



CR03AM-12

Preliminary

SCR

THYRISTOR

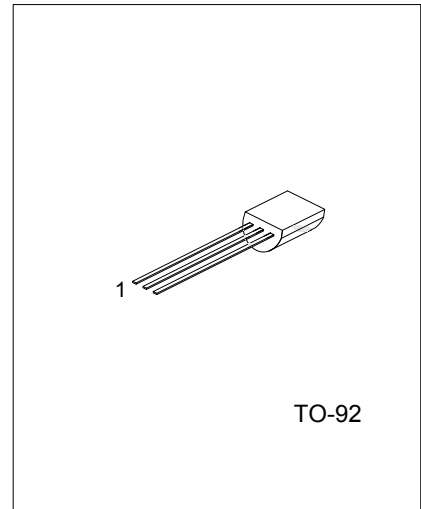
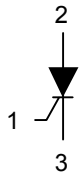
DESCRIPTION

The UTC CR03AM-12 is suitable for low power applications.

FEATURES

- \*  $I_{T(AV)}$  : 0.3 A
- \*  $V_{DRM}$  : 600 V
- \*  $I_{GT}$  : 100  $\mu$ A
- \* Non-Insulated Type
- \* Glass Passivation Type

SYMBOL



ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
CR03AMG-12-T92-B	TO-92	G	A	K	Tape Box
CR03AMG-12-T92-K	TO-92	G	A	K	Bulk

Note: Pin assignment: G: Gate K: Cathode A: Anode

<p>CR03AMG-12-T92-B</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Halogen Free</p>	<p>(1) B: Tape Box, K: Bulk</p> <p>(2) T92: TO-92</p> <p>(3) G: Halogen Free</p>
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### ■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Repetitive Peak Voltage	Reverse	$V_{RRM}$	600	V
	Off-State (Note2)	$V_{DRM}$	600	V
Non-Repetitive Peak Voltage	Reverse	$V_{RSM}$	800	V
	Off-State (Note2)	$V_{DSM}$	800	V
DC Voltage	Reverse	$V_{R(DC)}$	480	V
	Off-State (Note2)	$V_{D(DC)}$	480	V
Peak Gate Voltage	Forward	$V_{FGM}$	6	V
	Reverse	$V_{RGM}$	6	V
Peak Gate Forward Current		$I_{FGM}$	0.3	A
RMS On-State Current		$I_T(RMS)$	0.47	A
Surge On-State Current (60Hz sine half wave 1 full cycle, peak value, non-repetitive)		$I_{TSM}$	20	A
Average On-State Current (Commercial frequency, sine half wave 180° conduction, $T_a = 47^\circ\text{C}$ )		$I_{T(AV)}$	0.3	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
Mass (Typical value)			0.23	g
Junction Temperature		$T_J$	-40~+110	$^\circ\text{C}$
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	MAX	UNIT
Junction to Ambient	$\theta_{JA}$	180	$^\circ\text{C}/\text{W}$

### ■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Repetitive Peak Reverse Current	$I_{RRM}$	$T_J = 110^\circ\text{C}$ , $V_{RRM}$ applied			0.1	mA
Repetitive Peak Off-State Current	$I_{DRM}$	$T_J = 110^\circ\text{C}$ , $V_{DRM}$ applied, $R_{GK} = 1\text{k}\Omega$			0.1	mA
On-State Voltage ( $T_a = 25^\circ\text{C}$ )	$V_{TM}$	$I_{TM} = 4\text{ A}$ , instantaneous value			1.8	V
Gate Trigger Voltage	$V_{GT}$	$T_J = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $I_T = 0.1\text{ A}$			0.8	V
Gate Non-Trigger Voltage	$V_{GD}$	$T_J = 110^\circ\text{C}$ , $V_D = 1/2 V_{DRM}$ , $R_{GK} = 1\text{k}\Omega$	0.2			V
Gate Trigger Current	$I_{GT}$	$T_J = 25^\circ\text{C}$ , $V_D = 6\text{ V}$ , $I_T = 0.1\text{ A}$	1		100	$\mu\text{A}$
Holding Current	$I_H$	$T_J = 25^\circ\text{C}$ , $V_D = 12\text{ V}$ , $R_{GK} = 1\text{k}\Omega$		1.5	3	mA

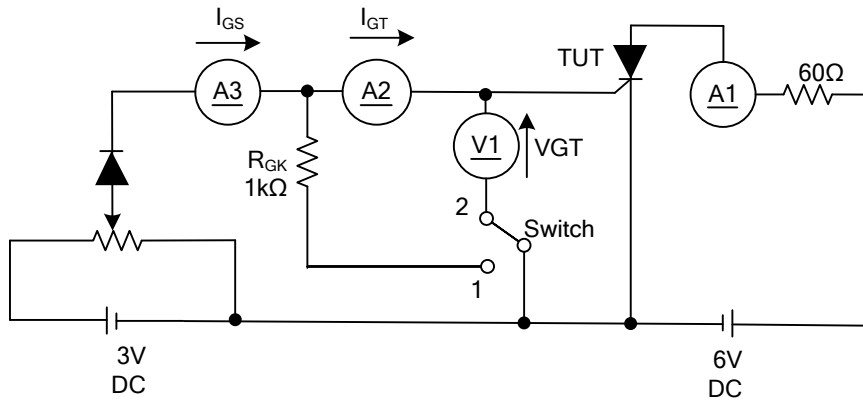
### ■ CLASSIFICATION OF $I_{GT}$

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

RANK	A	B	C	D	E
RANGE	$1\mu\text{A} \sim 30\mu\text{A}$	$20\mu\text{A} \sim 50\mu\text{A}$	$40\mu\text{A} \sim 100\mu\text{A}$	$1\mu\text{A} \sim 5\mu\text{A}$	$20\mu\text{A} \sim 100\mu\text{A}$

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

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