



## CR03AM-16

Preliminary

SCR

### THYRISTOR LOW POWER USE

#### DESCRIPTION

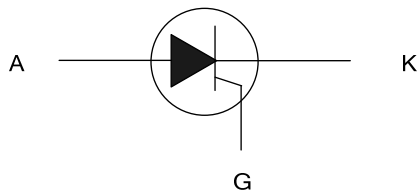
The UTC **CR03AM-16** is a thyristor, it uses UTC's advanced technology to provide customers with low gate trigger current and high repetitive peak off-state voltage, etc.

The UTC **CR03AM-16** is suitable for gas igniter, timer, and leakage protector.

#### FEATURES

- \* Low gate trigger current
- \* High repetitive peak off-state voltage

#### SYMBOL

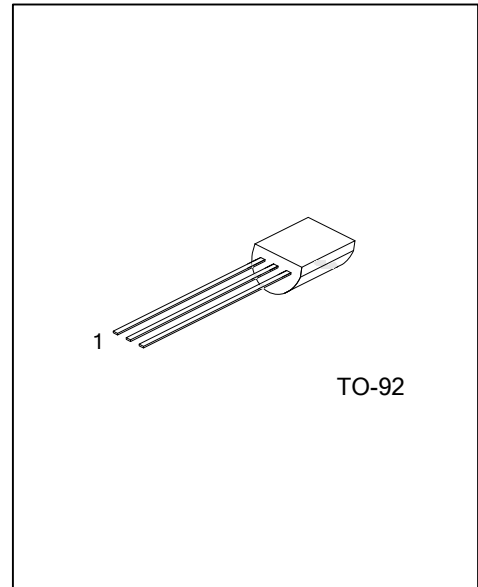


#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
CR03AM-16L-x-T92-K	CR03AM-16G-x-T92-K	TO-92	K	A	G	Bulk
CR03AM-16L-x-T92-B	CR03AM-16G-x-T92-B	TO-92	K	A	G	Tape Box
CR03AM-16L-x-T92-R	CR03AM-16G-x-T92-R	TO-92	K	A	G	Tape Reel

Note: Pin Assignment: A: Anode, K: Cathode, G: Gate

<p>CR03AM-16L-x-T92-B</p> <p>(1) Packing Type (2) Package Type (3) Rank (4) Lead Free</p>	<p>(1) K: Bulk, B: Tape Box, R: Tape Reel (2) T92: TO-92 (3) refer to CLASSIFICATION OF I<sub>GT</sub> (4) L: Lead Free, G: Halogen Free</p>
---	--



### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
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 (Note 1)		$V_{DRM}$	800	V
Non-Repetitive Peak Off-State Voltage (Note 1)		$V_{DSM}$	960	V
DC Off-State Voltage (Note 1)		$V_{D(DC)}$	640	V
RMS On-State Current		$I_{T(RMS)}$	0.47	A
Average On-State Current	Commercial Frequency, Sine Half Wave 180° Conduction, $T_A=62^{\circ}\text{C}$	$I_{T(AV)}$	0.3	A
Surge On-State Current	60 Hz Sine Half Wave, 1 Full Cycle, Peak Value, Non-Repetitive	$I_{TSM}$	20	A
$I^2t$ for Fusing	Value Corresponding to 1 Cycle of Half Wave 60Hz, Surge On-State Current	$I^2t$	1.6	$\text{A}^2\text{s}$
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
Mass (Typical Value)			0.23	g
Operating Junction Temperature		$T_J$	-40~+125	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-40~+125	$^{\circ}\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.  
2. With gate to cathode resistance  $R_{GK}=1\text{k}\Omega$

### ■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	180	$^{\circ}\text{C/W}$

### ■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Repetitive Peak Reverse Current	$I_{RRM}$	$T_J=125^{\circ}\text{C}$ , $V_{RRM}$ Applied			0.1	mA
Repetitive Peak Off-State Current	$I_{DRM}$	$T_J=125^{\circ}\text{C}$ , $V_{DRM}$ Applied, $R_{GK}=1\text{k}\Omega$			0.1	mA
On-State Voltage	$V_{TM}$	$T_J=25^{\circ}\text{C}$ , $I_{TM}=4\text{A}$ Instantaneous Value			1.8	V
Gate Trigger Voltage	$V_{GT}$	$T_J=25^{\circ}\text{C}$ , $V_D=6\text{V}$ , $I_T=0.1\text{A}$ (Note 1)			0.8	V
Gate Non-Trigger Voltage	$V_{GD}$	$T_J=125^{\circ}\text{C}$ , $V_D=1/2V_{DRM}$ $R_{GK}=1\text{k}\Omega$	0.2			V
Gate Trigger Current (Note 1)	$I_{GT}$	$T_J=25^{\circ}\text{C}$ , $V_D=6\text{V}$ , $I_T=0.1\text{A}$ (Note 1)	1		100	$\mu\text{A}$
Holding Current	$I_H$	$T_J=25^{\circ}\text{C}$ , $V_D=12\text{V}$ , $R_{GK}=1\text{k}\Omega$			3	mA

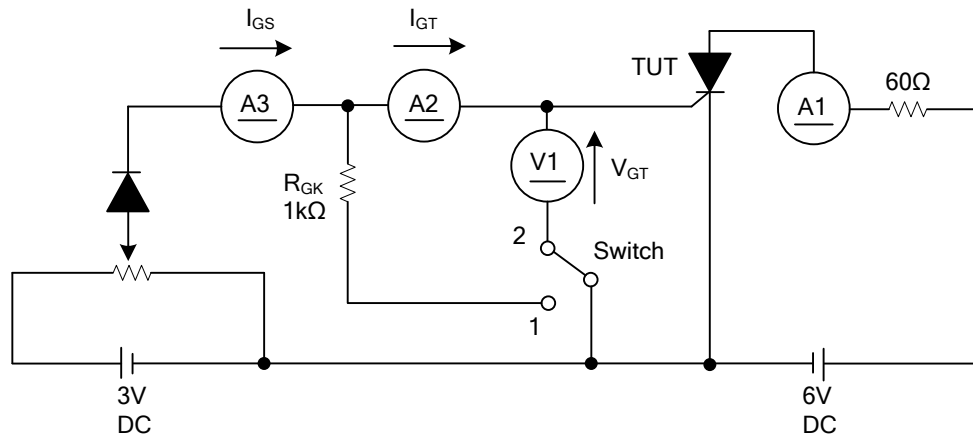
Note: 1. If special values of  $I_{GT}$  are required, choose item D or E from those listed in the table below if possible.

### ■ CLASSIFICATION OF $I_{GT}$

RANK	D	E
$I_{GT}$	1~50	20~100

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

■  $I_{GT}$  ,  $V_{GT}$  MEASUREMENT CIRCUIT



Switch 1:  $I_{GT}$  Measurement

Switch 2:  $V_{GT}$  Measurement

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

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.