UNISONIC TECHNOLOGIES CO., LTD

CR03AM-16   Preliminary   *SCR*
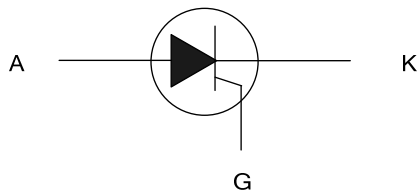
THYRISTOR LOW POWER USE

■ 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

TO-92

■ 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

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

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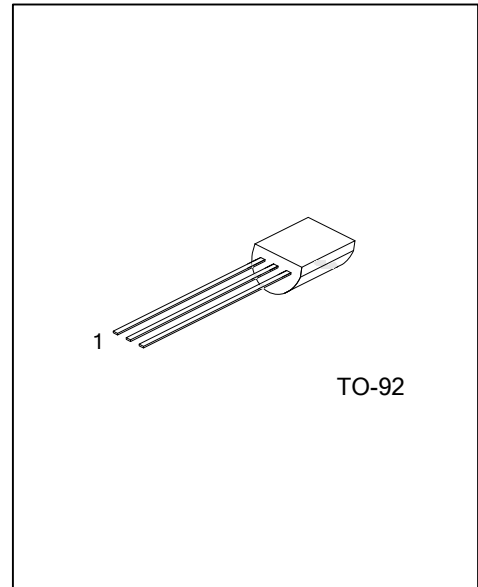
■ **ABSOLUTE MAXIMUM RATINGS**

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°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	A^2s
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	°C
Storage Temperature		T_{STG}	-40~+125	°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}=1kΩ

■ **THERMAL DATA**

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	180	°C/W

■ **ELECTRICAL CHARACTERISTICS**

| PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Repetitive Peak Reverse Current	I_{RRM}	T_J=125°C, V_{RRM} Applied			0.1	mA
Repetitive Peak Off-State Current	I_{DRM}	T_J=125°C, V_{DRM} Applied, R_{GK}=1kΩ			0.1	mA
On-State Voltage	V_{TM}	T_J=25°C, I_{TM}=4A Instantaneous Value			1.8	V
Gate Trigger Voltage	V_{GT}	T_J=25°C, V_D=6V, I_T=0.1A (Note 1)			0.8	V
Gate Non-Trigger Voltage	V_{GD}	T_J= 125°C, V_D=1/2V_{DRM} R_{GK}=1kΩ	0.2			V
Gate Trigger Current (Note 1)	I_{GT}	T_J=25°C, V_D=6V, I_T=0.1A (Note 1)	1		100	μA
Holding Current	I_H	T_J=25°C, V_D=12V, R_{GK}=1kΩ			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 1kΩ resistance between the gate and cathode.

■ **I$_{GT}$, V$_{GT}$ MEASUREMENT CIRCUIT**
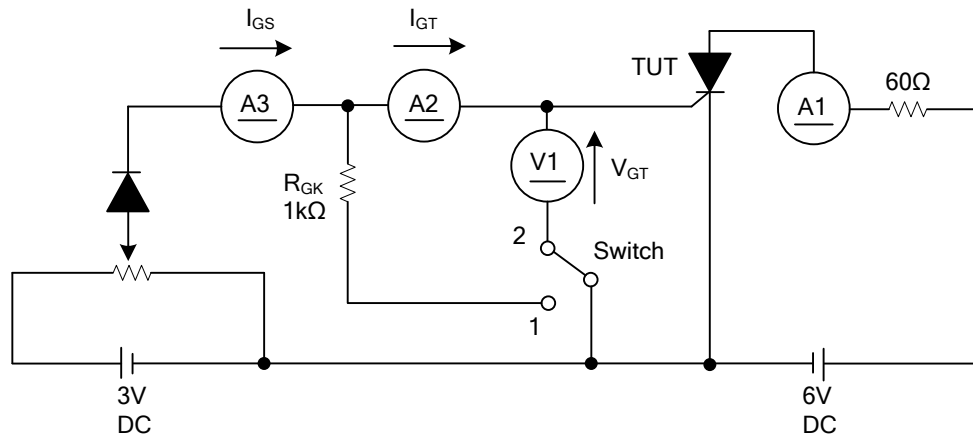
Switch 1: I$_{GT}$ Measurement
Switch 2: V$_{GT}$ Measurement
(Inner resistance of voltage meter is about 1kΩ)