

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-a)	Junction to ambient		60	°C/W
Rth (j-c) DC	Junction to case for DC	BTA	4.4	°C/W
		BTB	3.2	
Rth (j-c) AC	Junction to case for 360° conduction angle (F= 50 Hz)	BTA	3.3	°C/W
		BTB	2.4	

GATE CHARACTERISTICS (maximum values)

PG (AV) = 1W PGM = 10W (tp = 20 μs) IGM = 4A (tp = 20 μs) VGM = 16V (tp = 20 μs).

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions	Quadrant		Suffix		Unit	
				B	C		
IGT	VD=12V (DC) RL=33Ω	Tj=25°C	I-II-III	MAX	50	25	mA
			IV	MAX	100	50	
VGT	VD=12V (DC) RL=33Ω	Tj=25°C	I-II-III-IV	MAX	1.5		V
VGD	VD=VDRM RL=3.3kΩ	Tj=110°C	I-II-III-IV	MIN	0.2		V
tgt	VD=VDRM IG = 500mA dIG/dt = 3A/μs	Tj=25°C	I-II-III-IV	TYP	2		μs
IL	IG=1.2 IGT	Tj=25°C	I-III-IV	TYP	40	20	mA
			II		70	35	
IH *	IT= 500mA gate open	Tj=25°C		MAX	50	25	mA
VTM *	ITM= 11A tp= 380μs	Tj=25°C		MAX	1.75		V
IDRM IRRM	VDRM Rated VRRM Rated	Tj=25°C		MAX	0.01		mA
		Tj=110°C		MAX	0.5		
dV/dt *	Linear slope up to VD=67%VDRM gate open	Tj=110°C		MIN	250	100	V/μs
(dV/dt)c *	(dI/dt)c = 3.5A/ms	Tj=110°C		MIN	10	5	V/μs

* For either polarity of electrode A2 voltage with reference to electrode A1.

ORDERING INFORMATION

Package	$I_T(RMS)$	V_{DRM} / V_{RRM}	Sensitivity Specification	
	A	V	B	C
BTA (Insulated)	8	400	X	X
		600	X	X
		700	X	X
		800	X	X
BTB (Uninsulated)	8	400	X	X
		600	X	X
		700	X	X
		800	X	X

Fig.1 : Maximum RMS power dissipation versus RMS on-state current ($F=50Hz$).
(Curves are cut off by $(di/dt)_c$ limitation)

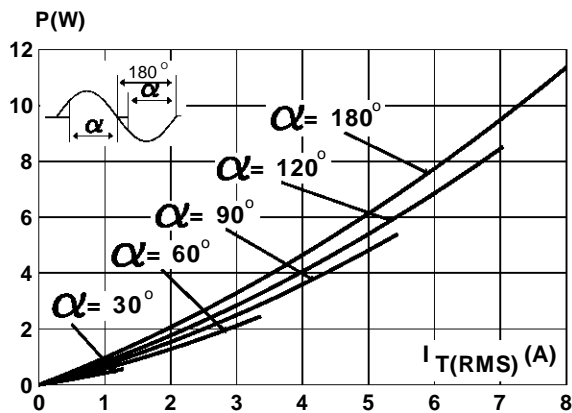


Fig.3 : Correlation between maximum RMS power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (BTB).

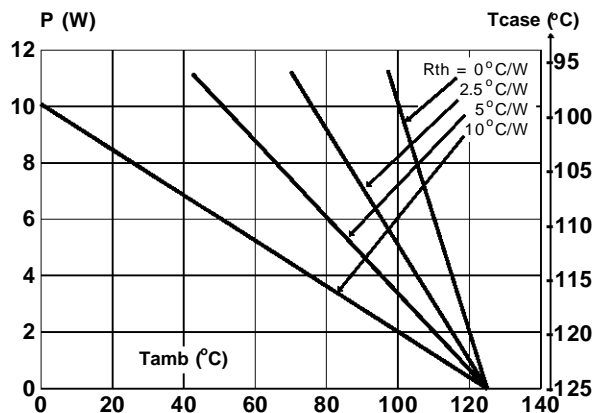


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (BTA).

