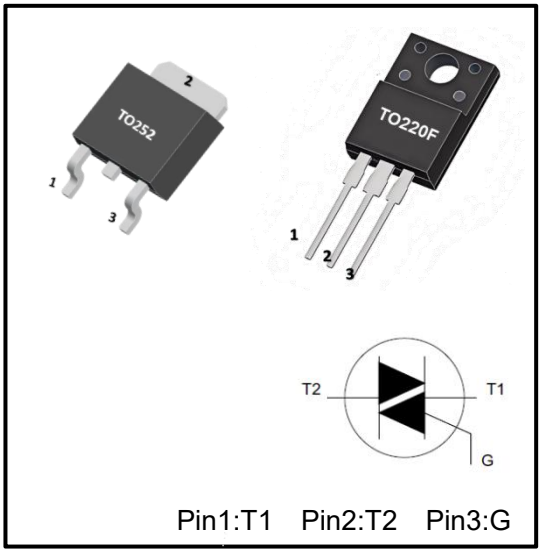
BTA08

TRIAC

■ GENERAL DESCRIPTION

*The BTA08 is a 8A triacs which can be operated in 3 quadrants, it uses our advanced technology to provide customers with high commutation performances,etc.

*The BTA08 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.



■ MARKING

: HY LOGO
BTA08=Device Code
XXXX=Date Code
Solid Dot=Green molding compound

■ ABSOLUTE MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

SYMBOL	PARAMETER	TEST CONDITION	VALUE	UNIT
V_{DRM}/V_{RRM}	Repetitive Peak off-state/reverse voltage		600	V
			800	V
$I_{T(RMS)}$	RMS On-State Current(Full Sine Wave)	Tc=100°C	8	A
I_{TSM}	Non Repetitive Surge Peak On-State Current ((Full Cycle TJ initial=25°C)	t=20ms;F=50Hz	80	A
		t=16.7ms;F=60Hz	84	
I_{GM}	Peak Gate Current t_p=20μs	T_J=125°C	4	A
I^2t	I^2t Value for Fusing	t_p=10ms	36	A^2S
dI/dt	Critical Rate of Rise of On-State Current: I_G=2×L_{GT}, tr≤100ns	F=120Hz;T_J=125°C	50	A/μs
$P_{G(AV)}$	Average Gate Power Dissipation (T_J=125°C)		1	W
Tstg	Storage Junction Temperature		-40 to +150	℃
T_j	Operating junction temperature		-40 to + 125	℃

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.

BTA08

TRIAC

■ THERMAL RESISTANCES

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220F	RθJA	60	℃/W
	TO-252		70	
Junction to Case	TO-220F	RθJC	2.5	℃/W
	TO-252		1.6	

■ SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
B	◎	◎	50mA	STANDARD
C	◎	◎	25mA	STANDARD

◎ : Available

■ ELECTRICAL CHARACTERISTICS (Tc=25°C unless otherwise noted)

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=12V, R_L=33Ω	T2+, G+			25			50	mA
			T2+, G -			25			50	
			T2-, G -			25			50	
Gate Trigger Voltage	V_{GT}	V_D=12V, R_L=33Ω	T2+, G+			1.5			1.5	V
			T2+, G -			1.5			1.5	
			T2-, G -			1.5			1.5	
Gate Non-Trigger Voltage	V_{GD}	V_D=V_{DRM} R_L=3.3kΩ T_J=125°C	I-II-III	0.2			0.2			V
Holding Current (Note 2)	I_H	I_T=500mA				25			50	mA
Latching Current	I_L	I_G=1.2I_{GT}	I-III			40			50	mA
			II			80			100	mA
Critical Rate of Rise of Off-State Voltage (Note 2)	dV/dt	V_D=67%V_{DRM},(Gate Open),T_J=125°C		200			400			V/μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dV/dt)c	(dI/dt)c=5.3A/ms, T_J= 125°C		5			10			V/μs

BTA08

TRIAC

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 1)	V_{TM}	I_{TM}=11A, t_P=380μs	T_J=25°C			1.50	V
Threshold Voltage (Note 2)	V_{TO}		T_J=125°C			0.92	V
Dynamic Resistance (Note 2)	R_D		T_J=125°C			36.6	mΩ
Repetitive Peak Off-State Current	I_{DRM}	V_{DRM}=V_{RRM}	T_J=25°C			5	μA
	I_{RRM}		T_J=125°C			0.5	mA

