

# CR05AM-16A

800V - 0.3A - Thyristor

Low Power Use

R07DS0988EJ0300

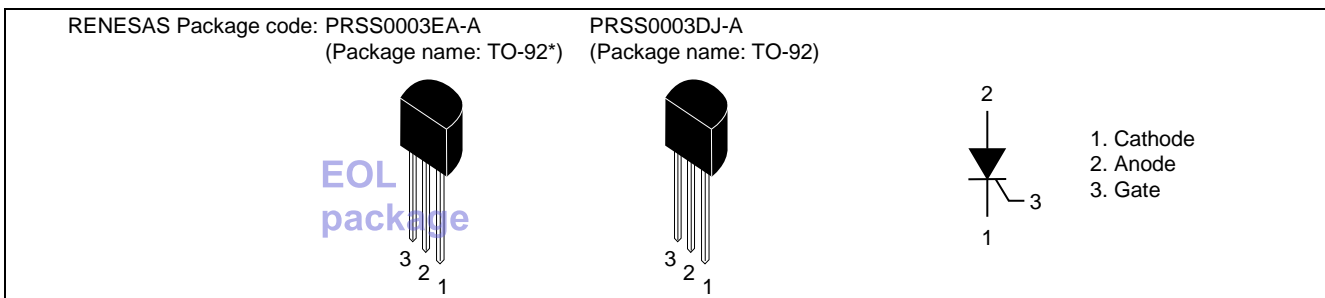
Rev.3.00

Feb. 22, 2022

## Features

- $I_T(AV)$ : 0.3 A
- $V_{DRM}$ : 800 V
- $I_{GT}$ : 100  $\mu$ A
- RoHS Compliant
- Planar Passivation Type
- Halogen-free (PRSS0003DJ-A)
- Completely Pb-free (PRSS0003DJ-A)

## Outline



## Application

Igniter, solid state relay, strobe flasher, circuit breaker, and other general purpose applications.

## 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  $R_{GK}=1$  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 sinewave 1 full cycle, peak value, non-repetitive
$I^2t$ for fusing	$I^2t$	0.4	A <sup>2</sup> 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	$^\circ\text{C}$	

**Electrical Characteristics**

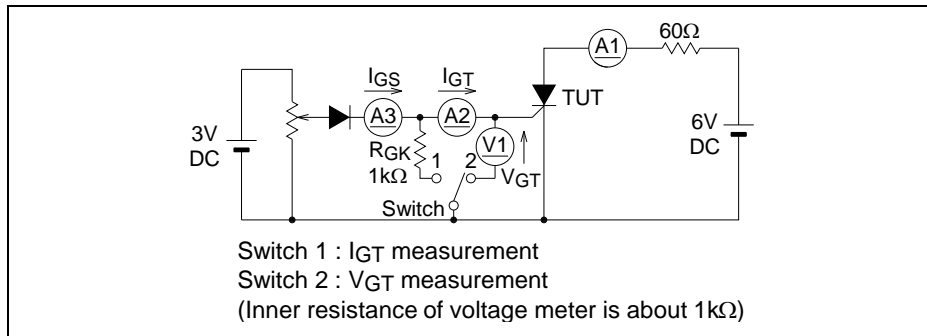
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak reverse current	$I_{RRM}$	—	—	0.1	mA	$T_j = 125^\circ\text{C}$ , $V_{RRM}$ applied
Repetitive peak off-state current	$I_{DRM}$	—	—	0.1	mA	$T_j = 125^\circ\text{C}$ , $V_{DRM}$ applied $R_{GK}=1\text{ k}\Omega$
On-state voltage	$V_{TM}$	—	—	1.8	V	$T_c = 25^\circ\text{C}$ , $I_{TM} = 4\text{ A}$ , 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 B or D from those listed in the table below.

