

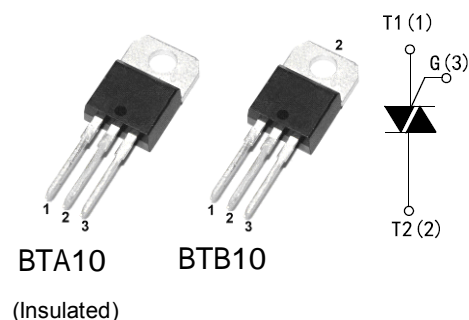
BTA/BTB10

10A TRIACS

Description

- Package: TO-220T
- Available either in through-hole or surface-mount packages, the BTA10/BTB10 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.

DRAWING



Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
$I_{T(RMS)}$	RMS on-state current(full sine wave)	TO-220T TC=110°C	10 A
		TO-220T Ins. TC=100°C	
I_{TSM}	Non repetitive surge peak on-state current(full cycle, T_j initial=25°C)	F=50Hz t=20ms	100 A
		F=60Hz t=16.7ms	105 A
I^2t	I^2t Value for fusing	tp=10ms	36 A ² s
DI/DT	Critical rate of rise of on-state current $I_G=2X_{IGT, tr \le 100ns}$	F=120Hz $T_j=125^\circ C$	50 A/us
I_{GM}	Peak gate current	tp=20us $T_j=125^\circ C$	4 A
$P_{G(AV)}$	Average gate power dissipation	$T_j=125^\circ C$	1 W
T_{stg}	Storage junction temperature range		-40 to +150 °C
T_j	Operating junction temperature range		-40 to +125 °C

Electrical Characteristics ($T_j=25^\circ C$, unless otherwise specified)

Snubberless™ and Logic Level(3 quadrants)

Symbol	Test conditions	Quadrant	BTA10/BTB10		Unit
$I_{GT(1)}$	$V_D=12V R_L=30\Omega$	I - II - III	MAX	50	mA
V_{GT}		I - II - III	MAX	1.3	V
V_{GD}	$V_D=V_{DRM} R_L=3.3K\Omega T_j=125^\circ C$	I - II - III	MIN	0.2	V
$I_H(2)$	$I_T=100mA$		MAX	50	mA
I_L	$I_G=1.2I_{GT}$	I - III	MAX	70	mA
		II		80	
$DV / Dt(2)$	$V_D=67\%V_{DRM}$ Gate open $T_j=125^\circ C$		MIN	1000	V/us
$(DI/dt)_c(2)$	$(Dv/dt)_c=0.1 V/us T_j=125^\circ C$		MIN	-	A/ms
	$(Dv/dt)_c=10V/us T_j=125^\circ C$			-	
	Without snubber $T_j=125^\circ C$			10	

Standard (4 Quadrants)

Symbol	Test conditions	Quadrant	BTA10/BTB10		Unit
			MAX	MIN	
IGT(1)	VD=12V RL=30Ω	I - II - III	MAX	50	mA
VGT		IV		100	
VGD	VD=VDRM RL=3.3KΩTj=125°C	ALL	MAX	1.3	V
IH(2)	IT=500mA	ALL	MIN	0.2	V
IL	IG=1.2IGT	I - III- IV	MAX	50	mA
		II		100	
(DI/dt)(2)	VD=67%VDRM Gate open Tj=125°C		MIN	400	V/us
(DI/dt)c(2)	(Dv/dt)c=3.5 A/ms Tj=125°C		MIN	10	V/us

Static Characteristics

Symbol	Test conditions			Value	Unit
VTM(2)	ITM=11A tp=380us	TJ=25°C	MAX	1.55	V
Vto(2)	Threshold voltage	TJ=125°C	MAX	0.85	V
Rd(2)	Dynamic resistance	TJ=125°C	MAX	40	mΩ
IDRM	VDRM=VRRM	TJ=25°C		5	uA
IRRM		TJ=125°C	MAX	1	mA
VDRM/VRRM	Voltage	TJ=25°C	MIN	800	V

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

Note 2: for both polarities of A2 referenced to A1

Thermal Resistances

Symbol	Parameter		Value	Unit
Rth(j-c)	Junction to case(AC)	TO-220T	1.5	°C/W
		TO-220T(Insulated)	2.4	
Rth(j-a)	Junction to ambient	TO-220T	60	°C/W
		TO-220T(Insulated)		