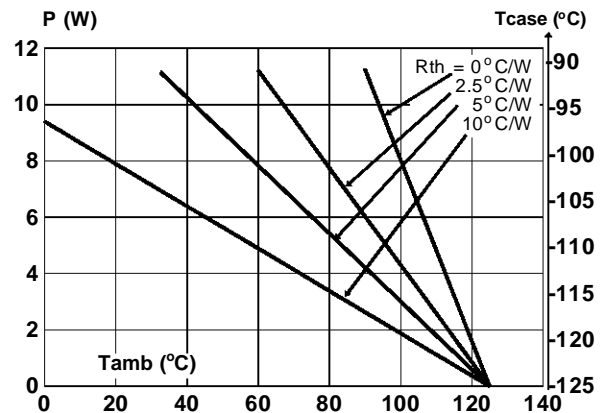
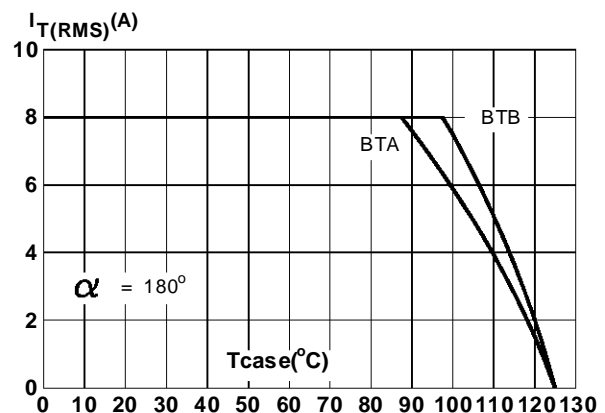


Fig.4 : RMS on-state current versus case temperature.



BTA08 B/C / BTB08 B/C

Fig.5 : Relative variation of thermal impedance versus pulse duration.

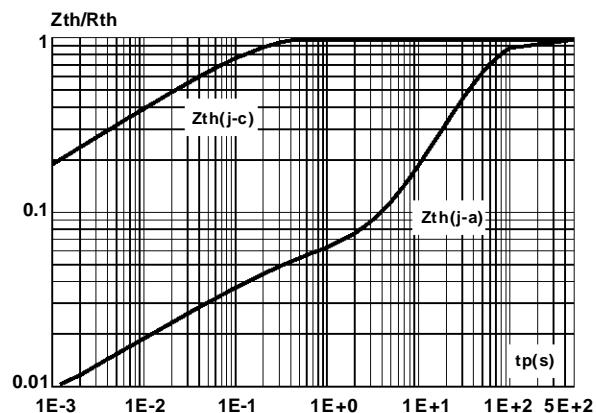


Fig.7 : Non Repetitive surge peak on-state current versus number of cycles.

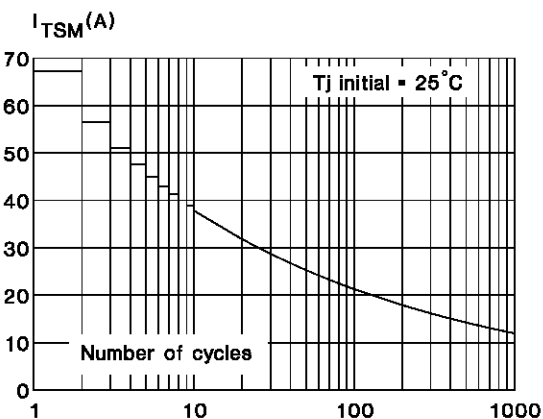


Fig.9 : On-state characteristics (maximum values).

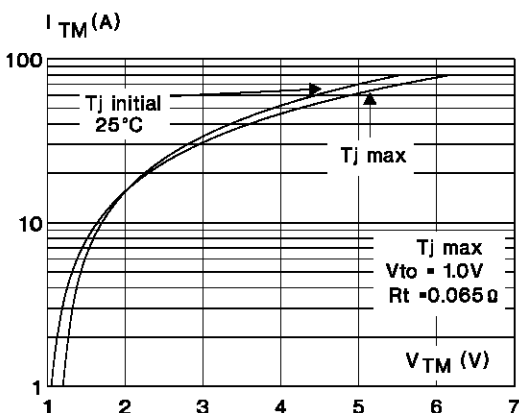


Fig.4 : Relative variation of gate trigger current and holding current versus junction temperature.

