



UBCR302

Preliminary

TRIACS

2A TRIAC

DESCRIPTION

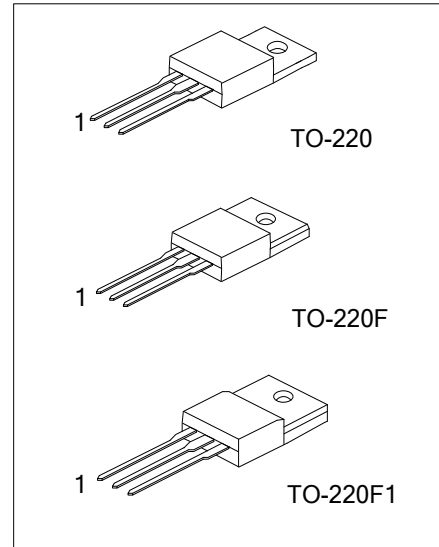
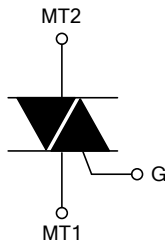
The UTC **UBCR302** is a 2A triacs which can be operated in 3 quadrants only, it uses UTC's advanced technology to provide customers with high commutation performances, etc.

The UTC **UBCR302** is suitable for use in electric pot, electric rice cooker and controller for other heater.

FEATURES

- * $I_{T(RMS)}$: 2A
- * V_{DRM} : 800V ($T_J=125^{\circ}C$)
- * $I_{GT\ I-II-III}$: 10mA

SYMBOL



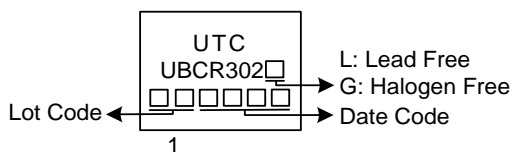
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UBCR302L-x-TA3-T	UBCR302G-x-TA3-T	TO-220	MT1	MT2	G	Tube
UBCR302L-x-TF1-T	UBCR302G-x-TF1-T	TO-220F1	MT1	MT2	G	Tube
UBCR302L-x-TF3-T	UBCR302G-x-TF3-T	TO-220F	MT1	MT2	G	Tube

Note: Pin Assignment: MT1: MT1 MT2: MT2 G: Gate

<p>UBCR302G-x-TA3-T</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) V_{DRM} (4) Green Package 	<ul style="list-style-type: none"> (1) T: Tube (2) TA3: TO-220, TF3: TO-220F, TF1: TO-220F1 (3) 8: 800V (4) G: Halogen Free and Lead Free, L: Lead Free
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MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage (Note 1)	V_{DRM} / V_{RRM}	800	V
On-State RMS Current (Commercial Frequency, Sine Full Wave 360° Conduction)	$I_{T(RMS)}$	2	A
Surge On-State Current (60Hz Sinewave 1 Full Cycle, Peak Value, Non-Repetitive)	I_{TSM}	10	A
I^2t for Fusing (Value Corresponding to 1 Cycle of Half Wave 60Hz, Surge On-State Current)	I^2t	0.41	A ² s
Peak Gate Current	I_{GM}	1	A
Peak Gate Power Dissipation	P_{GM}	1	W
Average Gate Power Dissipation	$P_{G(AV)}$	0.1	W
Peak Gate Voltage	V_{GM}	6	V
Operating Junction Temperature	T_J	-40 ~ +125	°C
Storage Junction Temperature	T_{STG}	-40 ~ +150	°C

Note: 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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Case	TO-220	3.2	°C/W
	TO-220F/TO-220F1	5.2	°C/W

■ ELECTRICAL CHARACTERISTICS ($T_J=25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Gate Trigger Current (Note 2)	I_{GT}	$T_J=25^\circ\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	I			10	mA
			II			10	mA
			III			10	mA
Gate Trigger Voltage (Note 2)	V_{GT}	$T_J=25^\circ\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	I			2.0	V
			II			2.0	V
			III			2.0	V
Gate Non-Trigger Voltage	V_{GD}	$T_J=150^\circ\text{C}$, $V_D=1/2 V_{DRM}$	0.1			V	
Holding Current (Note 2)	I_H	$I_T=300\text{mA}$		2.98		mA	
Latching Current	I_L	$I_G=1.2I_{GT}$	I-II		5	mA	
			II		10	mA	
Critical Rate of Rise of Off-State commutation Voltage (Note 3)	$(dv/dt)_c$	$T_J=125^\circ\text{C}$	0.5			V/ μs	

■ STATIC CHARACTERISTICS

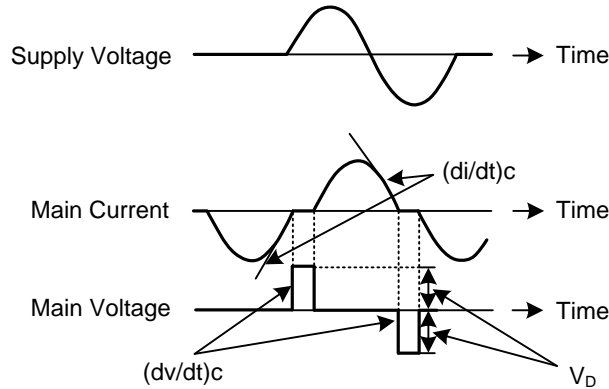
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
On-State Voltage	V_{TM}	$T_J=25^\circ\text{C}$, $I_{TM}=3\text{A}$, Instantaneous Measurement			2.1	V
Repetitive Peak Off-State Current	I_{DRM}	$T_J=150^\circ\text{C}$, V_{DRM} Applied			1.0	mA

Notes: 1. Gate open.

2. Measurement using the gate trigger characteristics measurement circuit.

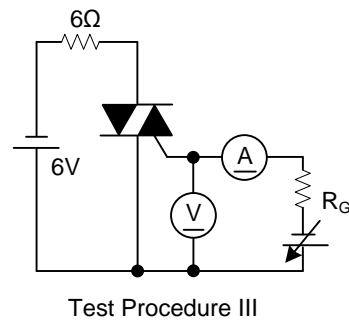
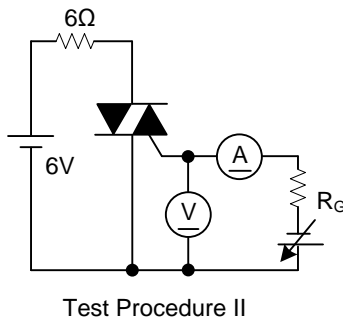
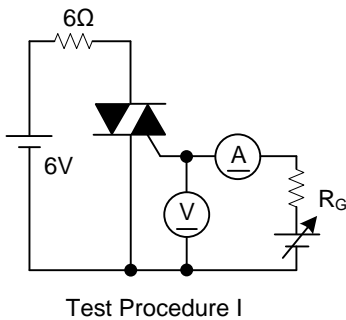
3. Test conditions of the critical-rate of rise of off-state commutation voltage is shown in the table below.

■ **COMMUTATING VOLTAGE AND CURRENT WAVEFORMS (INDUCTIVE LOAD)**



Note: Test Conditions: 1. Junction temperature: $T_J=125^{\circ}\text{C}$
 2. Rate of decay of on-state commutating current: $(di/dt)_c=-1.0\text{A/ms}$
 3. Peak off-state voltage: $V_D=400\text{V}$

■ **TEST CIRCUITS**



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