

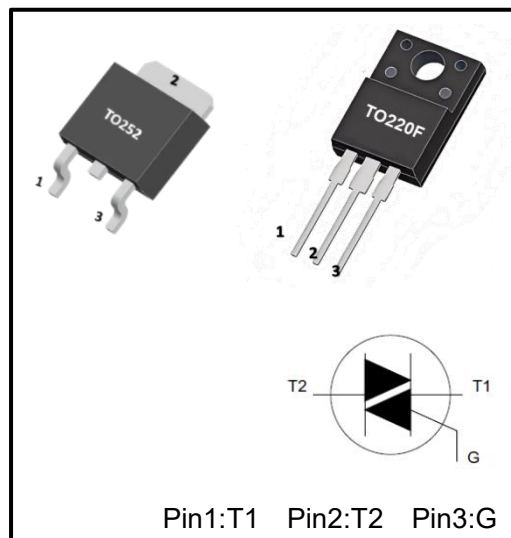
BTA08

TRIAC

GENERAL DESCRIPTION

*The BTA08 is a 12A 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



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)	$T_c=100^{\circ}C$	12	A
I_{TSM}	Non Repetitive Surge Peak On-State Current ((Full Cycle T_J initial=25°C)	$t=20ms; F=50Hz$	80	A
		$t=16.7ms; F=60Hz$	84	
I_{GM}	Peak Gate Current	$t_p=20\mu s$	4	A
I^2t	I^2t Value for Fusing	$t_p=10ms$	36	A ² S
di/dt	Critical Rate of Rise of On-State Current: $I_G=2 \times I_{GT}, t_r \leq 100ns$	$F=120Hz; T_J=125^{\circ}C$	50	A/ μs
$P_{G(AV)}$	Average Gate Power Dissipation ($T_J=125^{\circ}C$)		1	W
T_{stg}	Storage Junction Temperature		-40 to +150	°C
T_J	Operating junction temperature		-40 to + 125	°C

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	R θ JA	60	°C/W
	TO-252		70	
Junction to Case	TO-220F	R θ JC	2.5	°C/W
	TO-252		1.6	

■ SENSITIVITY AND TYPE

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

⊙ : Available

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

FOR STANDARD (3 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}	$I_{TM}=11A$, $t_p=380\mu s$	$T_J=25^\circ C$			1.50	V
Threshold Voltage (Note 2)	V_{TO}		$T_J=125^\circ C$			0.92	V
Dynamic Resistance (Note 2)	R_D		$T_J=125^\circ C$			36.6	m Ω
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM}=V_{RRM}$	$T_J=25^\circ C$			5	μA
	I_{RRM}		$T_J=125^\circ C$			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)