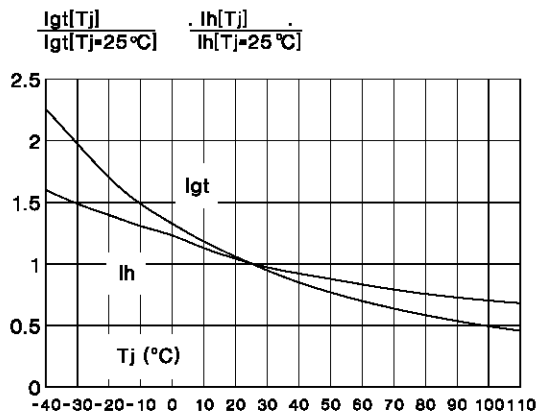
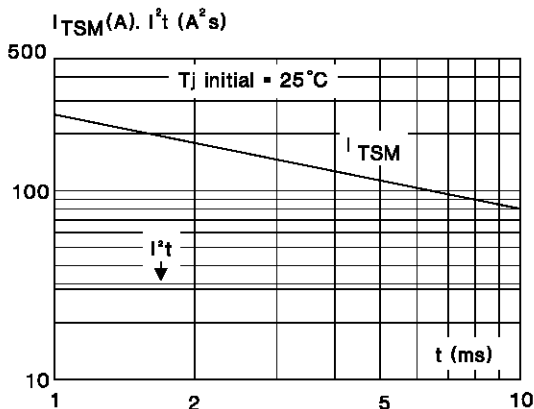
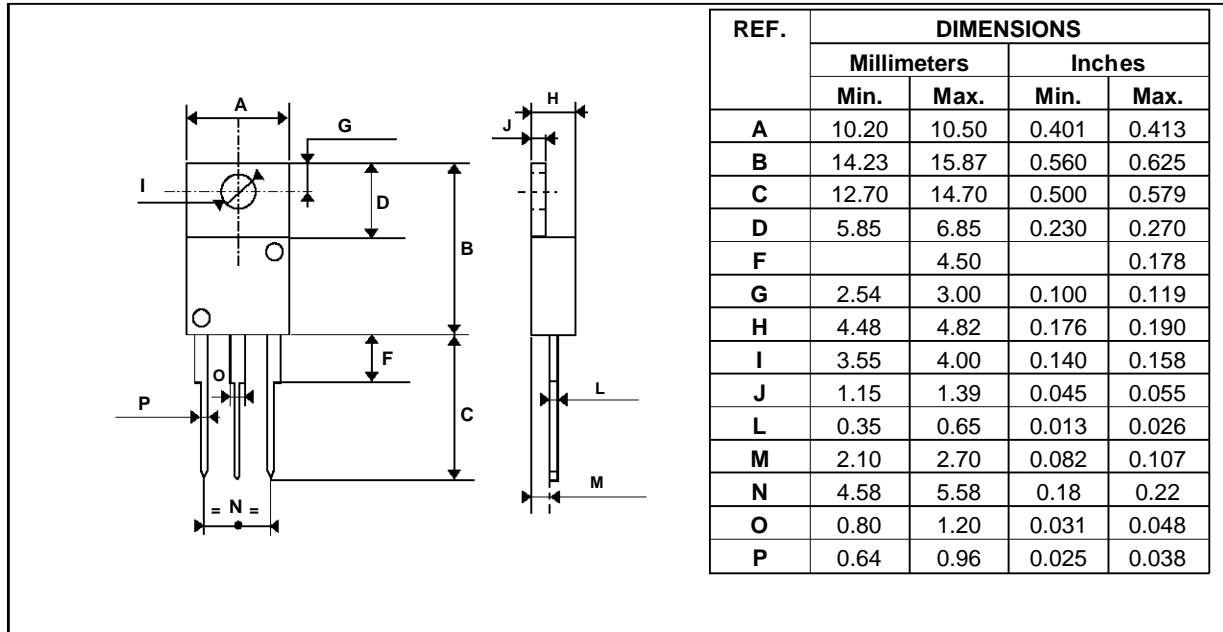


Fig.8 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10\text{ms}$, and corresponding value of I^2t .



PACKAGE MECHANICAL DATA

TO220AB Plastic



Cooling method : C
 Marking : type number
 Weight : 2.3 g
 Recommended torque value : 0.8 m.N.
 Maximum torque value : 1 m.N.

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