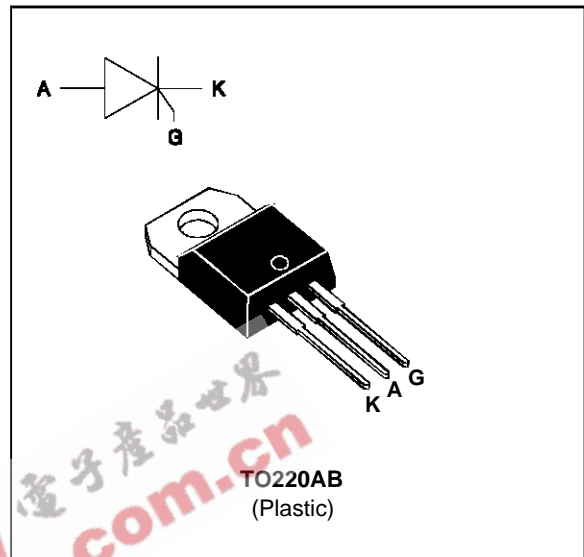


FEATURES

- HIGH SURGE CAPABILITY
- HIGH ON-STATE CURRENT
- HIGH STABILITY AND RELIABILITY
- TXN Serie :
INSULATED VOLTAGE = 2500V(RMS)
(UL RECOGNIZED : E81734)

DESCRIPTION

The TYN/TXN 0512 ---> TYN/TXN 1012 Family of Silicon Controlled Rectifiers uses a high performance glass passivated technology. This general purpose Family of Silicon Controlled Rectifiers is designed for power supplies up to 400Hz on resistive or inductive load.



ABSOLUTE RATINGS (limiting values)

Symbol	Parameter	Value	Unit
$I_T(RMS)$	RMS on-state current (180° conduction angle)	TXN TYN Tc=80°C Tc=90°C	12 A
$I_T(AV)$	Average on-state current (180° conduction angle, single phase circuit)	TXN TYN Tc=80°C Tc=90°C	8 A
I_{TSM}	Non repetitive surge peak on-state current (Tj initial = 25°C)	tp=8.3 ms	125 A
		tp=10 ms	120
i^2t	i^2t value	tp=10 ms	72 A ² s
di/dt	Critical rate of rise of on-state current Gate supply : I _G = 100 mA di _G /dt = 1 A/μs		100 A/μs
T _{stg} T _j	Storage and operating junction temperature range		- 40 to + 150 - 40 to + 125 °C °C
T _I	Maximum lead temperature for soldering during 10 s at 4.5 mm from case		260 °C

Symbol	Parameter	TYN/TXN							Unit
		0512	112	212	412	612	812	1012	
V _{DRM} V _{RRM}	Repetitive peak off-state voltage T _j = 125 °C	50	100	200	400	600	800	1000	V

TXN/TYN 0512 ---> TXN/TYN 1012

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
Rth (j-a)	Junction to ambient		60	°C/W
Rth (j-c) DC	Junction to case for DC	TXN	3.5	°C/W
		TYN	2.5	

GATE CHARACTERISTICS (maximum values)

PG (AV) = 1W PGM = 10W (tp = 20 μs) IFGM = 4A (tp = 20 μs) VRGM = 5 V.

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Value	Unit
IGT	VD=12V (DC) RL=33Ω	Tj=25°C	MAX	15	mA
VGT	VD=12V (DC) RL=33Ω	Tj=25°C	MAX	1.5	V
VGD	VD=VDRM RL=3.3kΩ	Tj= 125°C	MIN	0.2	V
tgt	VD=VDRM IG = 40mA dIG/dt = 0.5A/μs	Tj=25°C	TYP	2	μs
IL	IG= 1.2 IGT	Tj=25°C	TYP	50	mA
IH	IT= 100mA gate open	Tj=25°C	MAX	30	mA
VTM	ITM= 24A tp= 380μs	Tj=25°C	MAX	1.6	V
IDRM IRRM	VDRM Rated VRRM Rated	Tj=25°C	MAX	0.01	mA
		Tj= 125°C		3	
dV/dt	Linear slope up to VD=67%VDRM gate open	Tj= 125°C	MIN	200	V/μs
tq	VD=67%VDRM ITM= 24A VR= 25V dITM/dt=30 A/μs dVD/dt= 50V/μs	Tj= 125°C	TYP	70	μs

TXN/TYN 0512 ---> TXN/TYN 1012

Fig.1 : Maximum average power dissipation versus average on-state current (TXN).

