



BTA10

Preliminary

TRIAC

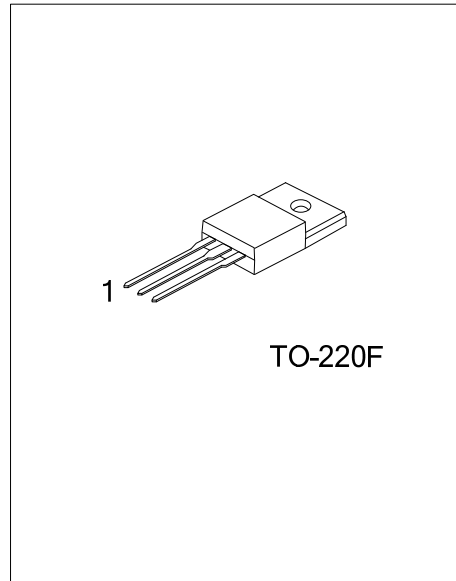
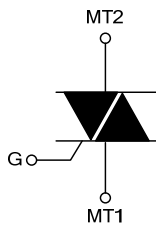
10A TRIACS

■ DESCRIPTION

The UTC **BTA10** is a 10A triacs which can be operated in 4 quadrants, it uses UTC's advanced technology to provide customers with high commutation performances, etc.

The UTC **BTA10** 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	
BTA10L-x-x-TF3-T	BTA10G-x-x-TF3-T	TO-220F	MT1	MT2	G	Tube

<p>BTA10L-x-x-TF3-T</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Sensitivity and type (4) Voltage (5) Lead Free 	<ul style="list-style-type: none"> (1) T: Tube (2) TF3: TO-220F (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

PACKAGE	MARKING
TO-220F	<p>UTC BTA 10 □ □ □ □ □ □ □ Lot Code ← □ □ □ □ □ □ → Data Code 1</p> <p>L: Lead Free G: Halogen Free</p>

■ 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=50Hz $t=20\text{ms}$	I_{TSM}	100	A
	F=60Hz $t=16.7\text{ms}$		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: $I_G=2xI_{GT}$, $t_r \leq 100\text{ns}$	F=120Hz $T_J=125^{\circ}\text{C}$	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~+125	$^{\circ}\text{C}$
Storage Junction Temperature		T_{STG}	-40~+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}	2.4	$^{\circ}\text{C}/\text{W}$

■ 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)	$(dV/dt)_C$	$(di/dt)_C=4.4\text{A}/\text{ms}$, $T_J=125^{\circ}\text{C}$		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

Note: 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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