Notes: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

2. For both polarities of MT2 referenced to MT1.

■ TYPICAL CHARACTERISTICS

Fig.1 Maximum Power Dissipation vs. RMS on-State Current (full cycle)

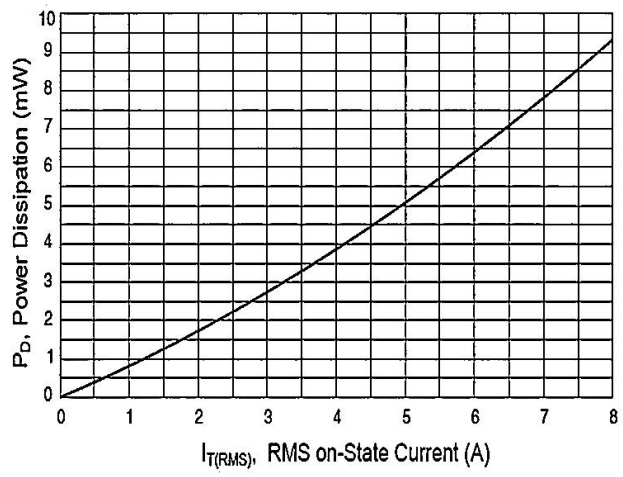


Fig.2 RMS on-State Current vs.Tc

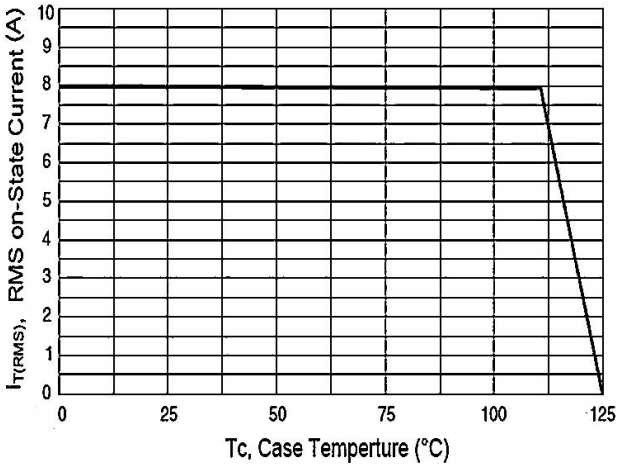


Fig.3 RMS on-state current vs.Ta

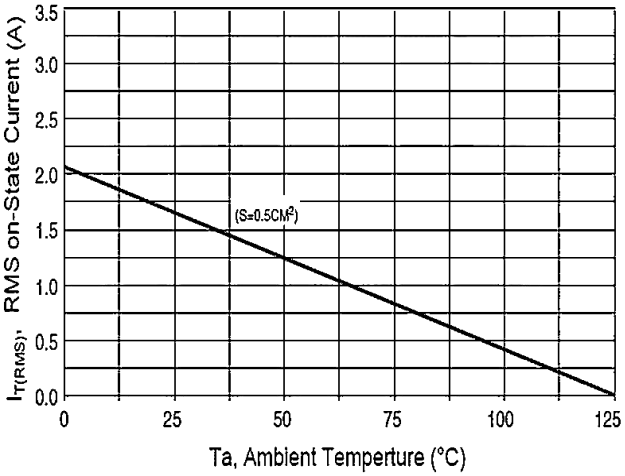
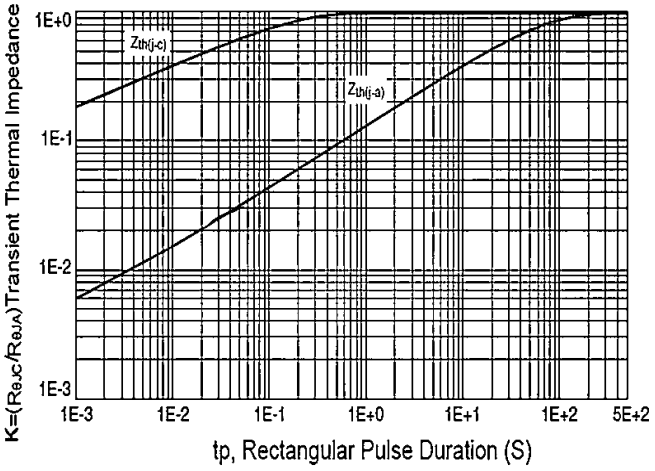