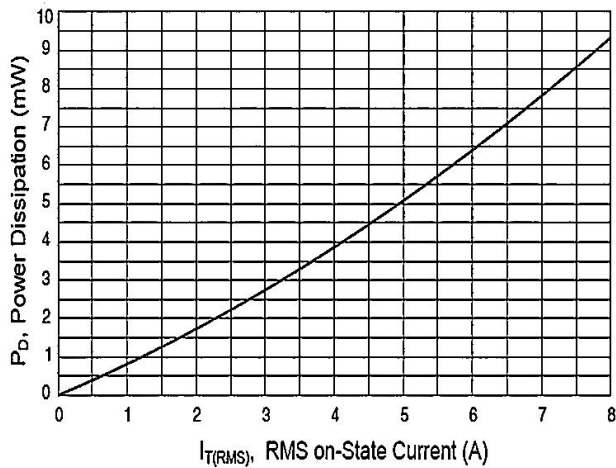


Fig.2 RMS on-State Current vs. T_c

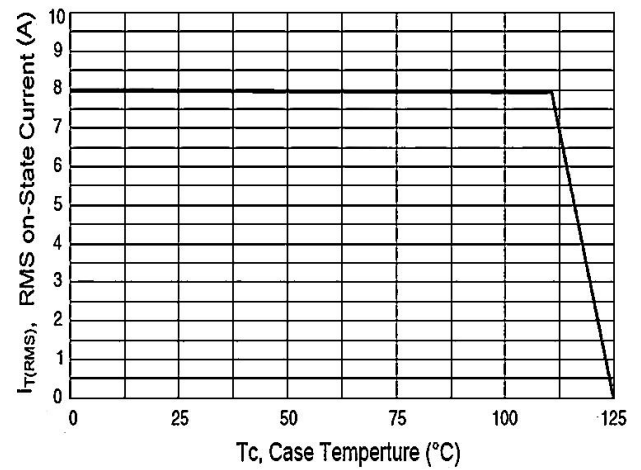


Fig.3 RMS on-state current vs. T_a

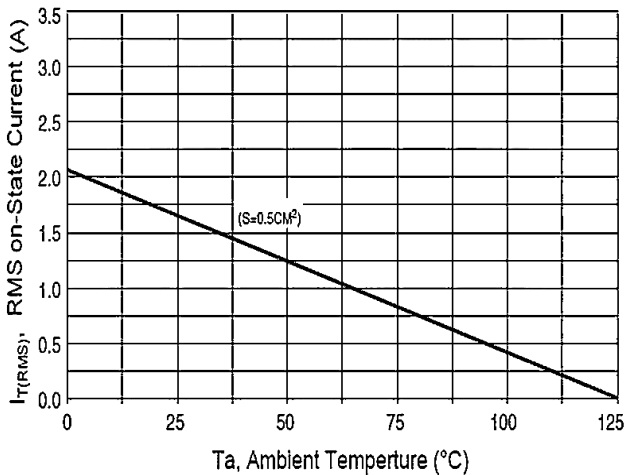
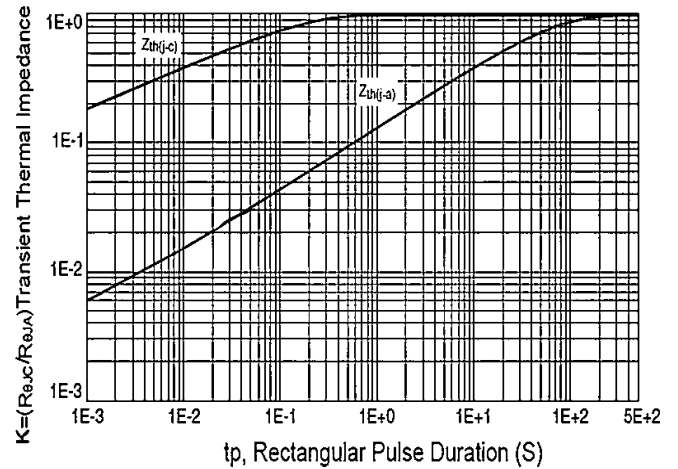


Fig.4 Relative Variation of Thermal Impedance vs. Pulse Duration



BTA08

TRIAC

■ TYPICAL CHARACTERISTICS(Con.t)