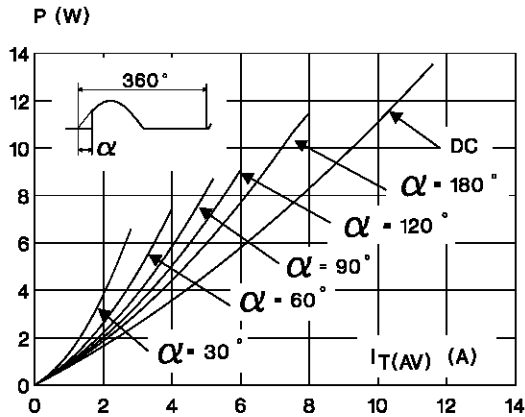


Fig.3 : Maximum average power dissipation versus average on-state current (TYN).

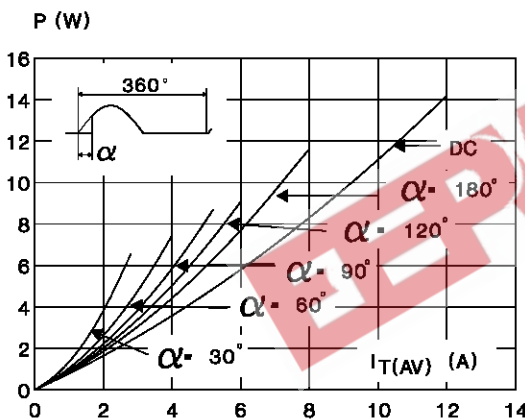


Fig.5 : Average on-state current versus case temperature (TXN).

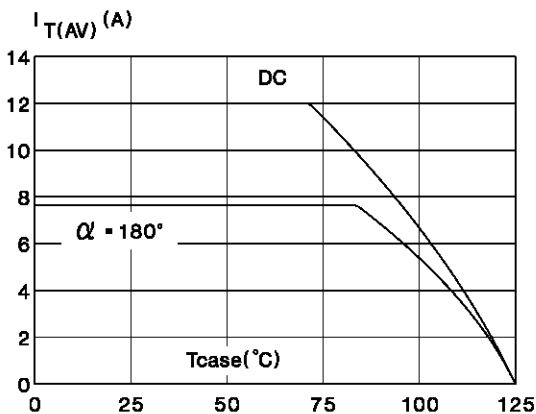


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TXN).

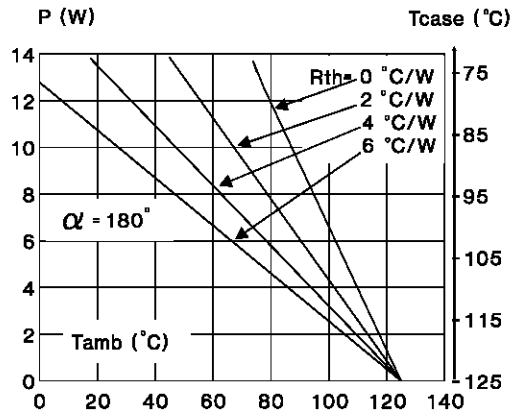


Fig.4 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TYN).

