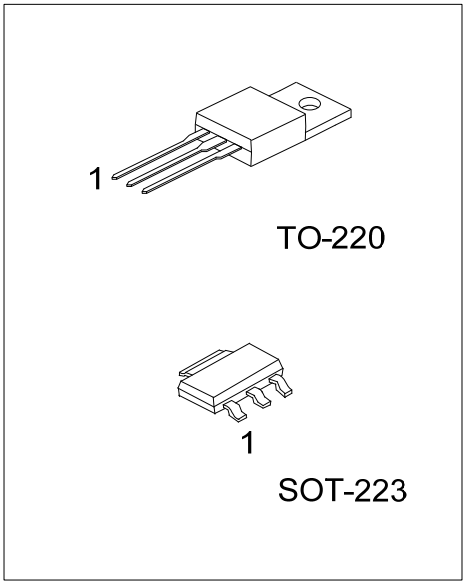
2A TRIACS

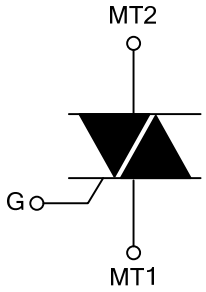


■ DESCRIPTION

The UTC **BTB302A** is a 2A triacs which can be operated in 3 quadrants, it uses UTC's advanced technology to provide customers with high commutation performances.

The UTC **BTB302A** is suitable for inductive load switching operations, also can be used in ON/OFF function applications such as induction motor starting circuits, heating regulation, static relays etc.

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BTB302AL-x-xx-AA3-R	BTB302AG-x-xx-AA3-R	SOT-223	MT1	MT2	G	Tape Reel
BTB302AL-x-xx-TA3-T	BTB302AG-x-xx-TA3-T	TO-220	MT1	MT2	G	Tube

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

BTB302AG-x-xx-AA3-R

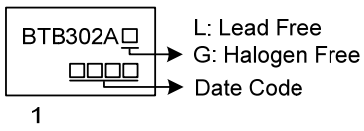
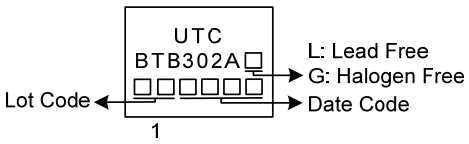
(1)Packing Type	(1) R: Tape Reel, T: Tube
(2)Package Type	(2) AA3: SOT-223, TA3: TO-220
(3)Sensitivity and type	(3) refer to SENSITIVITY AND TYPE
(4)Voltage	(4) 8: 800V
(5)Green Package	(5) G: Halogen Free and Lead Free, L: Lead Free

■ SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE	SENSITIVITY	TYPE
	800V		
BW	◎	50mA	SNUBBERLESS
CW	◎	35mA	SNUBBERLESS
SW	◎	10mA	LOGIC LEVEL
TW	◎	5mA	LOGIC LEVEL

◎: Available

■ MARKING

SOT-223	TO-220
	

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
RMS On-State Current (Full Sine Wave)	T_C=105°C		$I_{T(RMS)}$	2	A
Non Repetitive Surge Peak On-State Current (Full Cycle T_J initial=25°C)	F=50Hz	t=20ms	I_{TSM}	17	A
	F=60Hz	t=16.7ms		18	A
I^2t Value for Fusing	t_P=10ms		I^2t	1.4	A^2s
Critical Rate of Rise of On-State Current: I_G=2xI_{GT}, tr≤100ns			dI/dt	50	A/μs
Peak Gate Current	t_P=20μs		I_{GM}	2	A
Average Gate Power Dissipation		t=20ms	$P_{G(AV)}$	0.5	W
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 Ambient	SOT-223	θ_{JA}	156	°C/W
	TO-220		60	°C/W
Junction to Case (AC)	SOT-223	θ_{JC}	14	°C/W
	TO-220		4	°C/W

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

FOR SNUBBERLESS AND LOGIC LEVEL (3 QUADRANTS)

PARAMETER	SYMBOL	TEST CONDITIONS		TW			SW			CW			BW			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Gate Trigger Current (Note 1)	I_{GT}	V_D=12V I_L=0.1A	I-II-III			5			10			35			50	mA
Gate Trigger Voltage	V_{GT}		I-II-III			1.3			1.3			1.3			1.3	V
Gate Non-Trigger Voltage	V_{GD}	V_D=V_{DRM}, R_L=3.3kΩ, T_J=125°C	I-II-III	0.2			0.2			0.2			0.2			V
Holding Current (Note 2)	I_H	I_T=100mA				10			15			35			50	mA
Latching Current	I_L	I_G=1.2I_{GT}	I-III			10			25			50			70	mA
			II			15			30			60			80	mA
Critical Rate of Rise of Off-State Voltage (Note 2)	dV/dt	V_D=67%V_{DRM}, Gate Open, T_J=125°C		20			40			400			1000			V/μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dI/dt)c	(dV/dt)c=0.1V/μs T_J=125°C		2.7			3.5									A/ms
		(dV/dt)c=10V/μs, T_J=125°C		1.2			2.4									A/ms
		Without Snubber T_J= 125°C								3.5			5.3			A/ms

Notes: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.
2. For both polarities of MT2 referenced to MT1.

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	V_{TM}	I_{TM}=2A, t_P=380μs	T_J=25°C			1.55	V
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}	T_J=25°C			5	μA
	I_{RRM}		T_J=125°C			2	mA

Note: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.
2. For both polarities of MT2 referenced to MT1.