Fig.5 maximum on-State Characteristics

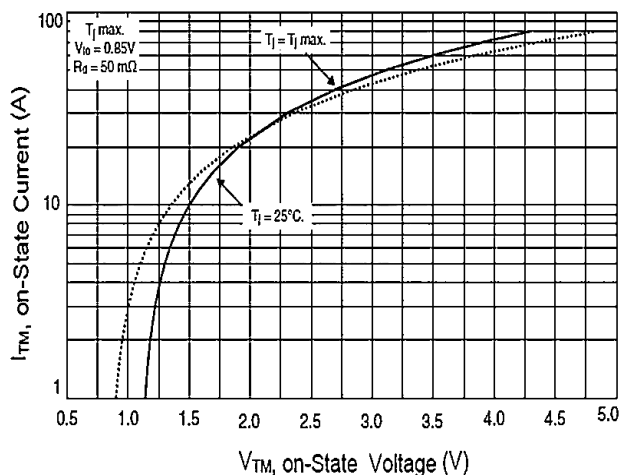


Fig.6 Surge Peak on-State Current vs. number of Cycles

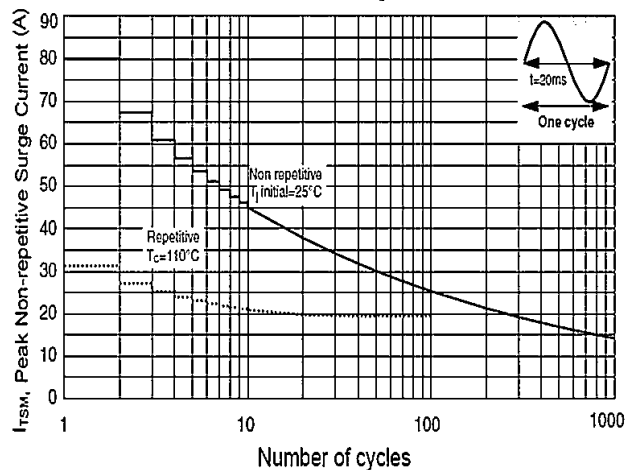


Fig.7 Typical Relative Variation of Gate Trigger Current, Holding Current and Latching Current vs. T_J

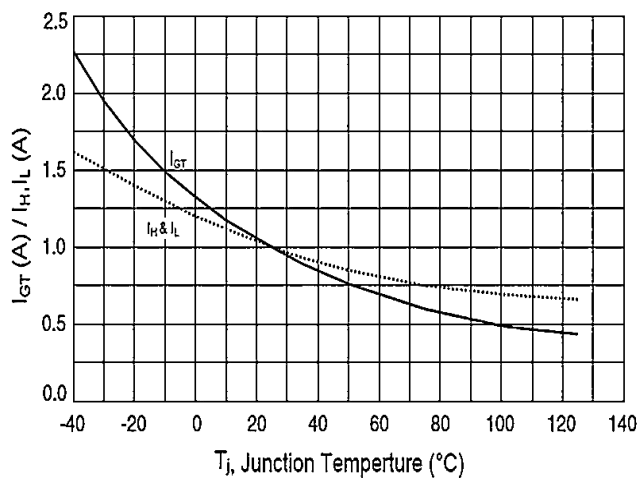
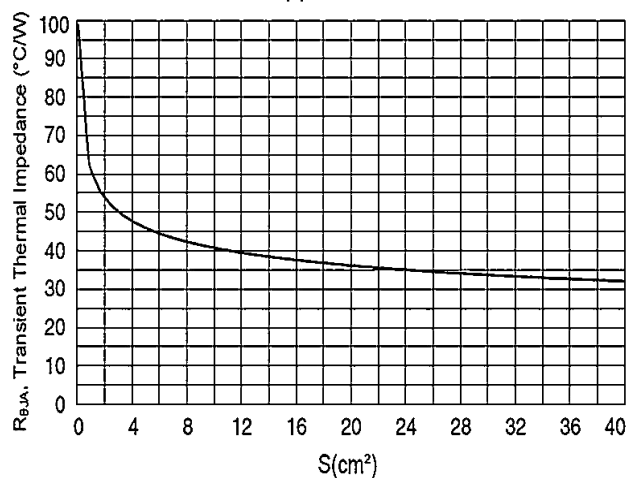


