

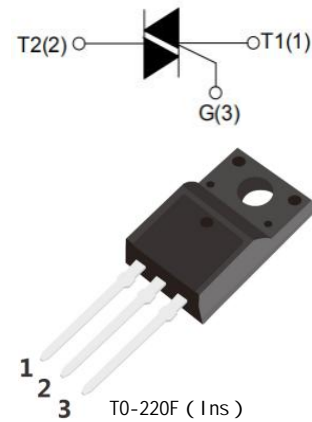
BTA216X-600B TRIACS

●DESCRIPTION:

Due to separation glass passivation, these devices have good performance at dv/dt and reliability. The Triac series is suitable for general purpose AC switching. They can be used as an On-Off function in the applications such as static relays, heating regulation, or for phase control operation in light dimmers, motor speed controllers.

●MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	16	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	≤ 10	mA



●ABSOLUTE MAXIMUM RATINGS

Symbol	PARAMETER		Value	Unit
$I_{T(RMS)}$	RMS on-state current(full sine wave)	TO-220.Non-Ins $T_C \leq 99^\circ C$	16	A
I_{TSM}	Non repetitive surge peak on-state current (full sine wave, $T_j=25^\circ C$)	$t=20ms$	140	A
		$t=16.7ms$	150	
I^2t	I^2t Value for fusing	$t=10ms$	98	A^2S
di/dt	Repetitive rate of rise of on-state Current after triggering	$I_{TM} = 20 A; I_G = 0.2 A$ $di_G/dt = 0.2 A/us$	100	$A/\mu s$
I_{GM}	Peak gate current,	—	2	A
V_{GM}	Peak gate voltage	—	5	W
P_{GM}	Peak gate power	—	5	W
$P_{G(AV)}$	Average gate power	over any 20 ms period	0.5	W
T_{stg}	Storage junction temperature range	-40 to +150		$^\circ C$
T_j	Operating junction temperature range	125		$^\circ C$

● ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$, unless otherwise specified)

STATIC CHARACTERISTICS

Symbol	Parameter	Test Condition	Quadrant	Value			Unit
				MIN	TYPE	MAX	
I_{GT}	Gate trigger current	$V_D=12\text{V}, I_T=0.1\text{A}$	I-II-III	-	-	10	mA
V_{GT}	Gate trigger voltage	$V_D=12\text{V}, I_T=0.1\text{A}$		-	0.7	1.5	V
		$V_D=400\text{V}, I_T=0.1\text{A}, T_j=125^\circ\text{C}$		0.25	0.4	-	
V_T	On-state voltage	$I_T=20\text{A}$		-	1.2	1.5	V
I_H	Holding current	$V_D=12\text{V}, I_{GT}=0.1\text{A}$	I-II-III	-	-		mA
I_L	Latching current	$V_D=12\text{V}, I_{GT}=0.1\text{A}$	I-III	-	-	60	mA
			II	-	-	90	mA
I_D	Off-state leakage current	$V_D = V_{DRM(max)}; T_j = 125^\circ\text{C}$		-	0.1	0.5	mA

DYNAMIC CHARACTERISTICS

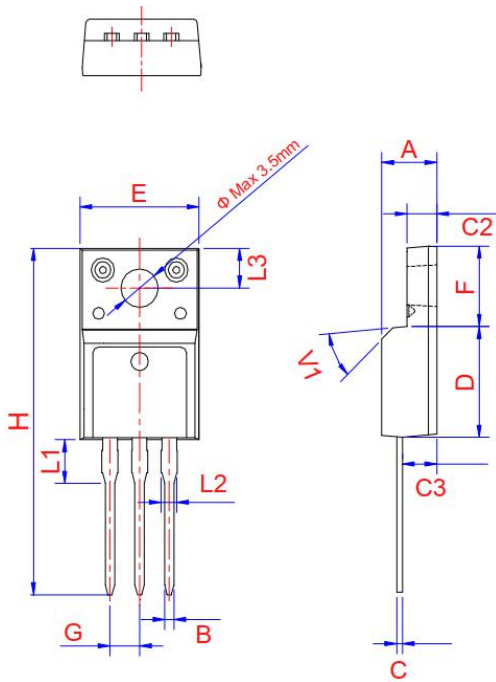
Symbol	Parameter	Test Condition	Value		Unit
			MIN	TYPE	
dV_D/dt	Critical rate of rise of off-state voltage	$V_{DM} = 67\% V_{DRM(max)}; T_j = 125^\circ\text{C}$ exponential waveform; gate open circuit	1000	4000	V/us
dI_{com}/dt	Critical rate of change of commutating current	$V_{DM} = 400\text{V}; T_j = 125^\circ\text{C}; I_{T(RMS)} = 16\text{A};$ without snubber; gate open circuit		28	A/ms
t_{gt}	Gate controlled turn-on time	$I_{TM} = 20\text{A}; V_D = V_{DRM(max)}; I_G = 0.1\text{A}; dI_G/dt = 5\text{A}/\mu\text{s}$		2	us

● THERMAL RESISTANCES

Symbol	Parameter	Test Condition	Value			Unit
			MIN	TYPE	MAX	
$R_{th\ j-mb}$	Thermal resistance junction to mounting base	full cycle			1.2	K/W
		half cycle			1.7	
$R_{th\ j-a}$	Thermal resistance junction to ambient	In free air		60		K/W

PACKAGE MECHANICAL DATA

TO-220F



TO-220F Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.5		4.9	0.177		0.193
B	0.74	0.8	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.6		3	0.102		0.118
D	8.8		9.3	0.346		0.366
E	9.8		10.4	0.386		0.41
F	6.4		6.8	0.252		0.268
G		2.54			0.1	
H	28		29.8	1.102		1.173
L1		3.63			0.148	
L2	1.14		1.7	0.045		0.067
L3	2.65	3.3	0		0.13	0.116
V1		45°			45°	

ELECTRICAL CHARACTERISTICS (CURVES)