Fig.4 Relative Variation of Thermal Impedance vs. Pulse Duration



■ TYPICAL CHARACTERISTICS(Con.t)

Fig.5 maximum on-State Characteristics

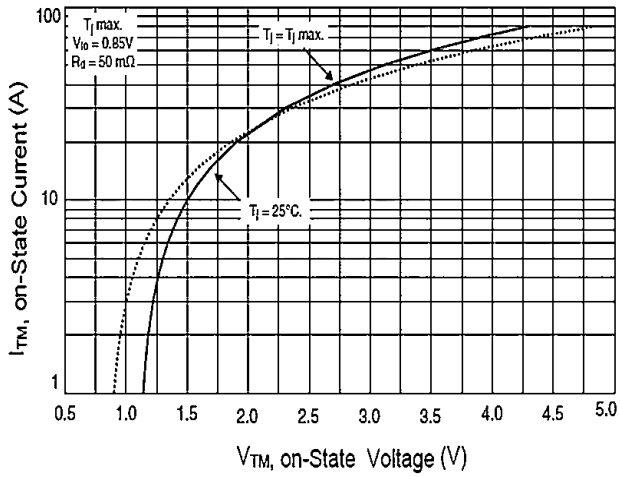


Fig.6 Surge Peak on-State Current vs. number of Cycles

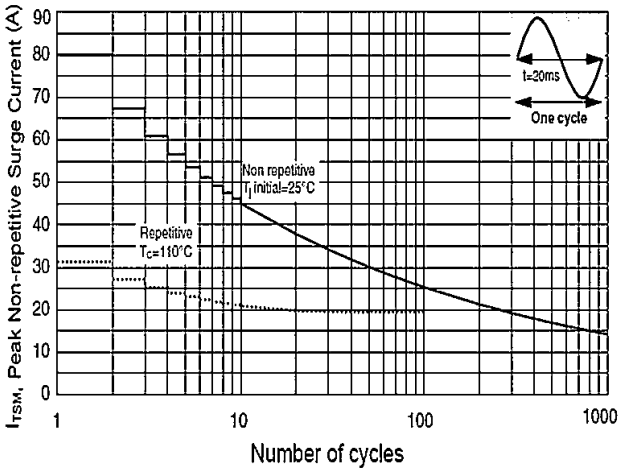


Fig.7 Typical Relative Variation of Gate Trigger Current, Holding Current and Latching Current vs.TJ

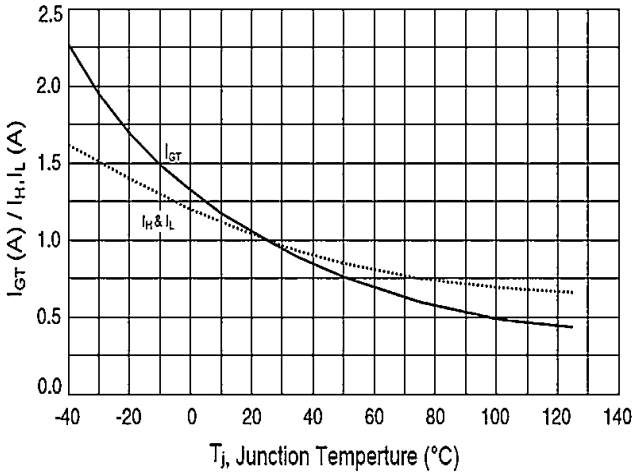
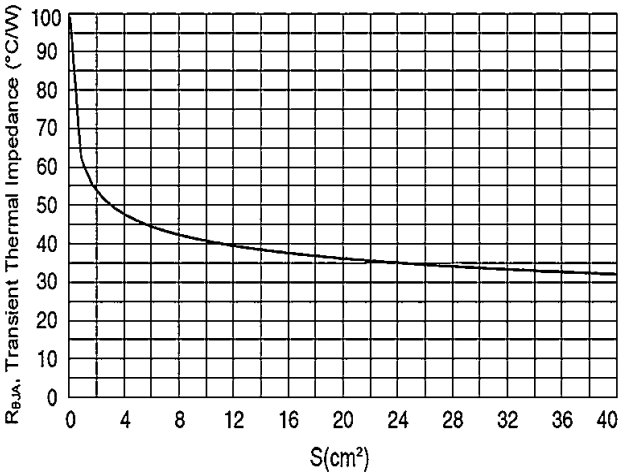