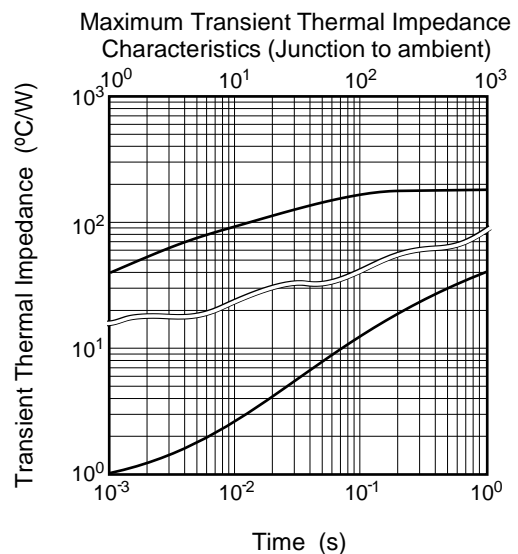
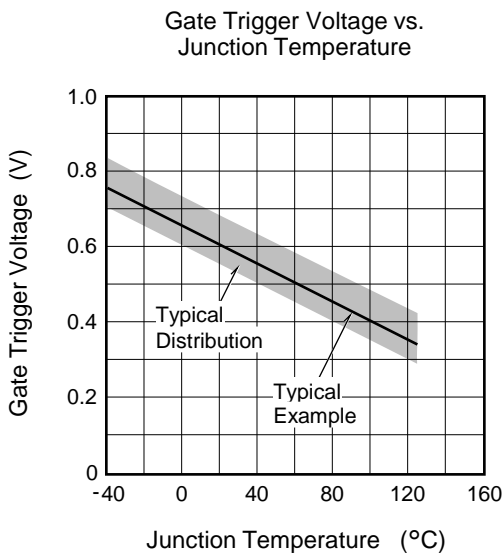
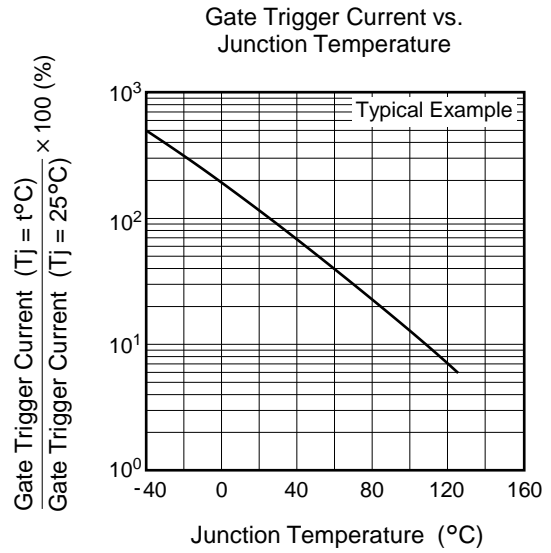
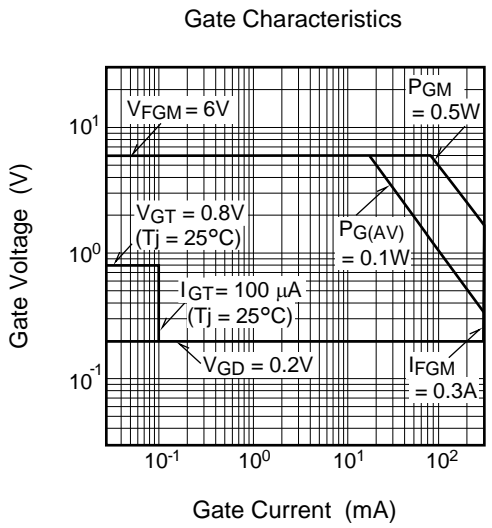
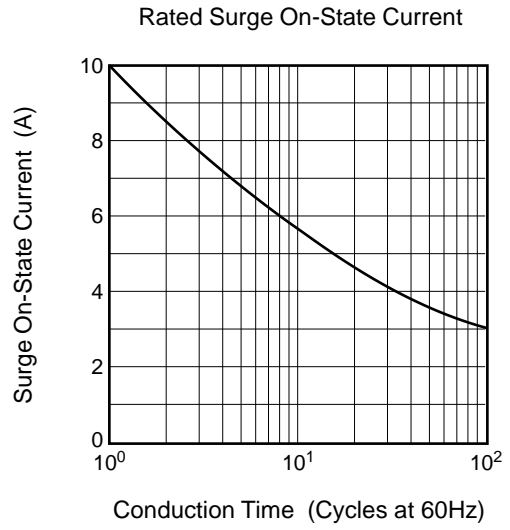
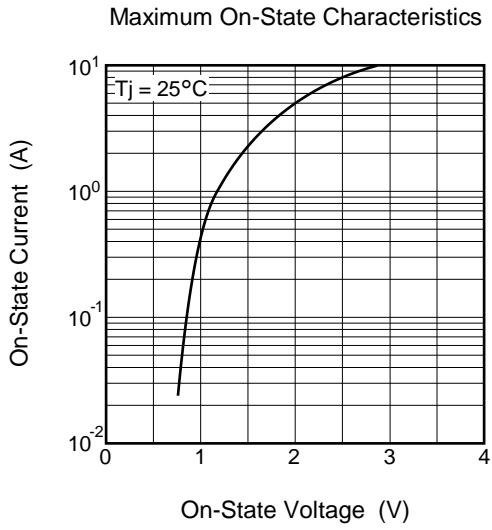
Item	B	D
$I_{GT}$ ( $\mu\text{A}$ )	20 to 50	1 to 50

