



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



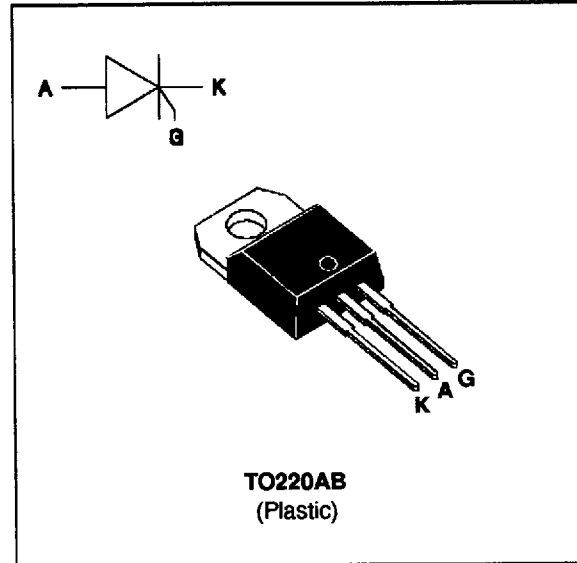


**FEATURES**

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

**DESCRIPTION**

The TYN/TXN 058 ---> TYN/TXN 1008 Family of Silicon Controlled Rectifiers uses a high performance glass passivated chips 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=100°C Tc=105°C	8 A	
$I_T(AV)$	Average on-state current (180° conduction angle, single phase circuit)	TXN TYN	Tc=100°C Tc=105°C	5 A	
$I_{TSM}$	Non repetitive surge peak on-state current (T <sub>j</sub> initial = 25°C)		tp=8.3 ms	84	A
			tp=10 ms	80	
$i^2t$	$i^2t$ value		tp=10 ms	32	A <sup>2</sup> s
di/dt	Critical rate of rise of on-state current Gate supply : I <sub>G</sub> = 100 mA di <sub>G</sub> /dt = 1 A/μs			50	A/μs
T <sub>stg</sub> T <sub>j</sub>	Storage and operating junction temperature range			- 40 to + 150 - 40 to + 125	°C °C
T <sub>l</sub>	Maximum lead temperature for soldering during 10 s at 4.5 mm from case			260	°C

Symbol	Parameter	TYN/TXN							Unit
		058	108	208	408	608	808	1008	
V <sub>DRM</sub> V <sub>RRM</sub>	Repetitive peak off-state voltage T <sub>j</sub> = 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
		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
					BLANK	G	
IGT	VD=12V (DC) RL=33Ω	Tj=25°C	MAX	15	25	mA	
VGT	VD=12V (DC) RL=33Ω	Tj=25°C	MAX	1.5		V	
VGD	VD=VDRM RL=3.3kΩ	Tj= 110°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	45	mA	
VTM	ITM= 16A tp= 380μs	Tj=25°C	MAX	1.8		V	
IDRM IRRM	VDRM Rated VRRM Rated	Tj=25°C	MAX	0.01		mA	
		Tj= 110°C		2			
dV/dt	Linear slope up to VD=67%VDRM gate open	Tj= 110°C	MIN	200	500	V/μs	
tq	VD=67%VDRM ITM= 16A VR= 25V dITM/dt=30 A/μs dVD/dt= 50V/μs	Tj= 110°C	TYP	70		μs	

Package	$I_{T(RMS)}$	$V_{DRM} / V_{RRM}$	Sensitivity Specification	
	A	V	BLANK	G
TXN (Insulated)	8	50	X	X
		100	X	X
		200	X	X
		400	X	X
		600	X	X
		800	X	X
		1000	X	X
TYN (Uninsulated)	8	50	X	X
		100	X	X
		200	X	X
		400	X	X
		600	X	X
		800	X	X
		1000	X	X

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).

