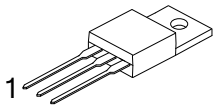
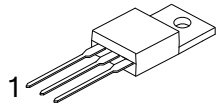
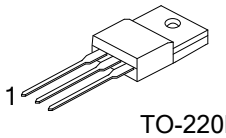
3A TRIAC



TO-220



TO-220F



TO-220F1

■ DESCRIPTION

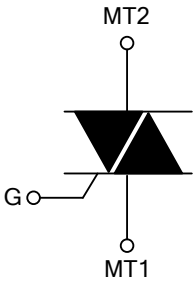
The UTC **UBCR303** is a 3A triacs which can be operated in 3 quadrants only, it uses UTC's advanced technology to provide customers with high commutation performances, etc.

The UTC **UBCR303** is suitable for inversion operation of capacitor motor, washing machine, and other general controlling devices.

■ FEATURES

* $I_{T(RMS)}$: 3A
* V_{DRM}: 800V (T_J=125°C)
* $I_{FGT\ I}$, $I_{RGT\ I}$, $I_{RGT\ III}$: 30mA

■ SYMBOL



■ ORDERING INFORMATION

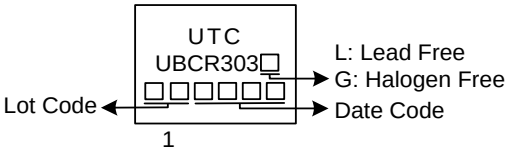
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UBCR303L-x-TA3-T	UBCR303G-x-TA3-T	TO-220	MT1	MT2	G	Tube
UBCR303L-x-TF1-T	UBCR303G-x-TF1-T	TO-220F1	MT1	MT2	G	Tube
UBCR303L-x-TF3-T	UBCR303G-x-TF3-T	TO-220F	MT1	MT2	G	Tube

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

UBCR303G-x-TA3-T

(1)Packing Type	(1) T: Tube
(2)Package Type	(2) TA3: TO-220, TF3: TO-220F, TF1: TO-220F1
(3)V_{DRM}	(3) 7: 700V, 8: 800V
(4)Green Package	(4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Repetitive Peak Off-State Voltage (Note 1)	V_{DRM} / V_{RRM}	800	V
RMS On-State Current (Commercial Frequency, Sine Full Wave 360° Conduction, T_C=130°C)	$I_{T(RMS)}$	3.0	A
Surge On-State Current (60Hz Sinewave 1 Full Cycle, Peak Value, Non-Repetitive)	I_{TSM}	30	A
I^2t for Fusing (Value Corresponding to 1 Cycle of Half Wave 60Hz, Surge On-State Current)	I^2t	3.7	A^2s
Peak Gate Power Dissipation	P_{GM}	5	W
Average Gate Power Dissipation	$P_{G(AV)}$	0.5	W
Peak Gate Voltage	V_{GM}	10	V
Peak Gate Current	I_{GM}	2	A
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 (Note 3)	TO-220	θ_{JC}	3.2	°C/W
	TO-220F1		5.2	°C/W
	TO-220F		5.2	°C/W

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

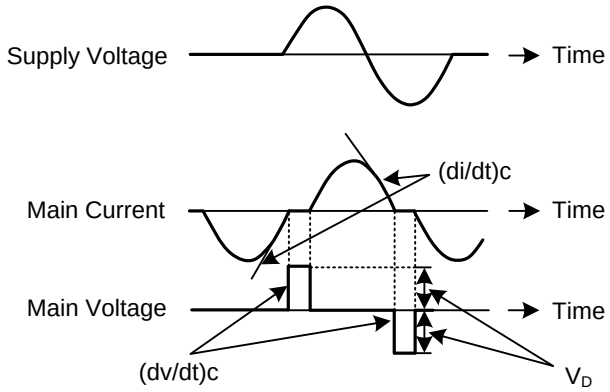
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Gate Trigger Current (Note 2)	I_{GT}	T_J=25°C, V_D=6V, R_L=6Ω, R_G=330Ω	I			30	mA
			II			30	mA
			III			30	mA
Gate Trigger Voltage (Note 2)	V_{GT}	T_J=25°C, V_D=6V, R_L=6Ω, R_G=330Ω	I			1.5	V
			II			1.5	V
			III			1.5	V
Gate Non-Trigger Voltage	V_{GD}	T_J=150°C, V_D=1/2 V_{DRM}		0.1			V
Holding Current (Note 2)	I_H	I_T=300mA			4.0		mA
Latching Current	I_L	I_G=1.2I_{GT}	I-II		8.0		mA
			II		17		mA
Critical Rate of Rise of Off-State commutation Voltage (Note 3)	(dv/dt)c	T_J=125°C		5			V/μs

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
On-State Voltage	V_{TM}	T_J=25°C, I_{TM}=4.5A, Instantaneous Measurement			1.6	V
Repetitive Peak Off-State Current	I_{DRM}	T_J=150°C, V_{DRM} Applied			2.0	mA

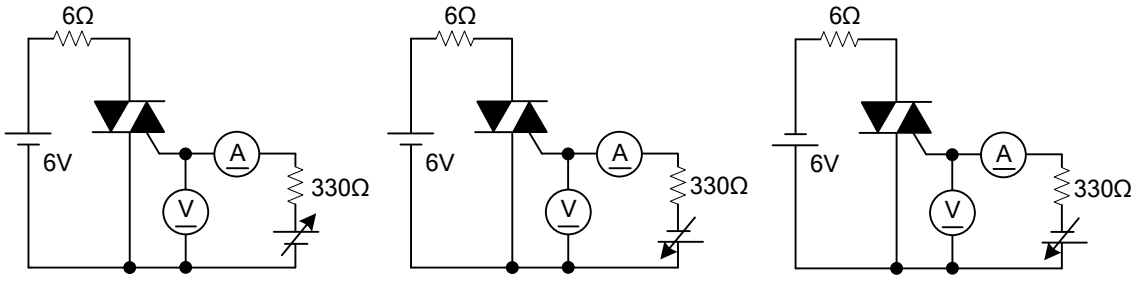
Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. Test conditions of the critical-rate of rise of off-state commutation voltage is shown in the table below.

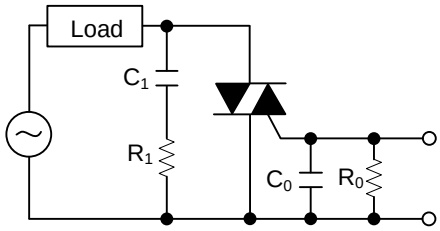
■ COMMUTATING VOLTAGE AND CURRENT WAVEFORMS (INDUCTIVE LOAD)



Note: Test Conditions: 1. Junction temperature: T_J=125°C
2. Rate of decay of on-state commutating current: (di/dt)c=-1.5A/ms
3. Peak off-state voltage: V_D=400V

■ TEST CIRCUITS





C_1=0.1~0.47μF C_0=0.1μF
R_1=47~100Ω R_0=100Ω

Recommended Circuit Values Around The Triac