



**BTA06**

Preliminary

**TRIAC**

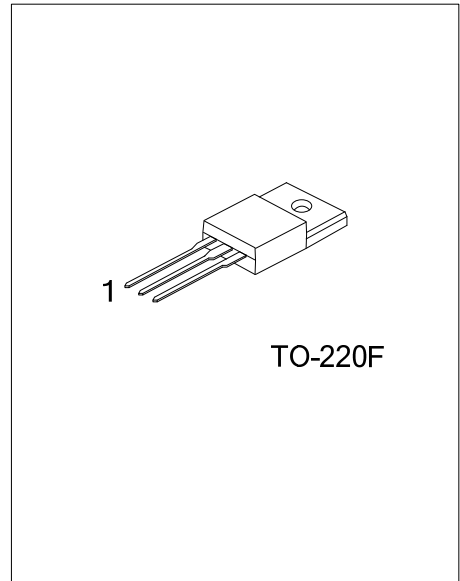
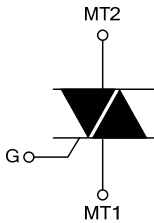
**6A TRIACS**

■ DESCRIPTION

The UTC **BTA06** is a 6A triacs which can be operated in 4 quadrants, it uses UTC's advanced technology to provide customers with high commutation performances, etc.

The UTC **BTA06** 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	
BTA06L-x-x-TF3-T	BTA06G-x-x-TF3-T	TO-220F	MT1	MT2	G	Tube

<p>BTA06L-x-x-TF3-T</p> <ul style="list-style-type: none"> <li>(1) Packing Type</li> <li>(2) Package Type</li> <li>(3) Sensitivity and type</li> <li>(4) Voltage</li> <li>(5) Lead Free</li> </ul>	<ul style="list-style-type: none"> <li>(1) T: Tube</li> <li>(2) TF3: TO-220F</li> <li>(3) refer to SENSITIVITY AND TYPE</li> <li>(4) 6: 600V, 8: 800V</li> <li>(5) L: Lead Free, G: Halogen Free</li> </ul>
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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 BTA06 □ □ □ □ □ □ □ Lot Code ← → Data Code</p> <p>L: Lead Free G: Halogen Free</p>

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
RMS On-State Current (Full Sine Wave)	$T_C=105^{\circ}\text{C}$	$I_{T(RMS)}$	6	A
Non Repetitive Surge Peak On-State Current (Full Cycle $T_J$ initial= $25^{\circ}\text{C}$ )	F=50Hz $t=20\text{ms}$	$I_{TSM}$	60	A
	F=60Hz $t=16.7\text{ms}$		63	A
$I^2t$ Value for Fusing	$t_P=10\text{ms}$	$I^2t$	21	$\text{A}^2\text{s}$
Critical Rate of Rise of On-State Current: $I_G=2I_{GT}$ , $t_r \leq 100\text{ns}$	F=120Hz $T_J=125^{\circ}\text{C}$	$di/dt$	50	$\text{A}/\mu\text{s}$
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	$\theta_{JA}$	60	$^{\circ}\text{C}/\text{W}$
Junction to Case (AC)	$\theta_{JC}$	2.7	$^{\circ}\text{C}/\text{W}$

■ 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)	$I_{GT}$	$V_D=12\text{V}$ , $R_L=30\Omega$	I-II-III		25		50	$\text{mA}$	
			IV		50		100	$\text{mA}$	
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	$\text{mA}$	
Latching Current	$I_L$	$I_G=1.2I_{GT}$	I-III-IV		40		50	$\text{mA}$	
			II		80		100	$\text{mA}$	
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)	$(dV/dt)_c$	$(di/dt)_c=2.7\text{A}/\text{ms}$ , $T_J=125^{\circ}\text{C}$		5		10		$\text{V}/\mu\text{s}$	

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	$V_{TM}$	$I_{TM}=8.5\text{A}$ , $t_P=380\mu\text{s}$		$T_J=25^{\circ}\text{C}$	1.55	V
Threshold Voltage (Note 2)	$V_{TO}$			$T_J=125^{\circ}\text{C}$	0.85	V
Dynamic Resistance (Note 2)	$R_D$			$T_J=125^{\circ}\text{C}$	60	$\text{m}\Omega$
Repetitive Peak Off-State Current	$I_{DRM}$	$V_{DRM}=V_{RRM}$		$T_J=25^{\circ}\text{C}$	5	$\mu\text{A}$
	$I_{RRM}$		$T_J=125^{\circ}\text{C}$	1	$\text{mA}$	

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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