



## UBCR308

TRIAC

### 8A TRIAC

#### DESCRIPTION

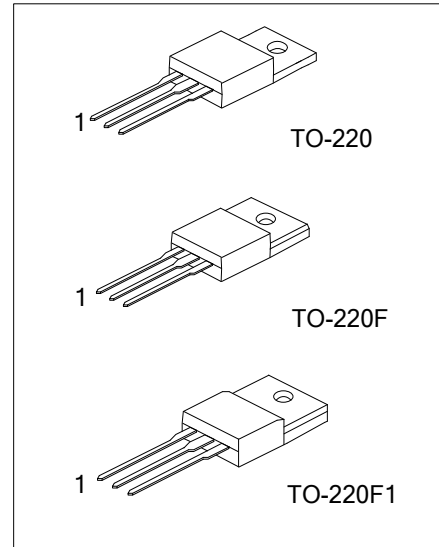
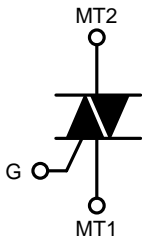
The UTC **UBCR308** is an 8A standard triac.

The UTC **UBCR308** is suitable for use in inversion operation of capacitor motor, washing machine and other general controlling devices.

#### FEATURES

- \*  $I_{T(RMS)}$ : 8A
- \*  $V_{DRM}$ : 700V
- \*  $I_{FGT}$ ,  $I_{RGT}$ ,  $I_{RGTIII}$ : 30mA

#### SYMBOL



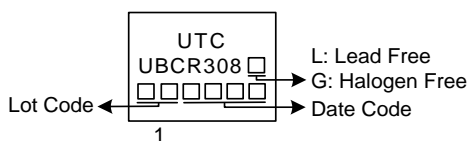
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UBCR308L-x-TA3-T	UBCR308G-x-TA3-T	TO-220	MT1	MT2	G	Tube
UBCR308L-x-TF1-T	UBCR308G-x-TF1-T	TO-220F1	MT1	MT2	G	Tube
UBCR308L-x-TF3-T	UBCR308G-x-TF3-T	TO-220F	MT1	MT2	G	Tube

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

<p>UBCR308G-x-TA3-T</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) <math>V_{DRM}</math></li> <li>(4) Green Package</li> </ul>	<ul style="list-style-type: none"> <li>(1) T: Tube</li> <li>(2) TA3: TO-220, TF3: TO-220F, TF1: TO-220F1</li> <li>(3) 7: 700V</li> <li>(4) G: Halogen Free and Lead Free, L: Lead Free</li> </ul>
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#### MARKING



## ■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage (Note)	V <sub>DRM</sub> / V <sub>RRM</sub>	700	V
On-State RMS Current (Commercial Frequency, Sine Full Wave 360° Conduction, T <sub>C</sub> =88°C)	I <sub>T(RMS)</sub>	8	A
Surge On-State Current (60Hz Sinewave 1 Full Cycle, Peak Value, Non-Repetitive)	I <sub>TSM</sub>	80	A
I <sup>2</sup> t for Fusing (Value Corresponding to 1 Cycle of Half Wave 60Hz, Surge On-State Current)	I <sup>2</sup> t	26	A <sup>2</sup> s
Peak Gate Current	I <sub>GM</sub>	2	A
Peak Gate Power Dissipation	P <sub>GM</sub>	5	W
Average Gate Power Dissipation	P <sub>G(AV)</sub>	0.5	W
Peak Gate Voltage	V <sub>GM</sub>	10	V
Isolation Voltage (Note)	V <sub>ISO</sub>	2000	V
Operating Junction Temperature	T <sub>J</sub>	-40 ~ +125	°C
Storage Junction Temperature	T <sub>STG</sub>	-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	2.0	°C/W
	TO-220F/TO-220F1	3.7	°C/W

The contact thermal resistance  $\theta_{CF}$  in case of greasing is 0.5°C/W.

