

# UTC UNISONIC TECHNOLOGIES CO., LTD

**BTB10 Preliminary TRIAC** 

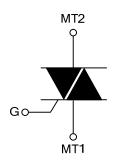
## **10A TRIACS**

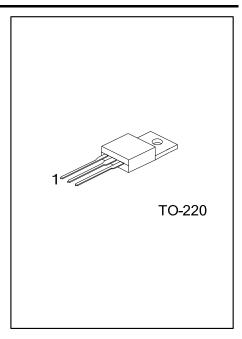
#### DESCRIPTION

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.

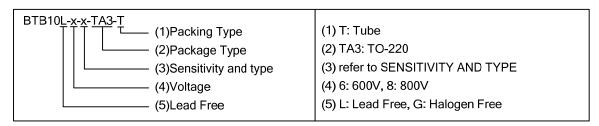
#### **SYMBOL**





#### **ORDERING INFORMATION**

	Ordering	Daakaga	Pin /	Assignr	Dooking		
ĺ	Lead Free	Halogen Free	Package	1	2	3	Packing
BTB10L-x-x-TA3-T		BTB10G-x-x-TA3-T	TO-220	MT1	MT2	G	Tube

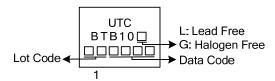


#### **SENSITIVITY AND TYPE**

	VOL	ΓAGE	OENOITIV/ITV	TYPF		
PART NUMBER	600V	800V	SENSITIVITY	TYPE		
В	B © © C		50mA	STANDARD		
С			25mA	STANDARD		

#### ①: Available

#### MARKING INFORMATION



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#### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER			SYMBOL	RATINGS	UNIT
RMS On-State Current (Full Sine Wave)	T <sub>C</sub> =95°C		I <sub>T(RMS)</sub>	10	Α
in the parameter of the	F=50Hz	t=20ms	I <sub>TSM</sub>	100	Α
Current (Full Cycle T <sub>J</sub> initial=25°C)	F=60Hz	t=16.7ms	113W	105	Α
I <sup>2</sup> t Value for Fusing	t <sub>P</sub> =10ms		I <sup>2</sup> t	55	$A^2s$
Critical Rate of Rise of On-State Current: I <sub>G</sub> =2xI <sub>GT</sub> , tr≤100ns	F=120Hz	T <sub>J</sub> =125°C	dI/dt	50	A/µs
Non Repetitive Surge Peak Off-State Voltage	t <sub>P</sub> =10ms	T <sub>J</sub> =25°C	$V_{DSM}/V_{RSM}$	V <sub>DSM</sub> /V <sub>RSM</sub> +100	V
Peak Gate Current	t <sub>P</sub> =20µs	T <sub>J</sub> =125°C	$I_{GM}$	4	Α
Average Gate Power Dissipation		T <sub>J</sub> =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	$\theta_{JA}$	60	°C/W	
Junction to Case (AC)	θıc	1.5	°C/W	

#### ■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub>= 25°C, unless otherwise specified)

#### FOR STANDARD (4 QUADRANTS)

PARAMETER SYMBOL TEST CONDITIONS		С		В			UNIT			
PARAMETER	STIVIBUL	TEST CONDITIONS		MIN	TYP	MAX	MIN	TYP	MAX	UNIT
Gate Trigger Current		\/ -40\/	1-11-111			25			50	mA
(Note 1)	I <sub>GT</sub>	$V_D = 12V$	IV			50			100	mA
Gate Trigger Voltage	$V_{GT}$	$R_L=33\Omega$	ALL			1.3			1.3	V
Gate Non-Trigger Voltage	$V_{\sf GD}$	$V_D = V_{DRM}$ , $R_L = 3.3 k\Omega$ , $T_J = 125$ °C	ALL	0.2			0.2			<b>V</b>
Holding Current (Note 2)	$I_H$	I <sub>T</sub> =500mA				25			50	mA
Latching Current	tching Current $I_L$ $I_{G}=1.2I_{GT}$ $\frac{I-III-IV}{II}$	1 -1 21	I-III-IV			40			50	mA
Latening Current		II			80			100	mA	
Critical Rate of Rise of Off-State Voltage (Note 2)	dV/dt	$V_D$ =67% $V_{DRM}$ , $T_J$ =125° $C$	Gate Open,	200			400			V/µs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dV/dt)c	(dl/dt)c=4.4A/r	ms, T <sub>J</sub> = 125°C	5			10			V/µs

### ■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	V <sub>T</sub>	I <sub>TM</sub> =14A, t <sub>P</sub> =380μs	<sub>/l</sub> =14A, t <sub>P</sub> =380μs T <sub>J</sub> =25°C			1.55	V
Threshold Voltage (Note 2)	V <sub>TO</sub>	$V_{TO}$				0.85	V
Dynamic Resistance (Note 2)	$R_D$		T <sub>J</sub> =125°C			40	mΩ
Description Deals Off State Comment	I <sub>DRM</sub>	\/ -\/	T <sub>J</sub> =25°C			5	μΑ
Repetitive Peak Off-State Current	I <sub>RRM</sub>	$V_{DRM}=V_{RRM}$	T <sub>J</sub> =125°C			1	mA

Notes: 1. Minimum I<sub>GT</sub> is guaranteed at 5% of I<sub>GT</sub> max.

2. For both polarities of MT2 referenced to MT1.

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