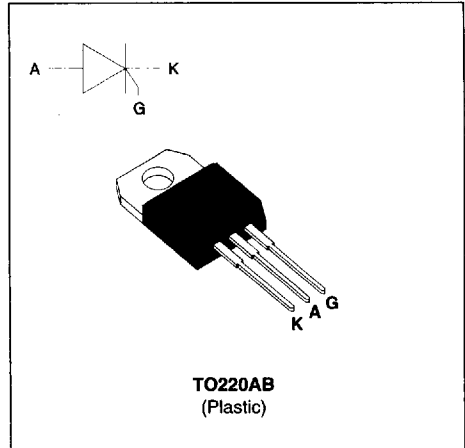


FEATURES

- 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 Tc=80°C TYN Tc=90°C	12 A
$I_{T(AV)}$	Average on-state current (180° conduction angle, single phase circuit)	TXN Tc=80°C TYN 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 A
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 °C - 40 to + 125 °C
TI	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

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) I_{FGM} = 4A (tp = 20 μs) V_{RGM} = 5 V.

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions			Value	Unit
I _{GT}	V _D =12V (DC) R _L =33Ω	T _J =25°C	MAX	15	mA
V _{GT}	V _D =12V (DC) R _L =33Ω	T _J =25°C	MAX	1.5	V
V _{GD}	V _D =V _{DRM} R _L =3.3kΩ	T _J = 125°C	MIN	0.2	V
t _{gt}	V _D =V _{DRM} I _G = 40mA dI _G /dt = 0.5A/μs	T _J =25°C	TYP	2	μs
I _L	I _G = 1.2 I _{GT}	T _J =25°C	TYP	50	mA
I _H	I _T = 100mA gate open	T _J =25°C	MAX	30	mA
V _{TM}	I _{TM} = 24A tp= 380μs	T _J =25°C	MAX	1.6	V
I _{DRM} I _{RRM}	V _{DRM} Rated V _{RRM} Rated	T _J =25°C	MAX	0.01	mA
		T _J = 125°C		3	
dV/dt	Linear slope up to V _D =67%V _{DRM} gate open	T _J = 125°C	MIN	200	V/μs
t _q	V _D =67%V _{DRM} I _{TM} = 24A V _R = 25V dI _{TM} /dt=30 A/μs dV _D /dt= 50V/μs	T _J = 125°C	TYP	70	μs

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

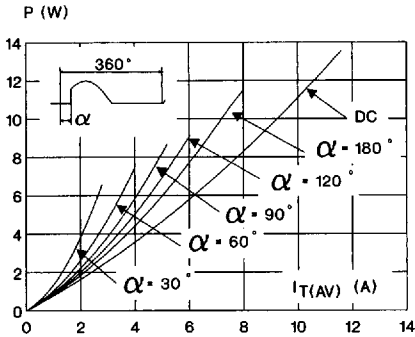


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TXN).

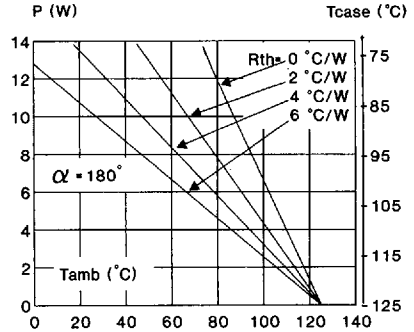


Fig.3 : Maximum average power dissipation versus average on-state current (TYN).

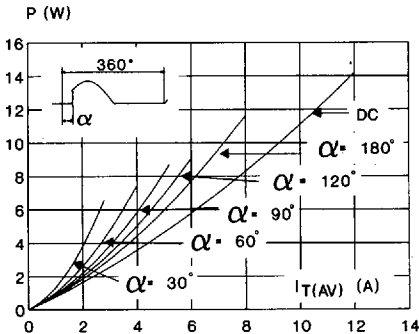


Fig.4 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TYN).

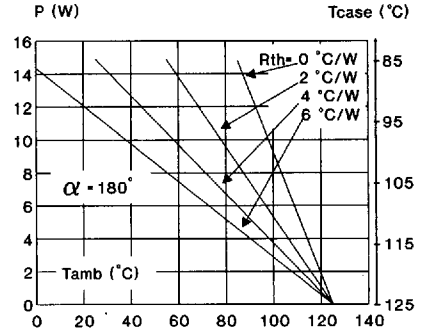


Fig.5 : Average on-state current versus case temperature (TXN).