## ■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub>=25 °C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Repetitive Peak Off-State Current	I <sub>DRM</sub>	T <sub>J</sub> =125°C, V <sub>DRM</sub> Applied			2.0	mA
On-State Voltage	V <sub>TM</sub>	T <sub>C</sub> =25°C, I <sub>TM</sub> =12A, Instantaneous Measurement			1.6	V
Gate Trigger Voltage (Note 2)	V <sub>GT</sub>	T <sub>J</sub> =25°C, V <sub>D</sub> =6V, R <sub>L</sub> = 6Ω, R <sub>G</sub> =330Ω	T2+G+		1.5	V
			T2+G-		1.5	V
			T2-G-		1.5	V
Gate Trigger Current (Note 2)	I <sub>GT</sub>	T <sub>J</sub> =25°C, V <sub>D</sub> =6V, R <sub>L</sub> = 6Ω, R <sub>G</sub> =330Ω	T2+G+		30 (Note 4)	mA
			T2+G-		30 (Note 4)	mA
			T2-G-		30 (Note 4)	mA
Gate Non-Trigger Voltage	V <sub>GD</sub>	T <sub>J</sub> =125°C, V <sub>D</sub> =1/2 V <sub>DRM</sub>	0.2			V
Critical Rate of Rise of Off-State commutation Voltage (Note 3)	(dv/dt) <sub>c</sub>	T <sub>J</sub> =125°C	10			V/μs

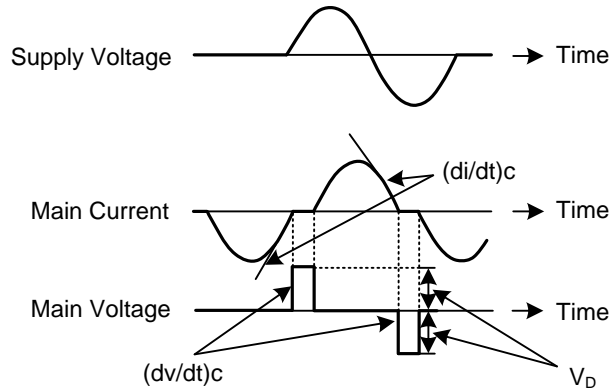
Notes: 1. Gate open.

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.

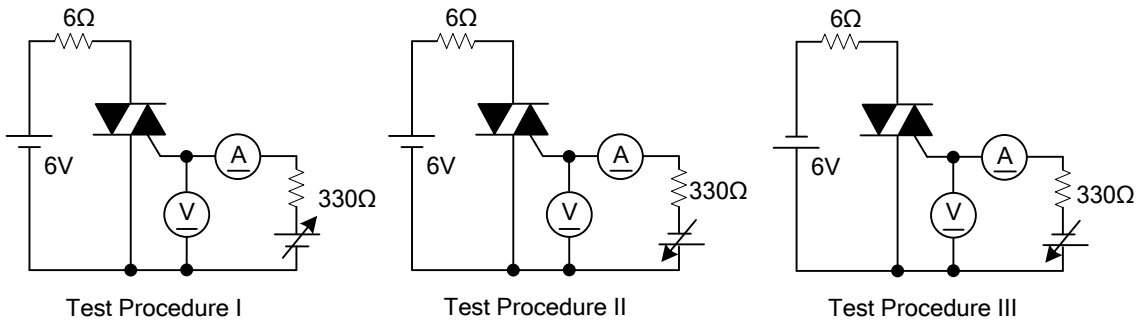
4. High sensitivity (I<sub>GT</sub>≤20mA) is also available. (I<sub>GT</sub> item: 1)

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



- Test conditions:
1. Junction temperature:  $T_J=125^{\circ}\text{C}$
  2. Rate of decay of on-state commutating current:  $(di/dt)_c=-4.0\text{A/ms}$
  3. Peak off-state voltage:  $V_D=400\text{V}$

■ **TEST CIRCUITS**



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