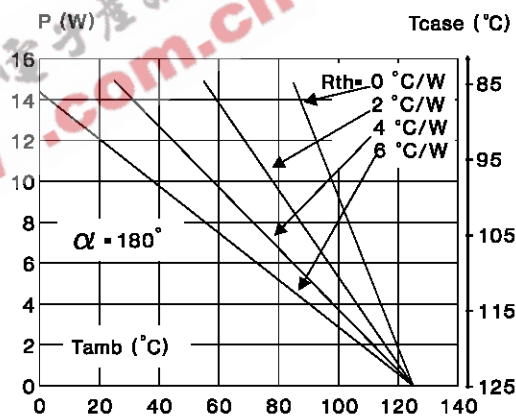
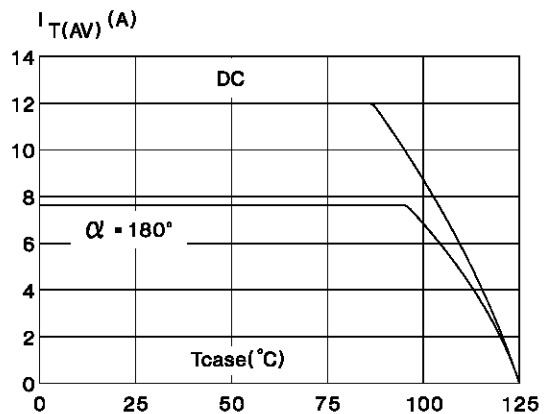


Fig.6 : Average on-state current versus case temperature (TYN).



TXN/TYN 0512 ---> TXN/TYN 1012

Fig.7 : Relative variation of thermal impedance versus pulse duration.

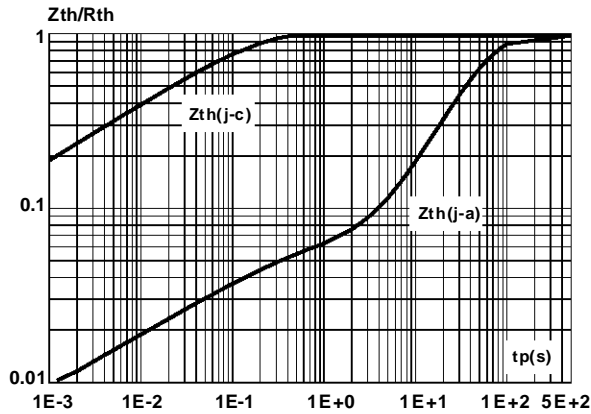


Fig.8 : Relative variation of gate trigger current versus junction temperature.

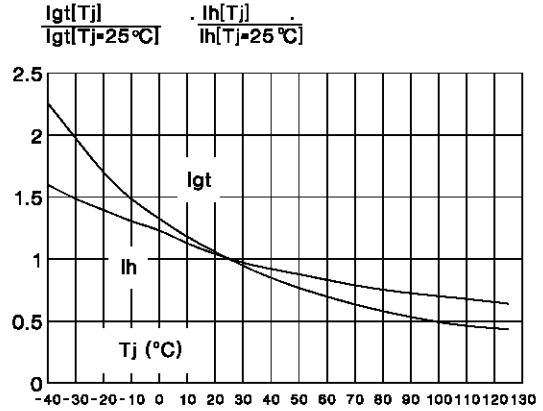


Fig.9 : Non repetitive surge peak on-state current versus number of cycles.