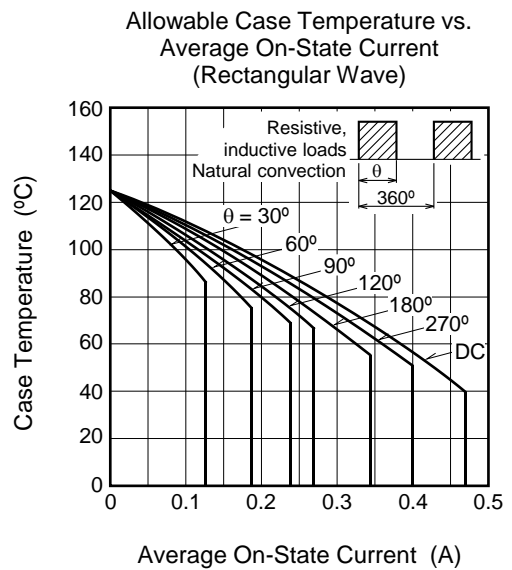
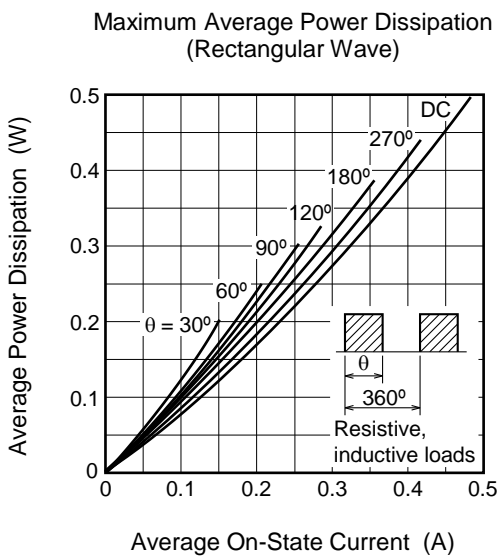
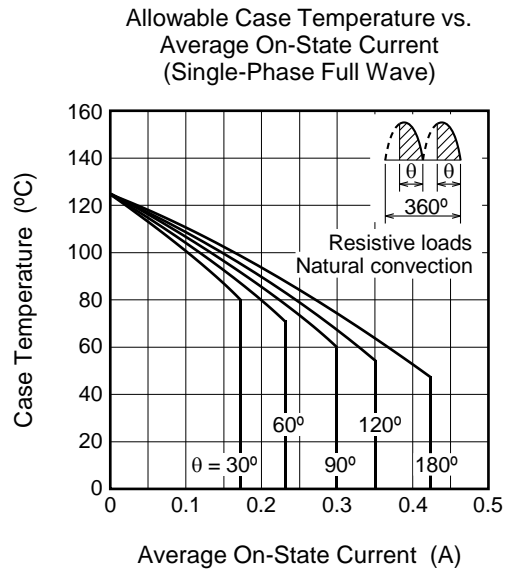
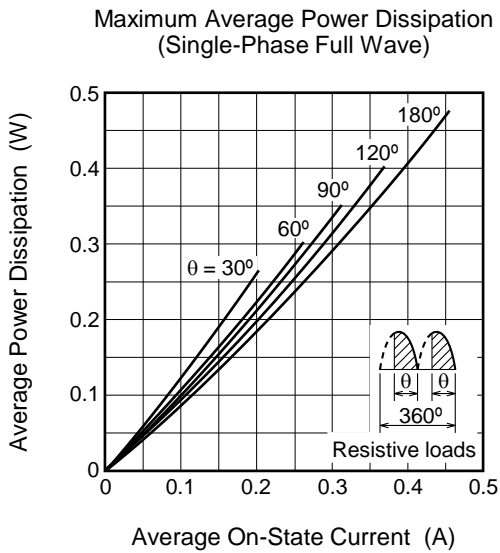
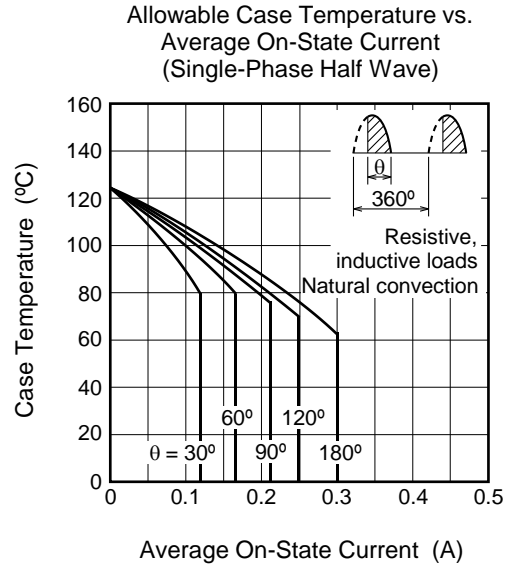
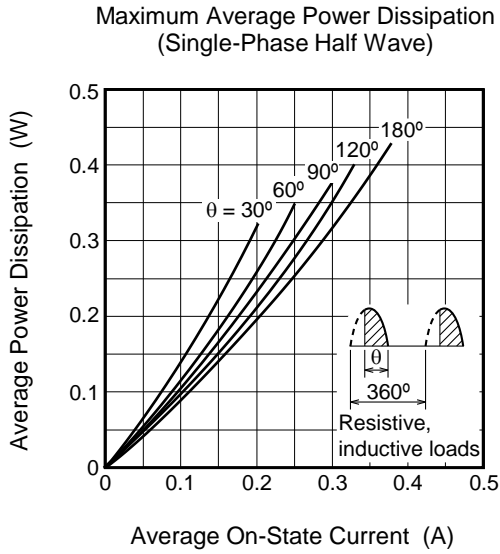
The above values do not include the current flowing through the 1 k $\Omega$  resistance between the gate and cathode.

