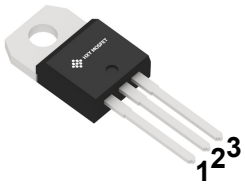
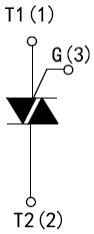
Description

Available either in through-hole or surface-mount packages, the BTA16-600BRG 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.



TO-220A



Absolute Maximum Ratings (T_a=25°C unless otherwise noted)

Symbol	Parameter	Test condition	Value	Unit
V_{DSM}/ V_{RSM}	Non repetitive surge peak off-state voltage	Tp=10ms, Tc=25°C	V_{DRM}/ V_{RRM} +100V	V
$I_{T(RMS)}$	RMS on-state current	Tc=110°C Tc=85°C (Insulated)	16	A
I_{TSM}	Non repetitive surge peak on-state current	F=60Hz, t=16.7ms	168	A
		F=50Hz, t=20ms	160	
I^2t	I^2t value	tp=10ms	144	A^2s
dI/dt	Critical rate of rise of on-state current	I_G=2*I_{GT}, tr≤100ns, F=120Hz, T_j=125°C	50	A/μs
I_{GM}	Peak gate current	tp=20μs, T_j=125°C	4	A
$P_{G(AV)}$	Average gate power	T_j=125°C	1	W
T_{STG}	Storage temperature		-40~+150	°C
T_j	Operating junction temperature		-40~+125	

Electrical Characteristics (T_j =25°C unless otherwise specified)

Snubberless ™ and Logic Level (3 quadrants)

Symbol	Parameter	Test condition			Value	Unit
I_{GT} (1)	Gate trigger current	V_D=12V, R_L=30Ω,	Ⅰ - Ⅱ -Ⅲ	Max	50	mA
V_{GT}	Gate trigger voltage		Ⅰ - Ⅱ -Ⅲ	Max	1.3	V
V_{GD}	Non-triggering gate voltage	V_D =V_{DRW}, T_j=125°C R_L=3.3KΩ	Ⅰ - Ⅱ -Ⅲ	Min	0.2	V
I_H(2)	Holding current	I_T=500mA		Max	50	mA
I_L	Latching current	I_G=1.2I_{GT},	Ⅰ -Ⅲ	Max	70	
			Ⅱ	Max	80	
D_V/dt(2)	Critical rate of rise of off-state	V_D=67%V_{DRM}, Gate Open T_j=125°C		Min	1000	V/μs
(DI/dt)c(2)	Critical rate of rise of off-state	(dI/dt)c=0.1V/us, T_j=125°C		Min	-	V/μs
		(dI/dt)c=10V/us, T_j=125°C			-	
		Without snubber, T_j=125°C			14	

Standard (4 quadrants)

Symbol	Parameter	Test condition			Value	Unit
I_{GT} (1)	Gate trigger current	V_D=12V, R_L=30Ω,	Ⅰ - Ⅱ -Ⅲ Ⅳ	Max	50 100	mA
V_{GT}	Gate trigger voltage		ALL	Max	1.3	V
V_{GD}	Non-triggering gate voltage	V_D =V_{DRW}, T_j=125°C R_L=3.3KΩ	ALL	Min	0.2	V
I_H(2)	Holding current	I_T=500mA		Max	50	mA
I_L	Latching current	I_G=1.2I_{GT},	Ⅰ -Ⅲ-Ⅳ	Max	60	
			Ⅱ	Max	120	
D_V/dt(2)	Critical rate of rise of off-state	V_D=67%V_{DRM}, Gate Open T_j=125°C		Min	400	V/μs
(DI/dt)c(2)	Critical rate of rise of off-state	(D_V/dt)c=3.5A/ms, T_j=125°C		Min	10	V/μs

Static Characteristics

Symbol	Test Conditions			Value	Unit
V_{TM} (2)	I_{TM} = 11 A, t_p = 380 µs	T_j = 25°C	MAX.	1.55	V
V_{to} (2)	Threshold voltage	T_j = 125°C	MAX.	0.85	V
R_d (2)	Dynamic resistance	T_j = 125°C	MAX.	25	mΩ
I_{DRM} I_{RRM}	V_{DRM} = V_{RRM}	T_j = 25°C	MAX.	5	µA
		T_j = 125°C		1	mA
V_{DRM} /V_{RRM}	Voltage	T_j = 25°C		600/800	mA

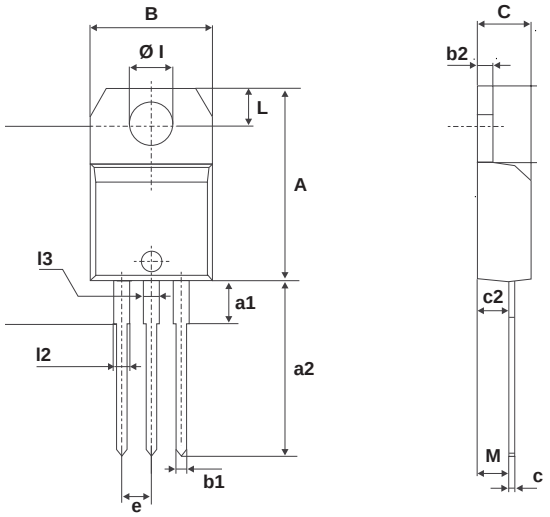
Note 1: minimum IGT is guaranted at 5% of IGT max

Note 2: for both polarities of A2 referenced to A1

Thermal Resistances

Symbol	Parameter	Value	Unit
Rth (j-c)	Junction to case (AC)	2.1	°C/W
Rth (j-a)	Junction to ambient	60	°C/W

Package Information
TO-220A



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
ØI	3.75		3.85	0.147		0.151
I4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
I2	1.14		1.70	0.044		0.066
I3	1.14		1.70	0.044		0.066
M		2.60			0.102	

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