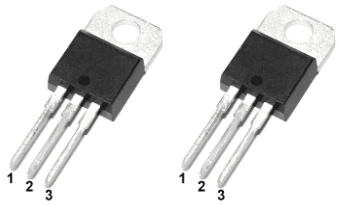
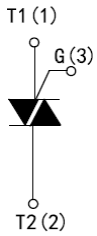
南京集正电子有限公司
NanJing JiZheng Electronics Co.,Ltd

BTA/BTB16

16A TRIACS

DRAWING





BTA16 **BTB16**

(Insulated)

Description

- Package：TO-220AB
- Available either in through-hole or surface-mount packages, the BTA/BTB16 is suitable for general purpose AC switching. They can be used as an ON/OFF function in application such as static relays, heating regulation ,Induction motor starting circuits…or for phase control operation in light dimmers, motor speed controllers.

Absolute Maximum Ratings

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	RMS on-state current(full since wave)	TO-220AB	TC=100℃	16	A
		TO-220AB Ins.	TC=85℃		
I_{TSM}	Non repetitive surge peak on-state current(full cycle, Tj initial=25℃)	F=50Hz	t=20ms	160	A
		F=60Hz	t=16.7ms	168	
I^2t	I^2t Value for fusing	tp=10ms		144	A^2s
DI/DT	Critical rate of rise of on-state current IG=2$X_{IGT,tr\leq100ns}$	F=120Hz	Tj=125℃	50	A/us
VDSM/VRSM	Non repetitive surge peak off-state voltage	tp=10ms	Tj=25℃	Vdrm / vrrm + 100V	V
IGM	Peak gate current	tp=20us	Tj=125℃	4	A
$P_{G(AV)}$	Average gate power dissipation		Tj=125℃	1	W
T_{stg}	Storage junction temperature range			-40 to +150	℃
T_j	Operating junction temperature range			-40 to +125	

Electrical Characteristics (Tj=25℃,unless otherwise specified)

Snubberless™ and Logic Level(3 quadrants)

Symbol	Test conditions	Quadrant	BTA16		Unit
I_{GT}(1)	V_D=12V R_L=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	mA
V_{GT}		Ⅰ-Ⅱ-Ⅲ	MAX	1.3	V
V_{GD}	V_D=V_{DRM} R_L=3.3KΩTj=125℃	Ⅰ-Ⅱ-Ⅲ	MIN	0.2	V
IH(2)	IT=500mA		MAX	50	mA
IL	I_G=1.2I_{GT}	Ⅰ-Ⅲ	MAX	70	mA
		Ⅱ		80	
Dv / Dt(2)	VD=67%V_{DRM} Gate open Tj=125℃		MIN	1000	V/us
(Dl/dt)c(2)	(Dv/dt)c=0.1 V/us Tj=125℃		MIN	-	A/ms
	(Dv/dt)c=10V/us Tj=125℃			-	
	Without snubber Tj=125℃			14	

Standard (4 Quadrants)

Symbol	Test conditions	Quadrant	BTA16		Unit
IGT(1)	VD=12V RL=33Ω	Ⅰ-Ⅱ-Ⅲ	MAX	50	mA
		Ⅳ		100	
VGT		ALL	MAX	1.3	V
VGD	VD=VDRM RL=3.3KΩTj=125℃	ALL	MIN	0.2	V
IH(2)	IT=500mA		MAX	50	mA
IL	IG=1.2IGT	Ⅰ-Ⅲ-Ⅳ	MAX	60	mA
		Ⅱ		120	
(Dl/dt)(2)	VD=67%VDRM Gate open Tj=125℃		MIN	400	V/us
(Dl/dt)c(2)	(Dv/dt)c=7 A/ms Tj=125℃		MIN	10	V/us

Static Characteristics

Symbol	Test conditions			Value	Unit
VTM(2)	ITM=11A tp=380us	TJ=25℃	MAX	1.55	V
Vto(2)	Threshold voltage	TJ=125℃	MAX	0.85	V
Rd(2)	Dynamic resistance	TJ=125℃	MAX	25	mΩ
I_{DRM}	$V_{DRM}=V_{RRM}$	TJ=25℃	MAX	5	uA
I_{RRM}		TJ=125℃		2	mA
V_{DRM}/V_{RRM}	Voltage	TJ=25℃	MIN	600 and 800	V

Note 1: minimum IGT is guaranted at 5% of IGT max

Note 2: for both polarities of A2 referenced to A1

Thermal Resistances

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case(AC)	TO-220AB	1.2	℃/W
		TO-220AB(Insulated)	2.1	
Rth(j-a)	Junction to ambient	TO-220AB/ TO-220AB(Insulated)	60	℃/W