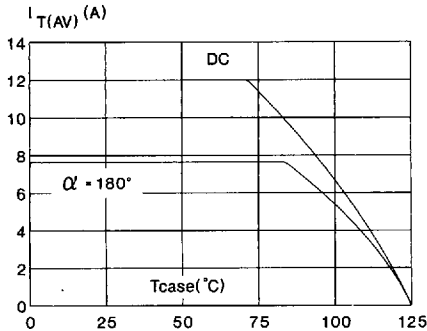


Fig.6 : Average on-state current versus case temperature (TYN).

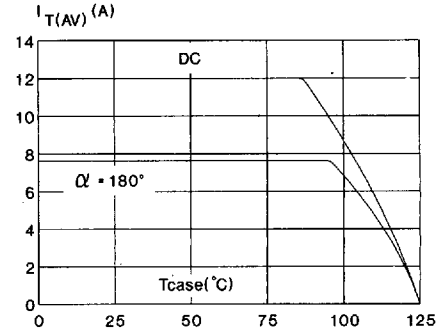


Fig.7 : Relative variation of thermal impedance versus pulse duration.

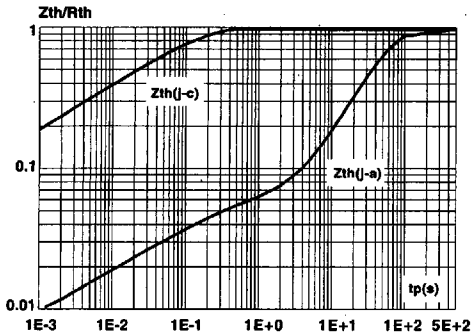


Fig.9 : Non repetitive surge peak on-state current versus number of cycles.

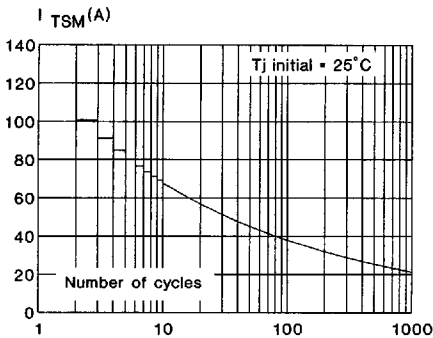


Fig.11 : On-state characteristics (maximum values).

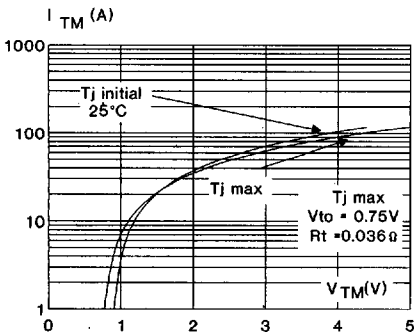


Fig.8 : Relative variation of gate trigger current versus junction temperature.

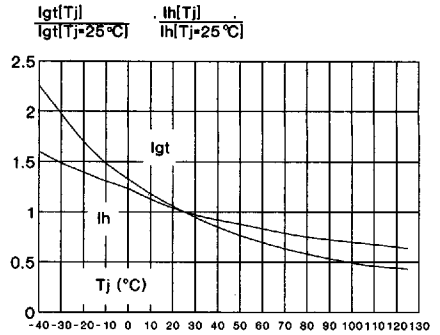
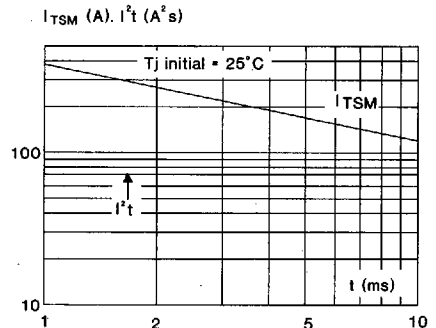
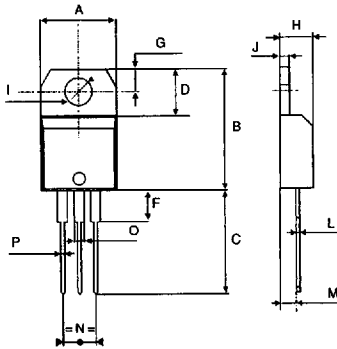


Fig.10 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .



PACKAGE MECHANICAL DATA

TO220AB Plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	10.00	10.40	0.393	0.409
B	15.20	15.90	0.598	0.625
C	13.00	14.00	0.511	0.551
D	6.20	6.60	0.244	0.259
F	3.50	4.20	0.137	0.165
G	2.65	2.95	0.104	0.116
H	4.40	4.60	0.173	0.181
I	3.75	3.85	0.147	0.151
J	1.23	1.32	0.048	0.051
L	0.49	0.70	0.019	0.027
M	2.40	2.72	0.094	0.107
N	4.80	5.40	0.188	0.212
O	1.14	1.70	0.044	0.066
P	0.61	0.88	0.024	0.034

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.