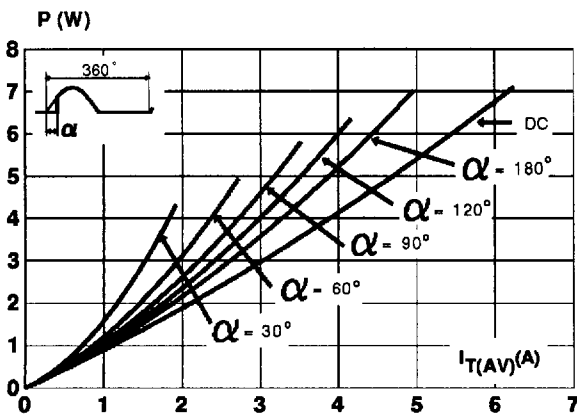


Fig.3 : Maximum average power dissipation versus average on-state current (TYN).

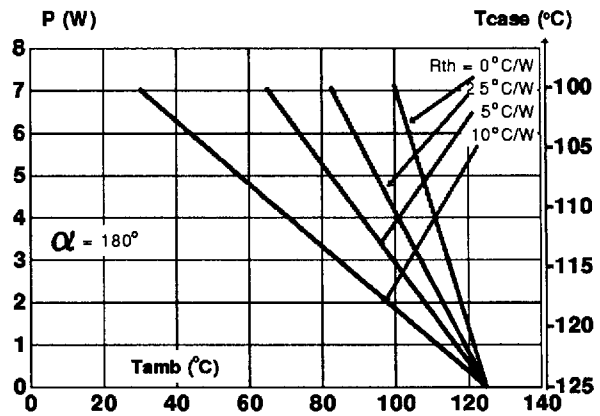
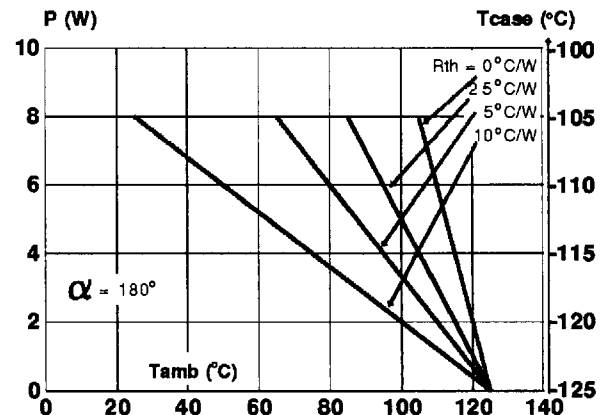
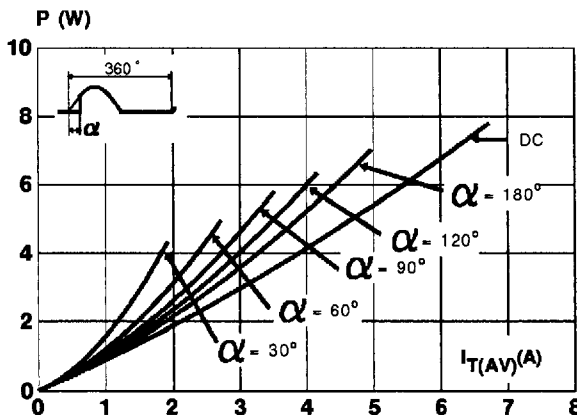


Fig.4 : Correlation between maximum average power dissipation and maximum allowable temperatures ( $T_{amb}$  and  $T_{case}$ ) for different thermal resistances heatsink + contact (TYN).



TXN/TYN 058 (G) ---> TXN/TYN 1008 (G)

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

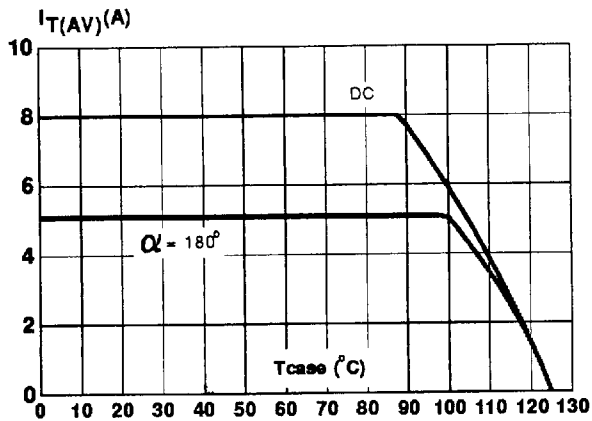


Fig.6 : Average on-state current versus case temperature (TYN).