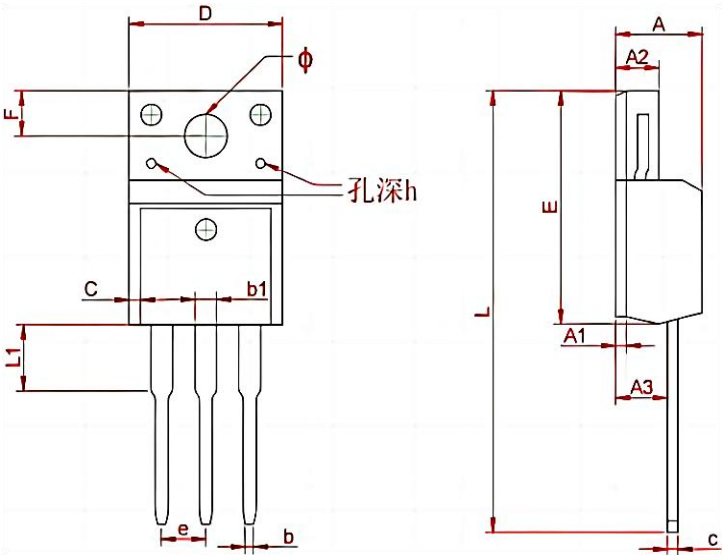
Fig.8 Thermal Resistance Junction to Ambient vs. Copper Surface under Tab



BTA08

TRIAC

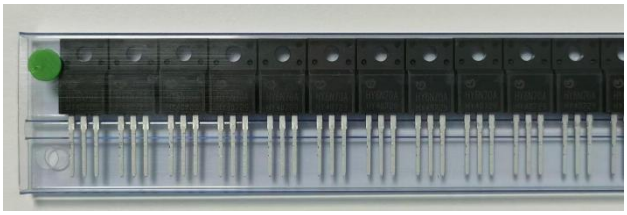
■ TO - 220F PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max	Min	Max
A	4.300	4.750	0.169	0.185
A1	1.830 REF		0.072 REF	
A2	2.300	2.850	0.090	0.112
A3	2.500	2.900	0.098	0.114
b	0.400	0.420	0.016	0.016
b1	1.220	1.280	0.048	0.050
C	0.690	0.720	0.027	0.028
c	0.490	0.510	0.019	0.020
D	9.960	10.200	0.392	0.400
E	15.000	15.950	0.588	0.625
e	2.574 TYP		0.101TYP	
F	3.470 REF		0.136 REF	
y	3.200 REF		0.125 REF	
h	0.000	0.300	0.000	0.012
L	28.780	28.900	1.128	1.133
L1	2.990	3.100	0.117	0.122