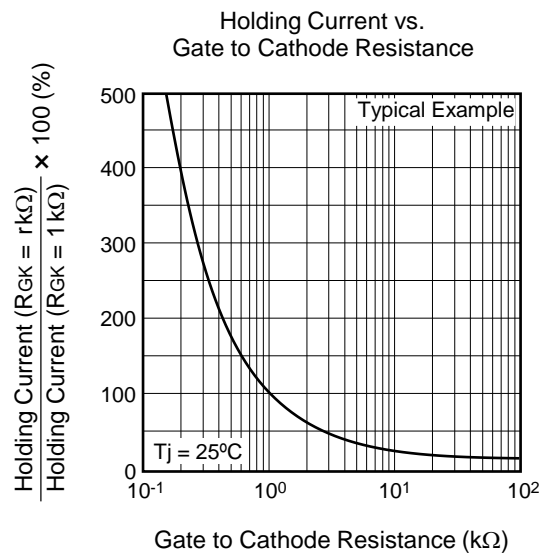
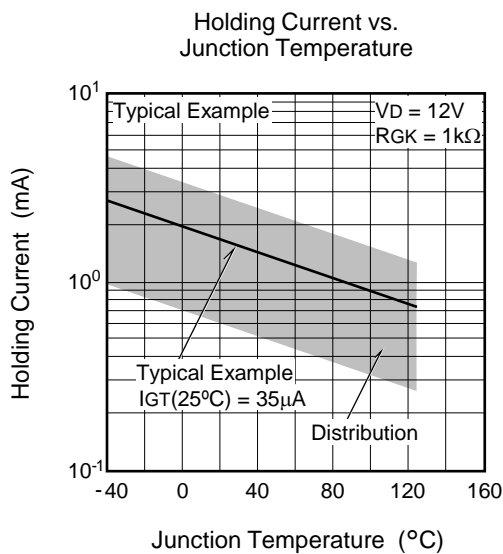
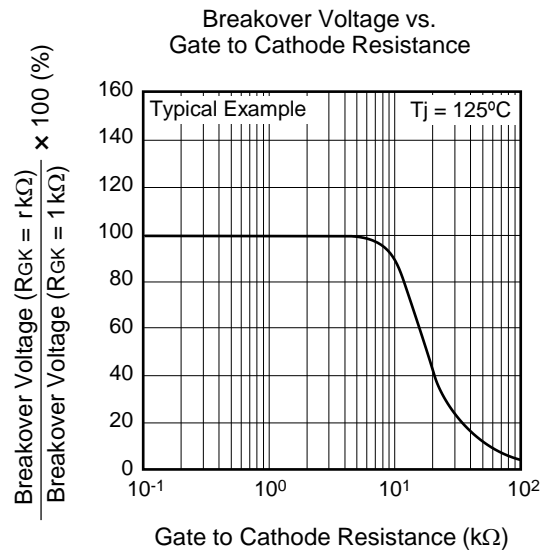
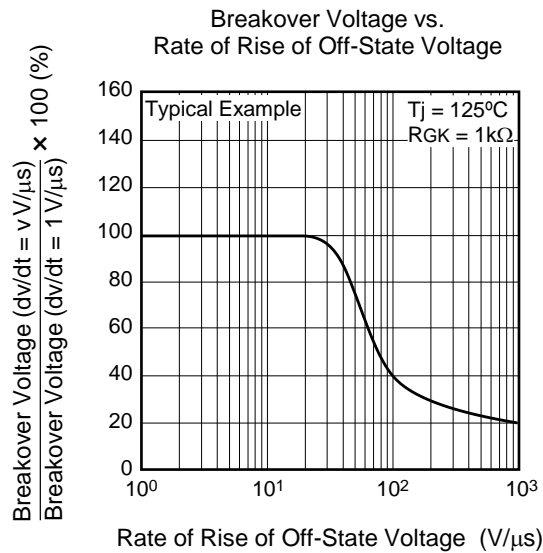