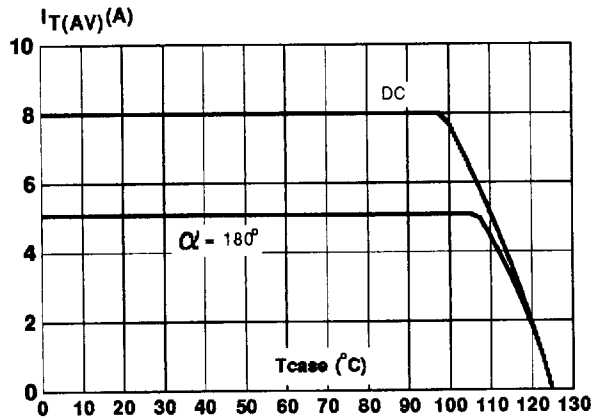


Fig.7 : Relative variation of thermal impedance versus pulse duration.

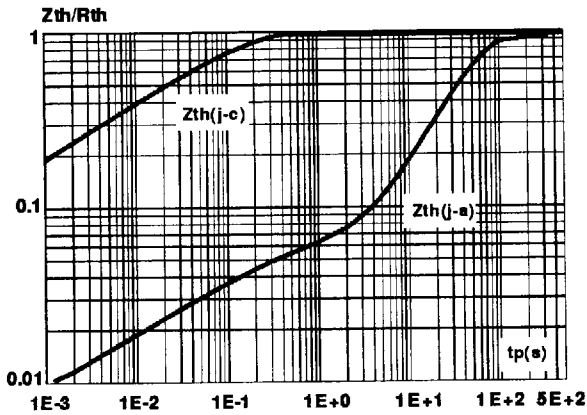


Fig.8 : Relative variation of gate trigger current versus junction temperature.

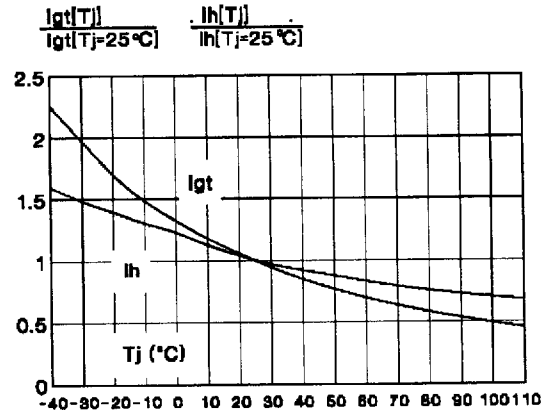


Fig.9 : Non repetitive surge peak on-state current versus number of cycles.

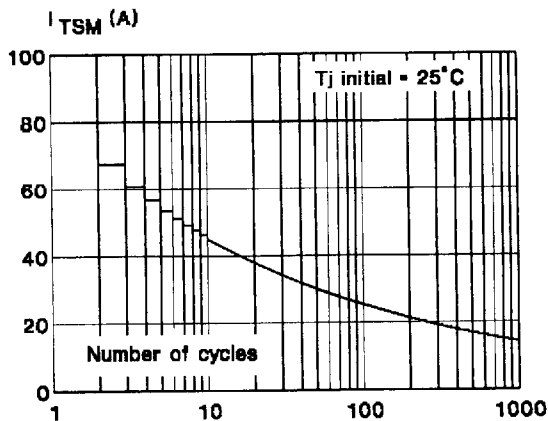


Fig.10 : Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t \leq 10$  ms, and corresponding value of  $I^2t$ .

