

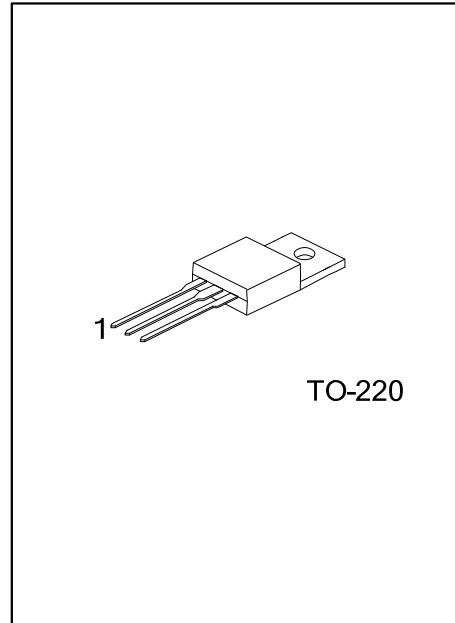
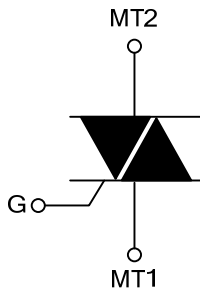
**BTB10**

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**

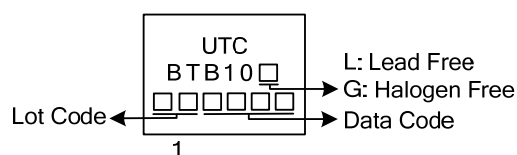
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BTB10L-x-x-TA3-T	BTB10G-x-x-TA3-T	TO-220	MT1	MT2	G	Tube

BTB10L-x-x-TA3-T 	(1) T: Tube (2) TA3: TO-220 (3) refer to SENSITIVITY AND TYPE (4) 6: 600V, 8: 800V (5) L: Lead Free, G: Halogen Free
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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)	$T_C=95^{\circ}\text{C}$ $I_{T(RMS)}$	10	A
Non Repetitive Surge Peak On-State Current (Full Cycle T_J initial= 25°C)	$F=50\text{Hz}$ $t=20\text{ms}$	100	A
	$F=60\text{Hz}$ $t=16.7\text{ms}$	105	A
I^2t Value for Fusing	$t_p=10\text{ms}$ I^2t	55	A^2s
Critical Rate of Rise of On-State Current: $I_G=2I_{GT}$, $t_r \leq 100\text{ns}$	$F=120\text{Hz}$ $T_J=125^{\circ}\text{C}$ dI/dt	50	$\text{A}/\mu\text{s}$
Non Repetitive Surge Peak Off-State Voltage	$t_p=10\text{ms}$ $T_J=25^{\circ}\text{C}$ V_{DSM}/V_{RSM}	$V_{DSM}/V_{RSM}+100$	V
Peak Gate Current	$t_p=20\mu\text{s}$ $T_J=125^{\circ}\text{C}$ I_{GM}	4	A
Average Gate Power Dissipation	$T_J=125^{\circ}\text{C}$ $P_{G(AV)}$	1	W
Operating Junction Temperature	T_J	$-40 \sim +125$	$^{\circ}\text{C}$
Storage Junction Temperature	T_{STG}	$-40 \sim +150$	$^{\circ}\text{C}$

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	$^{\circ}\text{C}/\text{W}$
Junction to Case (AC)	θ_{JC}	1.5	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($T_J = 25^{\circ}\text{C}$, 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}	$V_D=12\text{V}$, $R_L=33\Omega$	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}	$V_D=V_{DRM}$, $R_L=3.3\text{k}\Omega$, $T_J=125^{\circ}\text{C}$	ALL	0.2		0.2			V
Holding Current (Note 2)	I_H	$I_T=500\text{mA}$			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, $T_J=125^{\circ}\text{C}$	200			400			$\text{V}/\mu\text{s}$
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	$(dV/dt)_c$	$(dI/dt)_c=4.4\text{A/ms}$, $T_J=125^{\circ}\text{C}$	5			10			$\text{V}/\mu\text{s}$

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	V_T	$I_{TM}=14\text{A}$, $t_p=380\mu\text{s}$ $T_J=25^{\circ}\text{C}$			1.55	V
Threshold Voltage (Note 2)	V_{TO}	$T_J=125^{\circ}\text{C}$			0.85	V
Dynamic Resistance (Note 2)	R_D	$T_J=125^{\circ}\text{C}$			40	$\text{m}\Omega$
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM}=V_{RRM}$	$T_J=25^{\circ}\text{C}$		5	μA
	I_{RRM}		$T_J=125^{\circ}\text{C}$		1	mA

Notes: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

2. For both polarities of MT2 referenced to MT1.

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