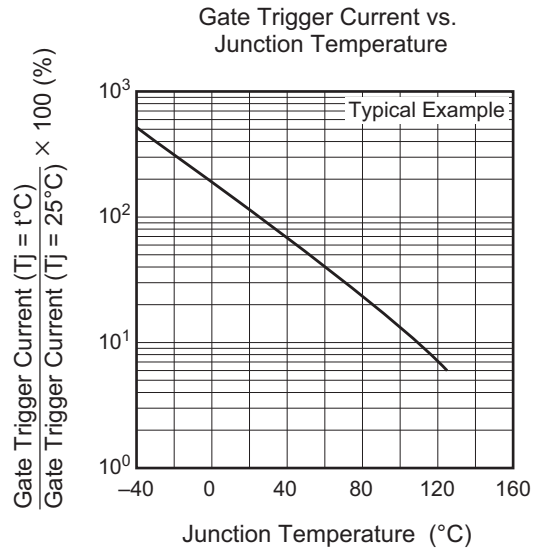
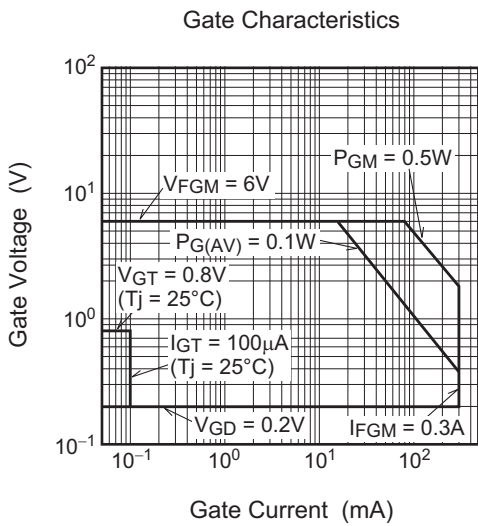
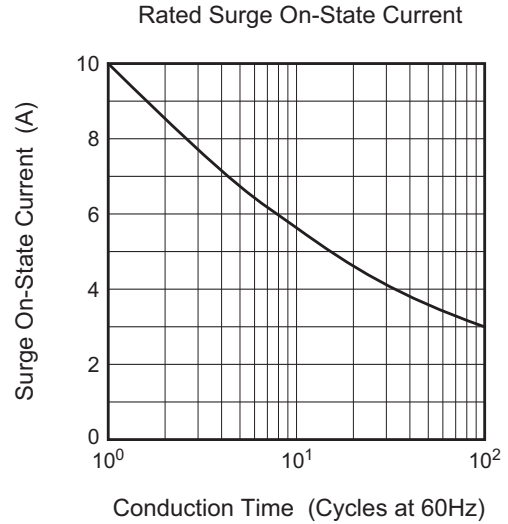
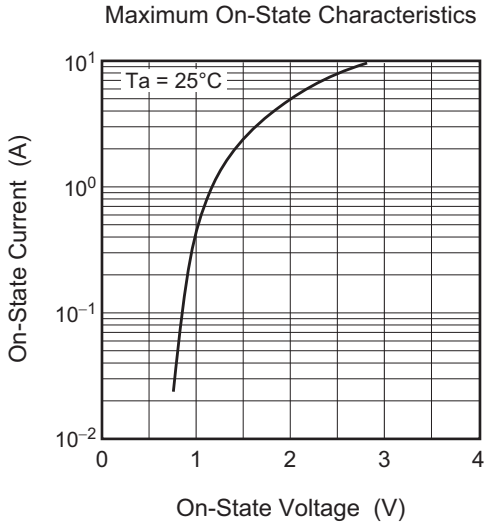


