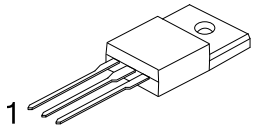
20A TRIACS



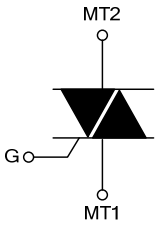
TO-220F

■ DESCRIPTION

The UTC **BTA320A** is a 20A 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 **BTA320A** 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	
BTA320AL-x-xx-TF3-T	BTA320AG-x-xx-TF3-T	TO-220F	MT1	MT2	G	Tube

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

BTA320AG-x-xx-TF3-T

(1)Packing Type
(2)Package Type
(3)Sensitivity and type
(4)Voltage
(5)Green Package

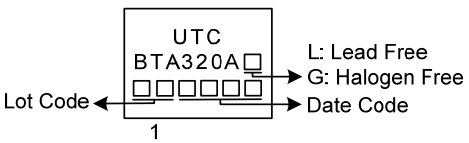
(1) T: Tube
(2) TF3: TO-220F
(3) refer to SENSITIVITY AND TYPE
(4) 6: 600V, 7: 700V, 8: 800V
(5) G: Halogen Free and Lead Free, L: Lead Free

■ SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE			SENSITIVITY	TYPE
	600V	700V	800V		
BW	◎	◎	◎	50mA	SNUBBERLESS
CW	◎	◎	◎	35mA	SNUBBERLESS
TW	◎	◎	◎	5mA	LOGIC LEVEL

◎: Available

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
RMS On-State Current (Full Sine Wave)		T_C=70°C	$I_{T(RMS)}$	20	A
Non Repetitive Surge Peak On-State Current (Full Cycle, T_J initial=25°C)	F=50 Hz	t=10ms	I_{TSM}	210	A
	F=60 Hz	t=8.3ms		200	A
I^2t Value for Fusing	t_P=10ms		I^2t	200	A^2s
Critical Rate of Rise of On-State Current I_G=500mA, dI_G/dt =1A/μs	Repetitive, F=50 Hz	T_J=125°C	dI/dt	50	A/μs
	Non Repetitive			100	A/μs
Non Repetitive Surge Peak Off-State Voltage	t_P=10ms	T_J=25°C	V_{DSM}/V_{RSM}	V_{DSM}/V_{RSM}+100	V
Peak Gate Current	t_P=20μs	T_J=125°C	I_{GM}	4	A
Peak Positive Gate Voltage	t_P=20μs		V_{GM}	16	V
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	θ_{JA}	60	°C/W
Junction to Case (AC)	θ_{JC}	2.0	°C/W
Junction to Case (DC)		2.8	°C/W

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

FOR SNUBBERLESS (3 QUADRANTS)

PARAMETER	SYMBOL	TEST CONDITIONS		TW			CW			BW			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Gate Trigger Current (Note 1)	I_{GT}	V_D=12V, R_L=33Ω	I-II-III			5	1		35	2		50	mA
Gate Trigger Voltage	V_{GT}		I-II-III			1.5			1.5			1.5	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			V
Holding Current (Note 2)	I_H	I_T=500mA, Gate Open				10			50			75	mA
Latching Current	I_L	I_G=1.2I_{GT}	I-III			10					50		mA
			II			15					90		mA
			I-II-III						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			250	500		500	750		V/μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dV/dt)c	(dI/dt)c=20A/ms, T_J=125°C		1.0			11	22		18	36		A/ms

Note: 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}=28A, t_p=380μs	T_J=25°C			1.70	V
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}	T_J=25°C			10	μA
	I_{RRM}		T_J=125°C			3	mA

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