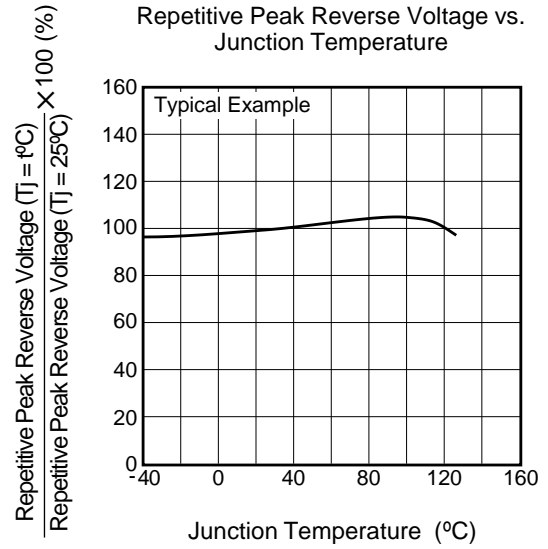
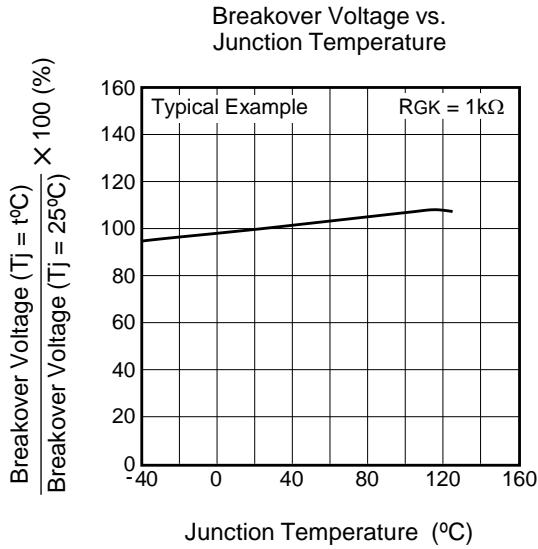
3.  $I_{GT}$ ,  $V_{GT}$  measurement circuit.