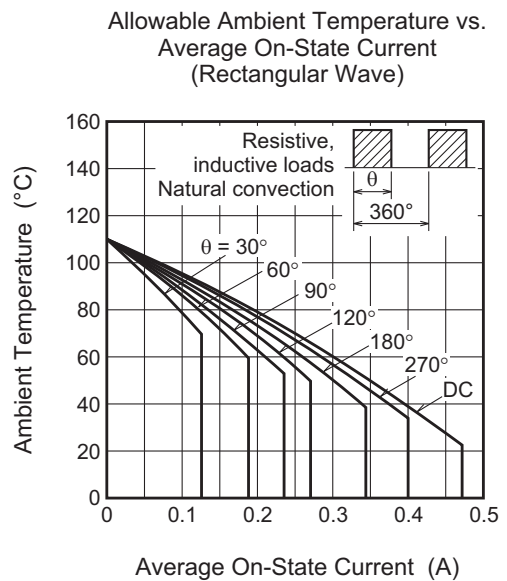
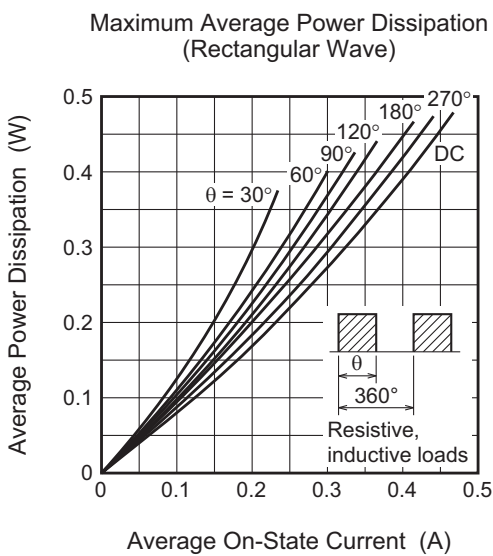
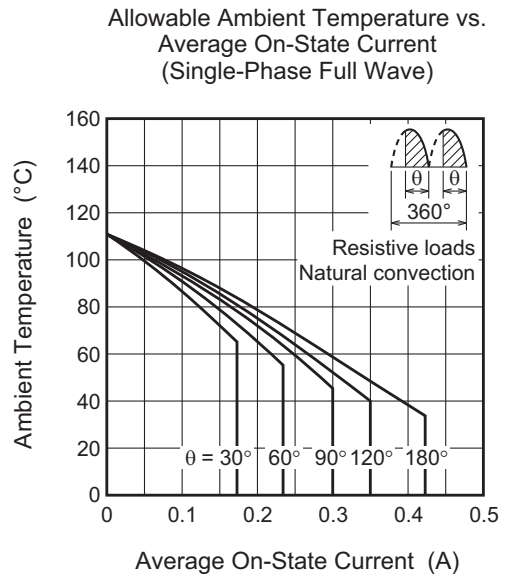
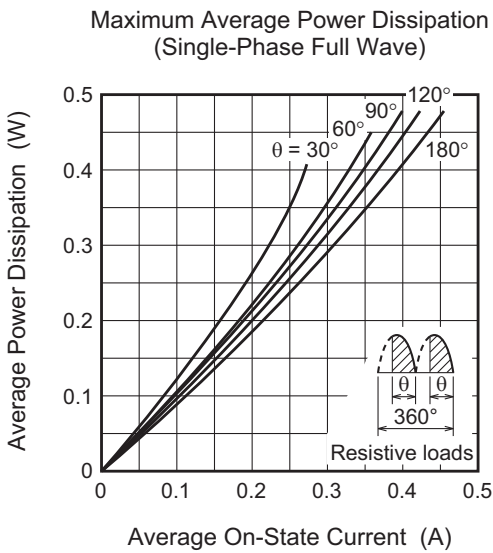
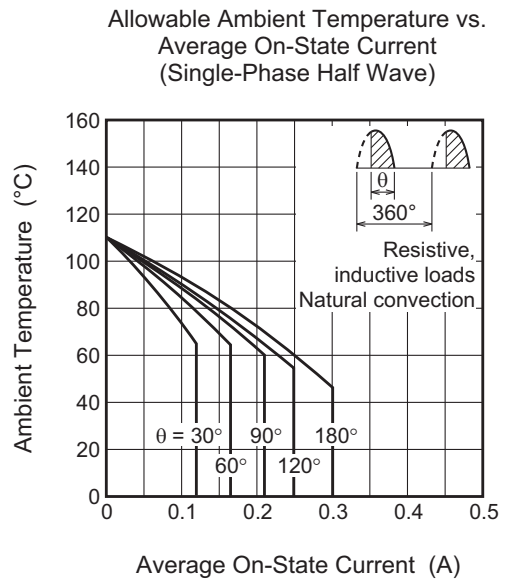
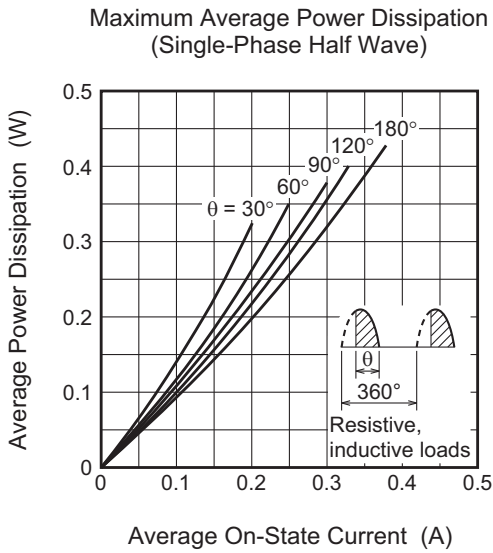
Switch 1 :  $I_{GT}$  measurement