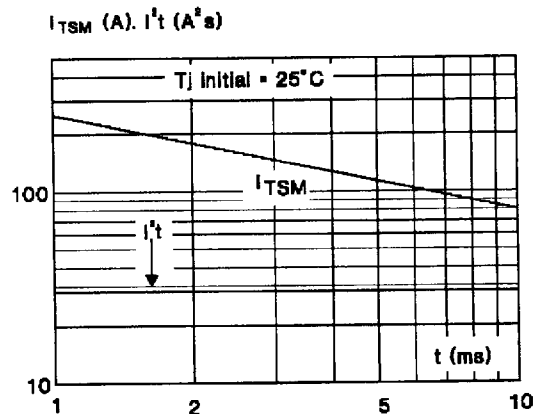
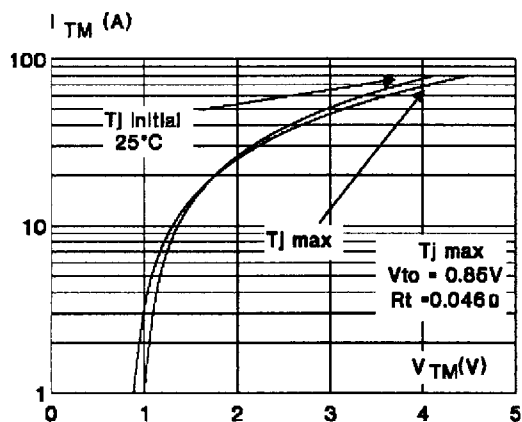
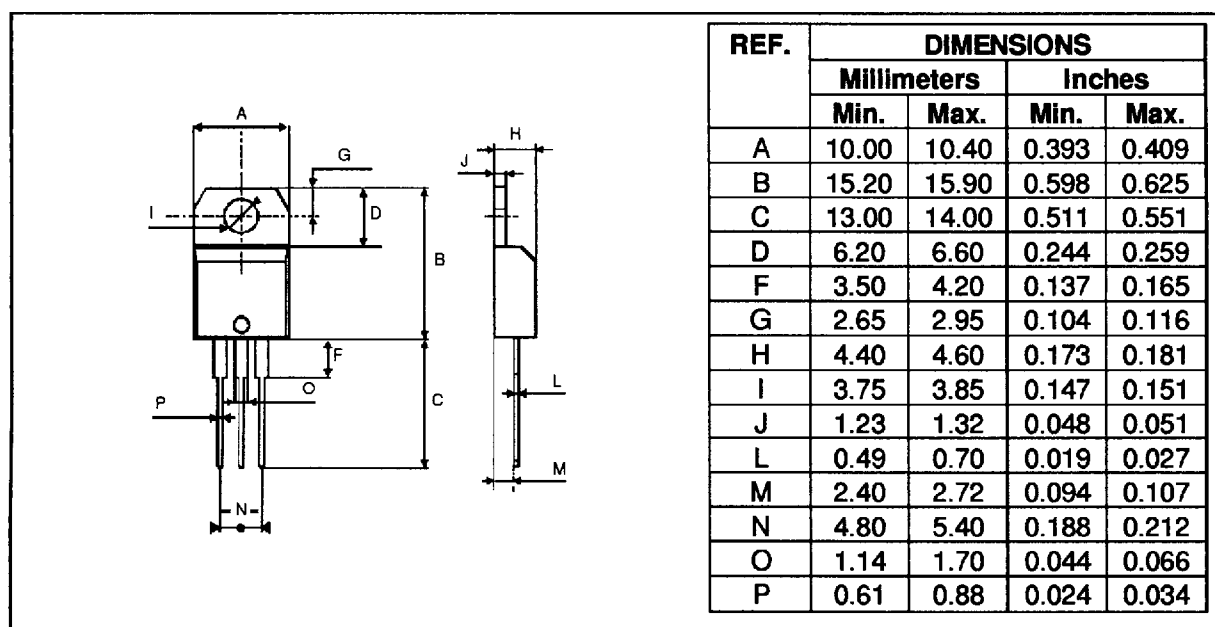


Fig.11 : On-state characteristics (maximum values).



**PACKAGE MECHANICAL DATA**

TO220AB Plastic



Cooling method : C  
 Marking : type number  
 Weight : 2.3 g

Recommended torque value : 0.8 m.N.  
 Maximum torque value : 1 m.N.

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied.

SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.