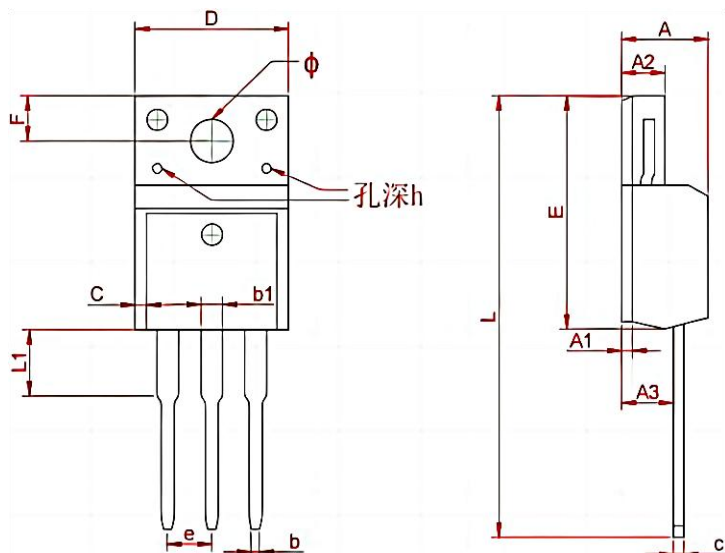
Fig.8 Thermal Resistance Junction to Ambient vs. Copper Surface under Tab



BTA08

TRIAC

TO - 220F PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min	Max
A	4.300	4.750
A1	0.7 REF	
A2	2.300	2.850
A3	2.500	2.900
b	0.380	0.420
b1	1.220	1.280
C	1.08	1.200
c	0.480	0.520
D	10.15	10.450
E	15.700	15.950
e	2.574 TYP	
F	3.470 REF	
y	3.200 REF	
h	0.000	0.800
L	28.780	28.900
L1	2.990	3.100

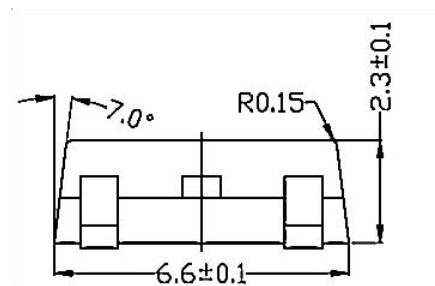
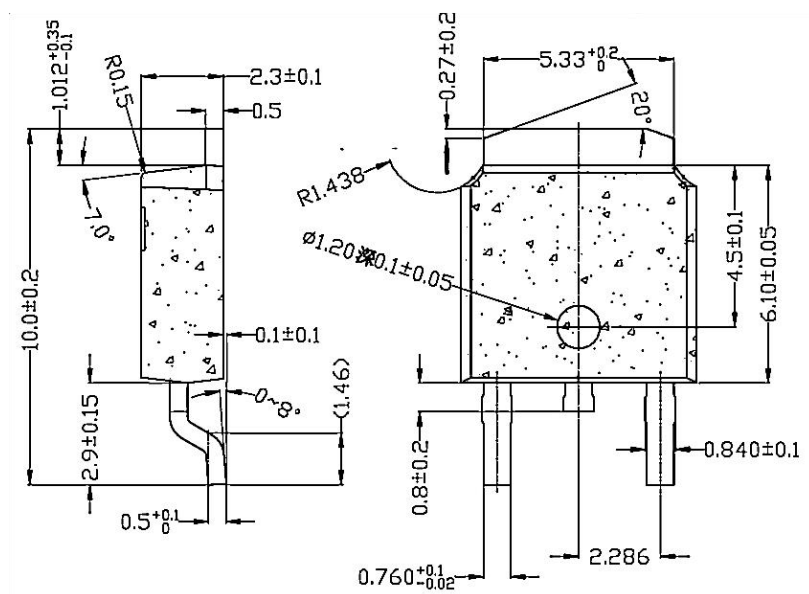
TO - 220F PACKING INFORMATION

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
-----------------	----------------------------------	-------------------	--------------	---------------------------------------	-------------------	-----------------------------------	-------------------

BTA08

TRIAC

TO - 252 PACKAGE OUTLINE DIMENSIONS



TO - 252 PACKING INFORMATION

Package version	Reel dimensions $\phi \times H$ (mm)	Per Reel (pcs)	Reels per box	Inner box dimensions $L \times W \times H$ (mm)	Outer box (pcs)	Outer box dimensions $L \times W \times H$ (mm)
T0-252	$\phi 330 \times 20$	2500	2	360*340*50	25000	375*375*280