■ TO - 220F PACKING INFORMATION

50PCS



20 Tube

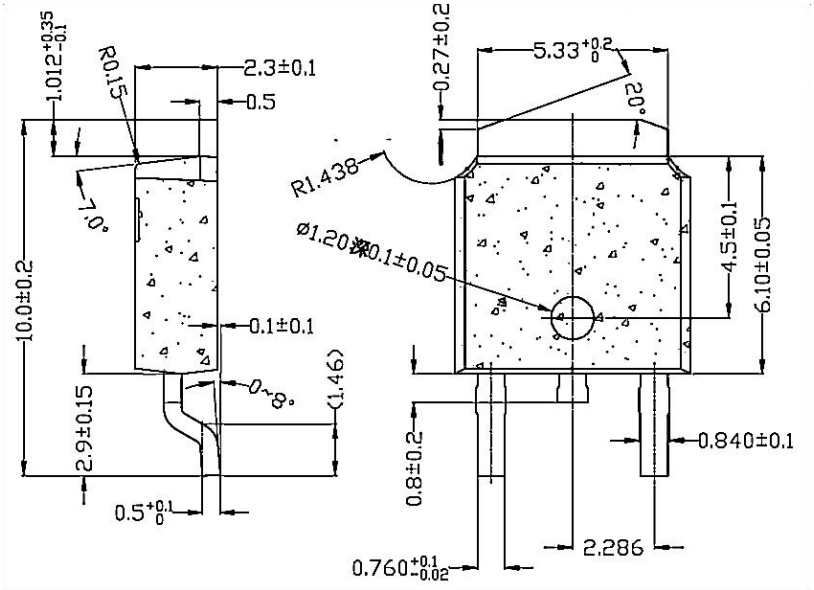
5 Inner Box

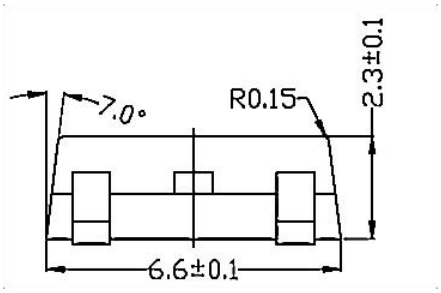
Outer Box

Inner Box

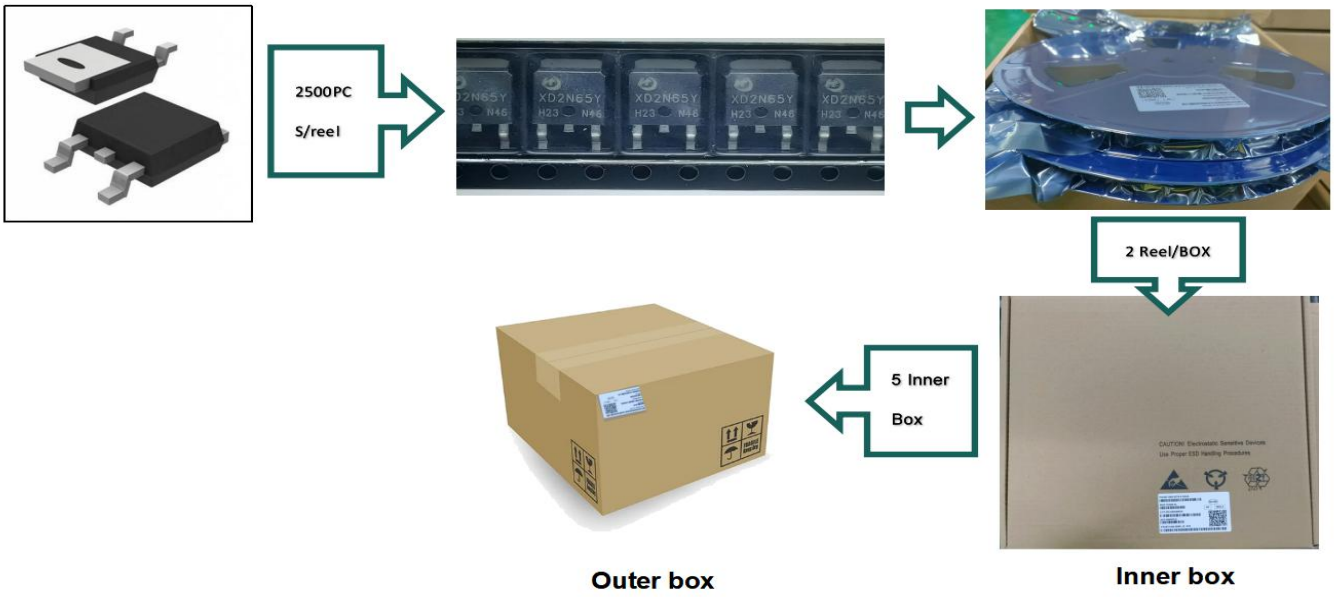
Package version	**Tube dimensions LxW×H (mm)**	**Per Tube (pcs)**	**Tube per box**	**Inner box** dimensions LxW×H (mm)	**PCS/ Inner box**	**Outer box** dimensions L×W×H(mm)	**PCS/ Outer box**

■ TO - 252 PACKAGE OUTLINE DIMENSIONS





■ TO - 252 PACKING INFORMATION



Package version	Reel dimensions Φ×H (mm)	Per Reel (pcs)	Reels per box	Inner box dimensions L×W×H(mm)	Outer box (pcs)	Outer box dimensions L×W×H (mm)
TO-252	Φ330*20	2500	2	360*340*50	25000	375*375*280