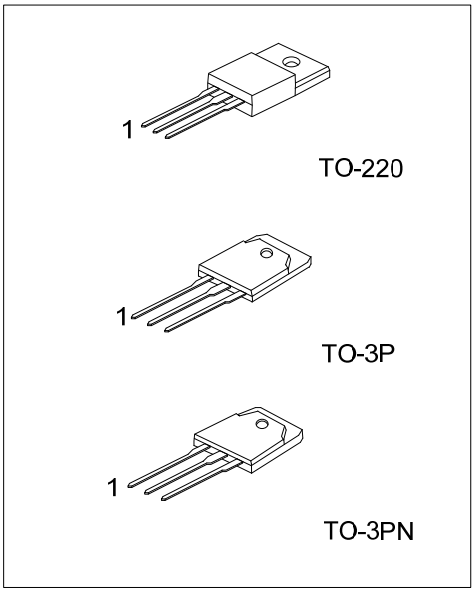
BTB324A

TRIAC

25A TRIACS

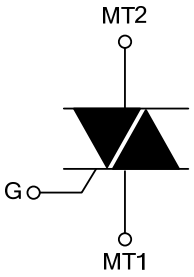


■ DESCRIPTION

The UTC **BTB324A** is a 25A triacs which can be operated in 3 quadrants, it uses UTC's advanced technology to provide customers with high commutation performances.

The UTC **BTB324A** 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	
BTB324AL-x-xx-TA3-T	BTB324AG-x-xx-TA3-T	TO-220	MT1	MT2	G	Tube
BTB324AL-x-xx-T3P-T	BTB324AG-x-xx-T3P-T	TO-3P	MT1	MT2	G	Tube
BTB324AL-x-xx-T3N-T	BTB324AG-x-xx-T3N-T	TO-3PN	MT1	MT2	G	Tube

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

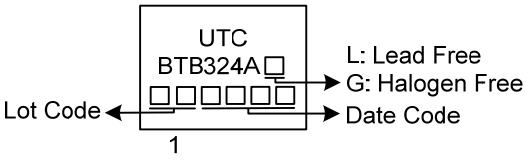
BTB324AG-x-xx-TA3-T (1)Packing Type (2)Package Type (3)Sensitivity and type (4)Voltage (5)Green Package	(1) T: Tube (2) TA3: TO-220, T3P: TO-3P, T3N: TO-3PN (3) refer to SENSITIVITY AND TYPE (4) 6: 600V, 8: 800V (5) G: Halogen Free and Lead Free, L: Lead Free

■ SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
BW	◎	◎	50mA	SNUBBERLESS
CW	◎	◎	35mA	SNUBBERLESS

◎: Available

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
RMS On-State Current (Full Sine Wave)		T_C=75°C	$I_{T(RMS)}$	25	A
Non Repetitive Surge Peak On-State Current (Full Cycle, T_J initial=25°C)	F=50 Hz	t=20ms	I_{TSM}	250	A
	F=60 Hz	t=16.7ms		260	A
I^2t Value for Fusing	t_P=10ms		I^2t	340	A^2s
Critical Rate of Rise of On-State Current I_G=2xI_{GT}, tr≤100ns	F=120 Hz	T_J=125°C	dI/dt	50	A/μs
Non Repetitive Surge Peak Off-State Voltage	t_P=10ms	T_J=25°C	V_{DSM}/V_{RSM}	V_{DRM}/V_{RRM}+100	V
Peak Gate Current	t_P=20μs	T_J=125°C	I_{GM}	4	A
Average Gate Power Dissipation		T_J=125°C	$P_{G(AV)}$	1	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	TO-220	θ_{JA}	60	°C/W
	TO-3P/TO-3PN		30	°C/W
Junction to Case (AC)	TO-220	θ_{JC}	0.8	°C/W
	TO-3P/TO-3PN		50	°C/W

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

PARAMETER	SYMBOL	TEST CONDITIONS		CW			BW			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
SNUBBERLESS TYPE (3 QUADRANTS)										
Gate Trigger Current (Note 1)	I_{GT}	V_D=12V, R_L=33Ω	I-II-III			35			50	mA
Gate Trigger Voltage	V_{GT}		I-II-III			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			V
Holding Current (Note 2)	I_H	I_T=500mA				50			75	mA
Latching Current	I_L	I_G=1.2I_{GT}	I-III			70			80	mA
			II			80			100	mA
Critical Rate of Rise of Off-State Voltage (Note 2)	dV/dt	V_D=67%V_{DRM}, Gate Open, T_J=125°C		500			1000			V/μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dI/dt)c	Without Snubber, T_J=125°C		13			22			A/ms

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	V_{TM}	I_{TM}=35A, t_P=380μs	T_J=25°C			1.55	V
Threshold Voltage (Note 2)	V_{TO}		T_J=125°C			0.85	V
Dynamic Resistance (Note 2)	R_D		T_J=125°C			16	mΩ
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}	T_J=25°C			5	μA
	I_{RRM}		T_J=125°C			3	mA

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