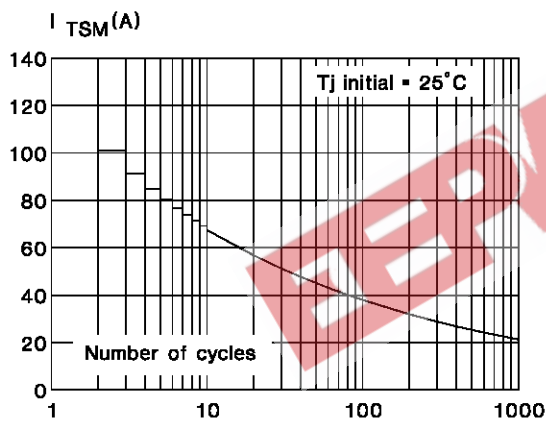


Fig.10 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

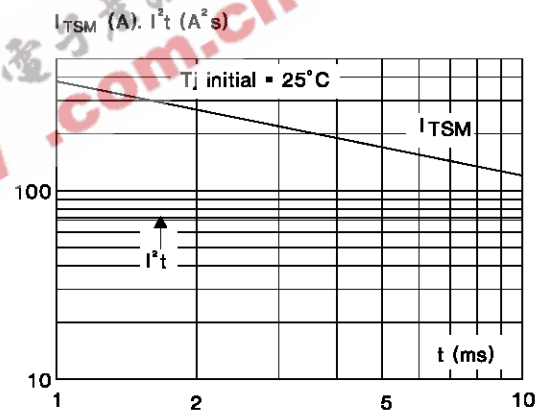
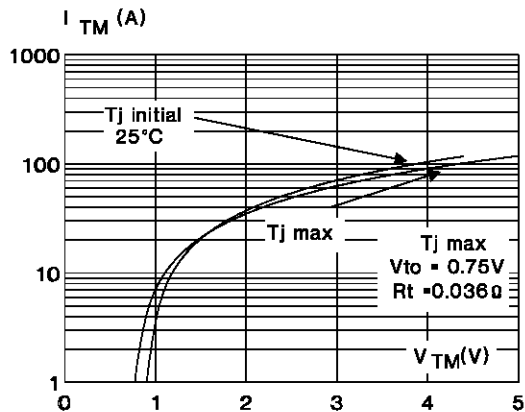
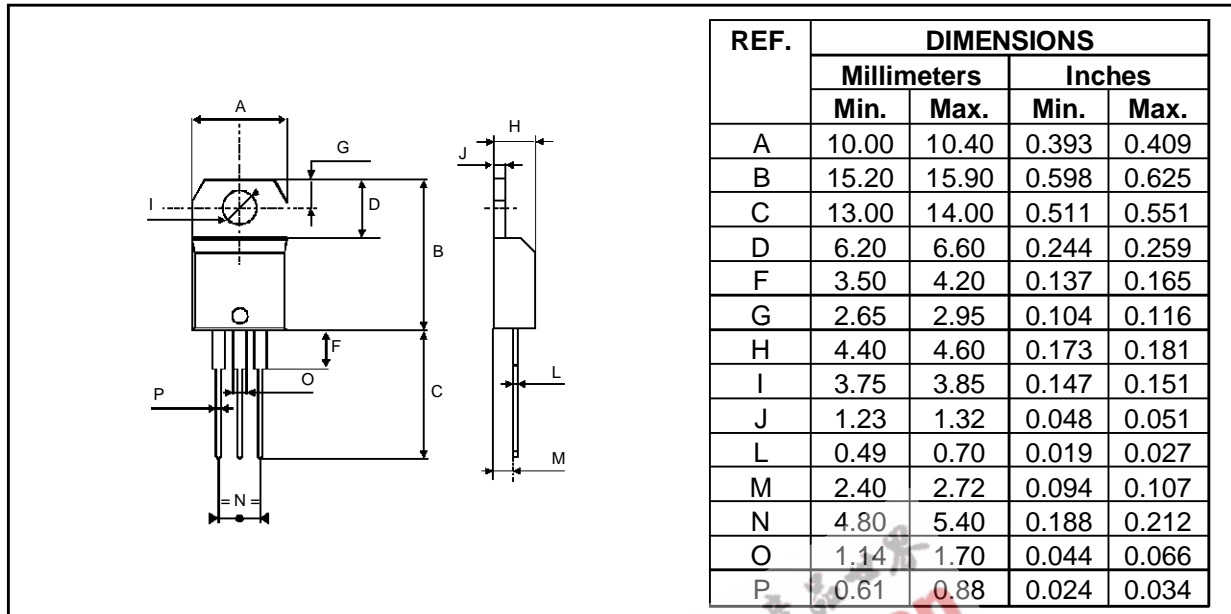


Fig.11 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA

TO220AB Plastic



Cooling method : by conduction (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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