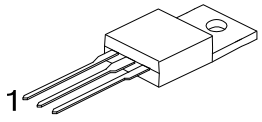
10A TRIACS



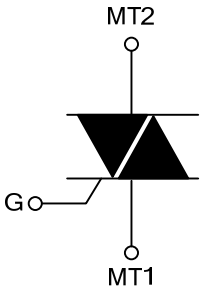
TO-220

■ DESCRIPTION

The UTC **BTB10** is a 10A triacs which can be operated in 4 quadrants, it uses UTC's advanced technology to provide customers with high commutation performances.

The UTC **BTB10** is suitable for AC switching application and phase control application such as fan speed and temperature modulation control, lighting control and static switching relay, either in through-hole or surface-mount packages.

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BTB10L-x-x-TA3-T	BTB10G-x-x-TA3-T	TO-220	MT1	MT2	G	Tube

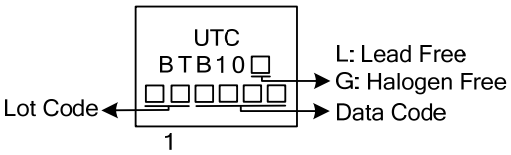
BTB10L-x-x-TA3-T (1)Packing Type (2)Package Type (3)Sensitivity and type (4)Voltage (5)Lead Free	(1) T: Tube (2) TA3: TO-220 (3) refer to SENSITIVITY AND TYPE (4) 6: 600V, 8: 800V (5) L: Lead Free, G: Halogen Free

■ SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
B	◎	◎	50mA	STANDARD
C	◎	◎	25mA	STANDARD

◎: Available

■ MARKING INFORMATION



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
RMS On-State Current (Full Sine Wave)	T_C=95°C		$I_{T(RMS)}$	10	A
Non Repetitive Surge Peak On-State Current (Full Cycle T_J initial=25°C)	F=50Hz	t=20ms	I_{TSM}	100	A
	F=60Hz	t=16.7ms		105	A
I^2t Value for Fusing	t_P=10ms		I^2t	55	A^2s
Critical Rate of Rise of On-State Current: I_G=2xI_{GT}, tr≤100ns	F=120Hz	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_{DSM}/V_{RSM}+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 RESISTANCES

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	60	°C/W
Junction to Case (AC)	θ_{JC}	1.5	°C/W

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

FOR STANDARD (4 QUADRANTS)

PARAMETER	SYMBOL	TEST CONDITIONS		C			B			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
Gate Trigger Current (Note 1)	I_{GT}	V_D=12V, R_L=33Ω	I-II-III			25			50	mA
			IV			50			100	mA
Gate Trigger Voltage	V_{GT}		ALL			1.3			1.3	V
Gate Non-Trigger Voltage	V_{GD}	V_D=V_{DRM}, R_L=3.3kΩ, T_J=125°C	ALL	0.2			0.2			V
Holding Current (Note 2)	I_H	I_T=500mA				25			50	mA
Latching Current	I_L	I_G=1.2I_{GT}	I-III-IV			40			50	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		200			400			V/μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dV/dt)c	(dI/dt)c=4.4A/ms, T_J= 125°C		5			10			V/μs

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	V_T	I_{TM}=14A, 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			40	mΩ
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}	T_J=25°C			5	μA
	I_{RRM}		T_J=125°C			1	mA

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