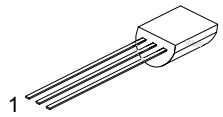
CR03AM-12

Preliminary **SCR**

THYRISTOR



TO-92

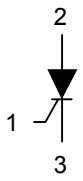
■ DESCRIPTION

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

■ FEATURES

* $I_{T\ (AV)}$: 0.3 A
* V_{DRM} : 600 V
* I_{GT} : 100 μA
* 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

CR03AMG-12-T92-B (1)Packing Type (2)Package Type (3)Halogen Free	(1) B: Tape Box, K: Bulk (2) T92: TO-92 (3) G: Halogen Free

■ 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, Ta = 47°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	A^2s
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	°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	MAX	UNIT
Junction to Ambient	θ_{JA}	180	℃/W

■ ELECTRICAL CHARACTERISTICS

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

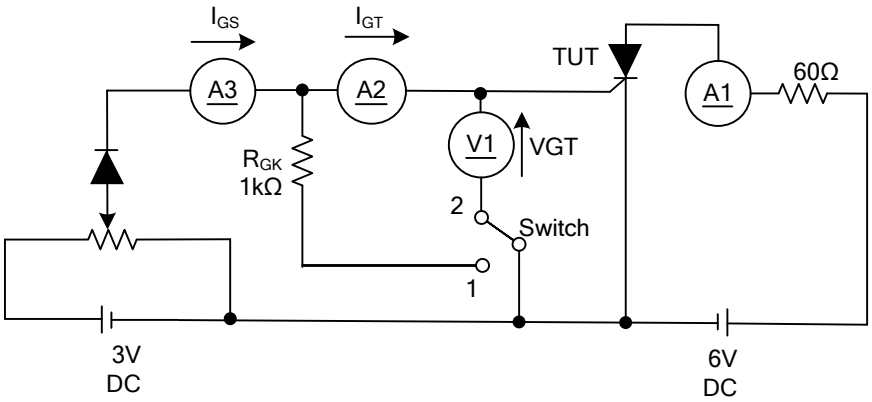
■ CLASSIFICATION OF I_{GT}

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	1μA ~ 30μA	20μA ~ 50μA	40μA ~ 100μA	1μA ~ 5μA	20μA ~100 μA

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