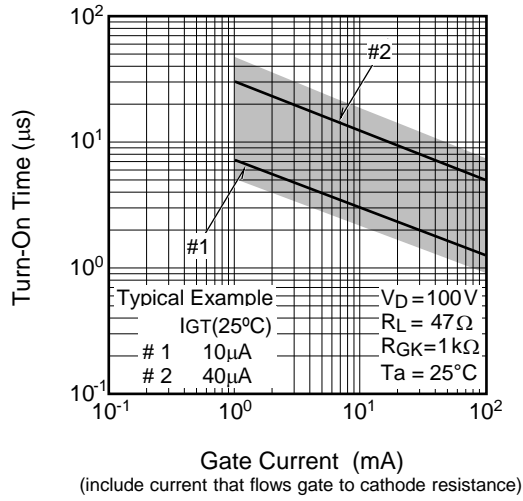
Performance Curves



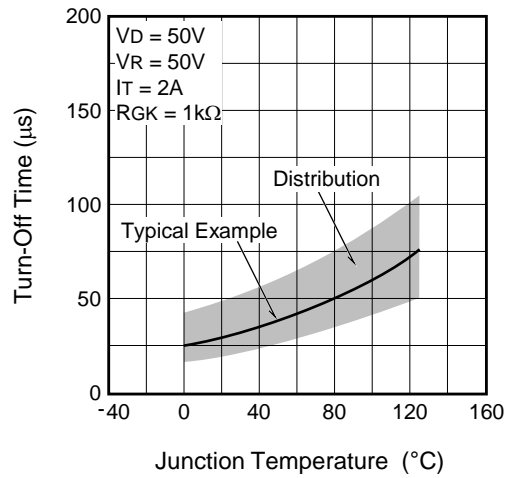




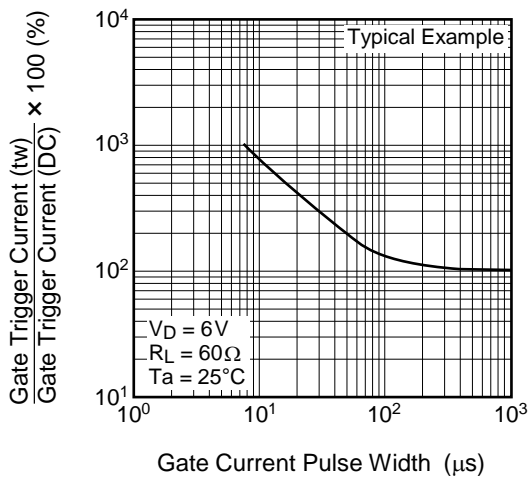
Turn-On Time vs. Gate Current



Turn-Off Time vs. Junction Temperature

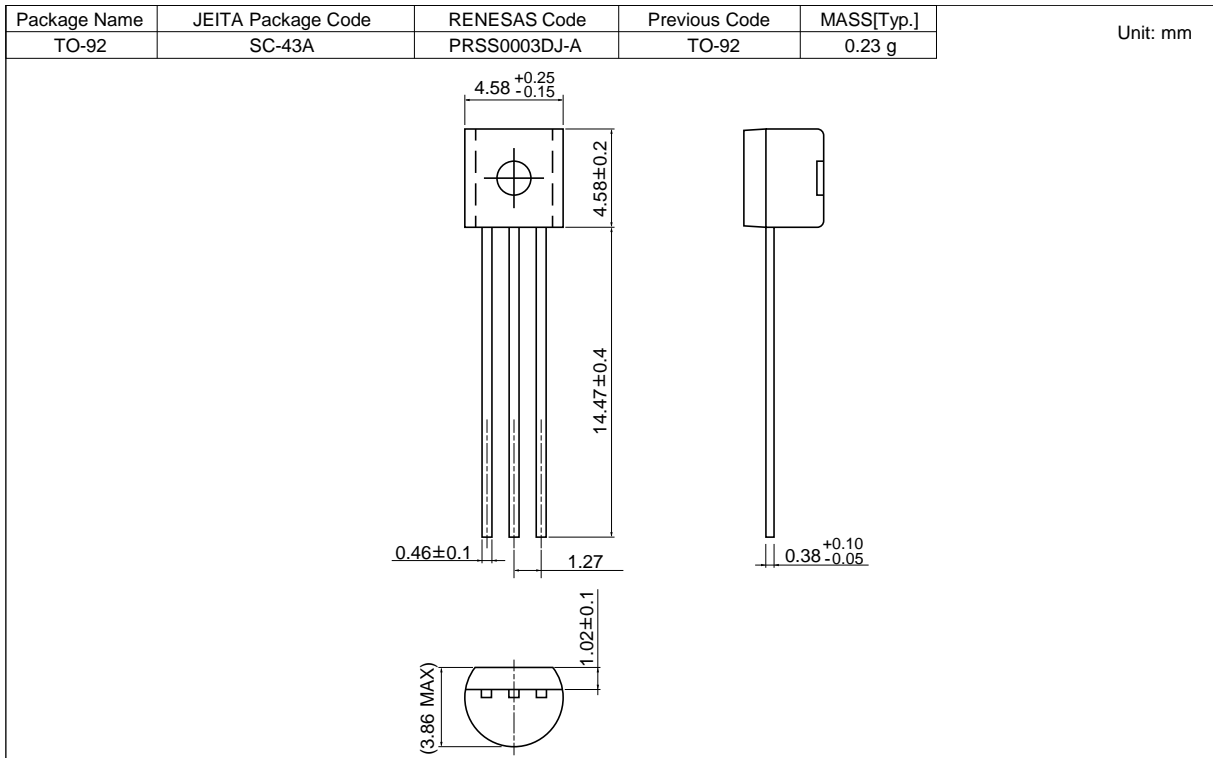


Gate Trigger Current vs. Gate Current Pulse Width

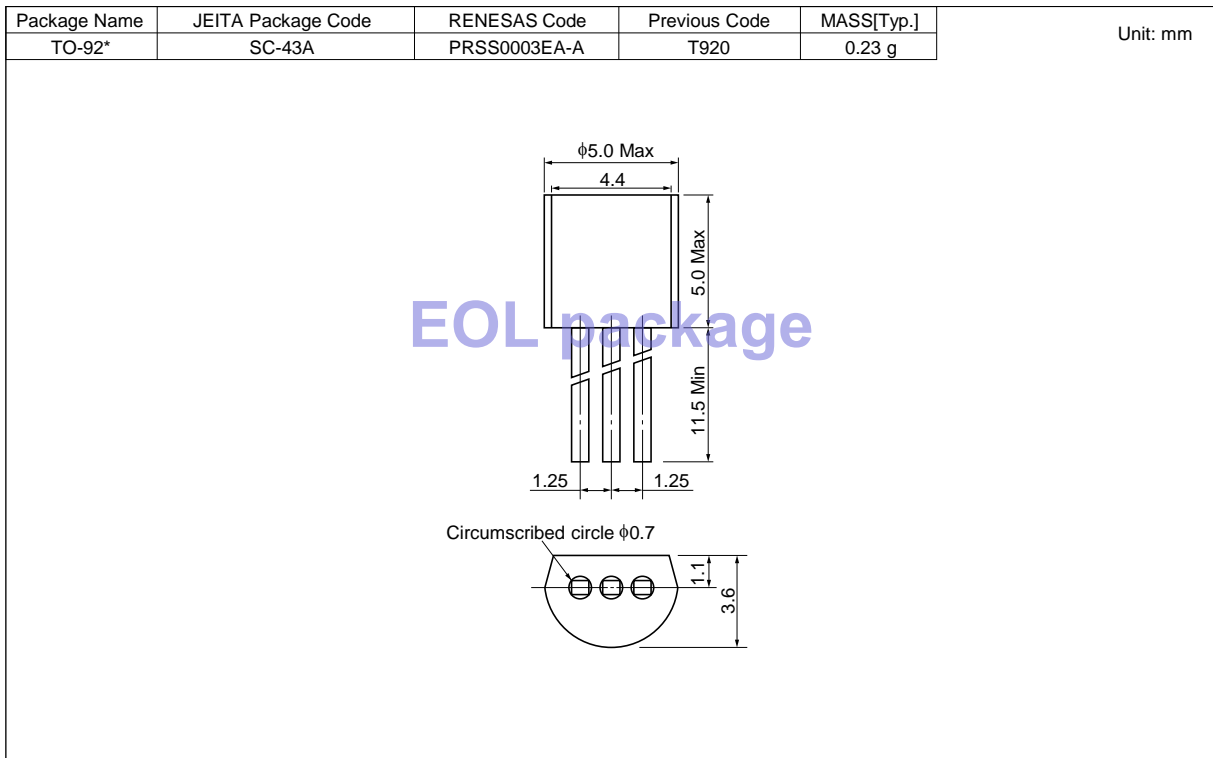


### Package Dimensions

Ordering code: #BD0 <Active>



Ordering code: #B00 <Obsolete>



## Ordering Information

Orderable Part Number	Package	Packing <sup>Note4</sup>	Quantity	Remark	Status
CR05AM-16A#BD0	TO-92	Plastic Bag	1000 pcs.	Straight type	Active
CR05AM-16A-BTB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item: B	
CR05AM-16A-DTB#BD0	TO-92	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item: D	
CR05AM-16A#B00	TO-92*	Plastic Bag	500 pcs.	Straight type	Obsolete
CR05AM-16A-BTB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item: B	
CR05AM-16A-DTB#B00	TO-92*	Adhesive Tape	2000 pcs.	A8 Lead form, I <sub>GT</sub> item: D	

Note: 4. Please confirm the specification about the shipping in detail.



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(Rev.4.0-1 November 2017)



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**Renesas Electronics America Inc.**  
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Tel: +1-408-432-8888, Fax: +1-408-434-5351

**Renesas Electronics Canada Limited**  
9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3  
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**Renesas Electronics Europe Limited**  
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Tel: +44-1628-651-700

**Renesas Electronics Europe GmbH**  
Arcadiastrasse 10, 40472 Düsseldorf, Germany  
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

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Room 1709 Quantum Plaza, No.27 ZhichunLu, Haidian District, Beijing, 100191 P. R. China  
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

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Tel: +86-21-2226-0888, Fax: +86-21-2226-0999

**Renesas Electronics Hong Kong Limited**  
Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong  
Tel: +852-2265-6688, Fax: +852 2886-9022

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**Renesas Electronics India Pvt. Ltd.**  
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Tel: +91-80-67208700, Fax: +91-80-67208777

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