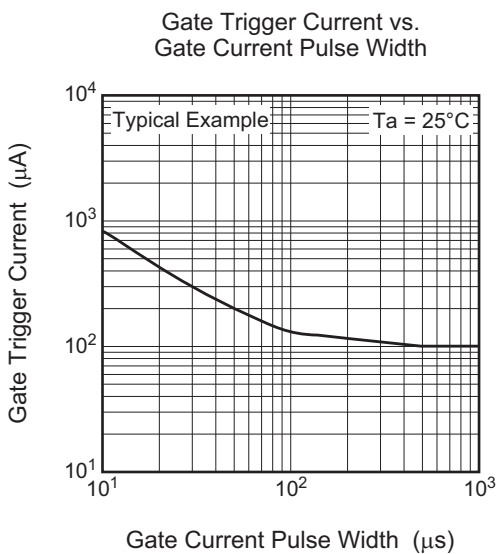
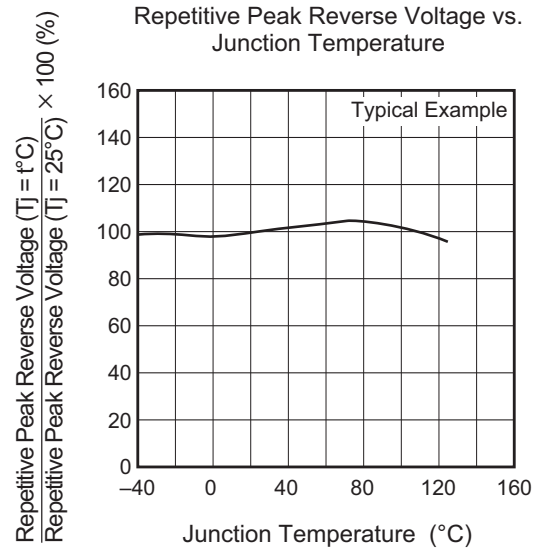
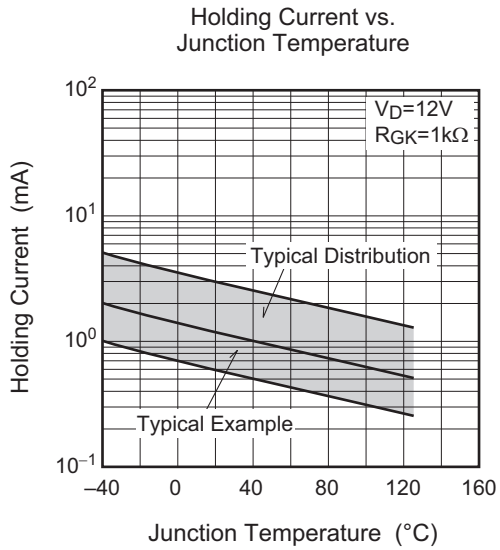
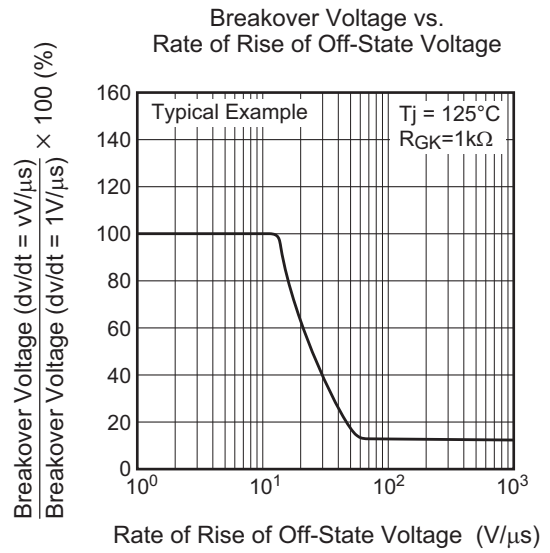
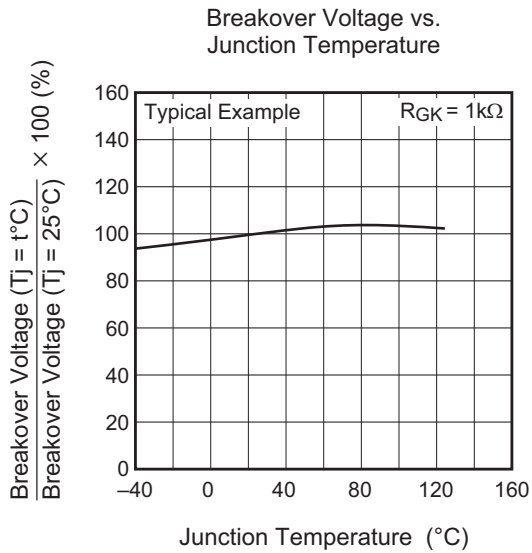
Switch 2 :  $V_{GT}$  measurement

(Inner resistance of voltage meter is about  $1\text{ k}\Omega$ )

Performance Curves







## Package dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-92*	SC-43A	PRSS0003EA-A	T920	0.23g

Unit: mm

## Ordering Information

Orderable Part Number	Packing	Quantity	Remark
CR05AM-16A#B00	Bag	500 pcs.	Straight type
CR05AM-16A-A6#B00	Bag	500 pcs.	A6 Lead form
CR05AM-16A-TB#B00	Embossed Tape	2000 pcs.	A8 Lead form, Taping direction "TB"

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

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