

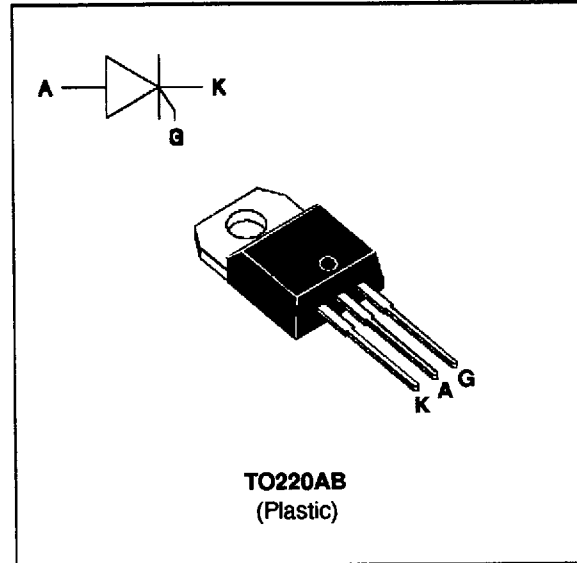


FEATURES

- 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 Tc=100°C TYN Tc=105°C	8	A
$I_T(AV)$	Average on-state current (180° conduction angle, single phase circuit)	TXN Tc=100°C TYN Tc=105°C	5	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	$t_p=8.3$ ms	84	A
		$t_p=10$ ms	80	
i^2t	i^2t value	$t_p=10$ ms	32	A ² s
di/dt	Critical rate of rise of on-state current Gate supply : $I_G = 100$ mA $di_G/dt = 1$ A/ μ s		50	A/ μ s
T_{stg} T_j	Storage and operating junction temperature range		- 40 to + 150 - 40 to + 125	°C °C
T_l	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_{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
		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).

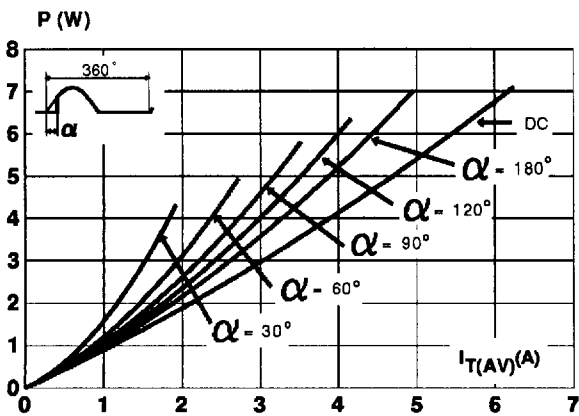


Fig.3 : Maximum average power dissipation versus average on-state current (TYN).

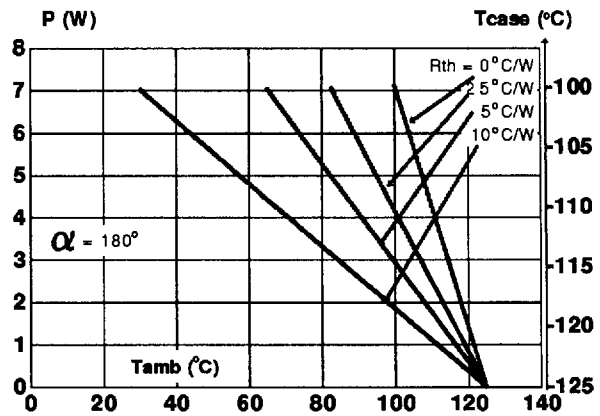


Fig.4 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TYN).

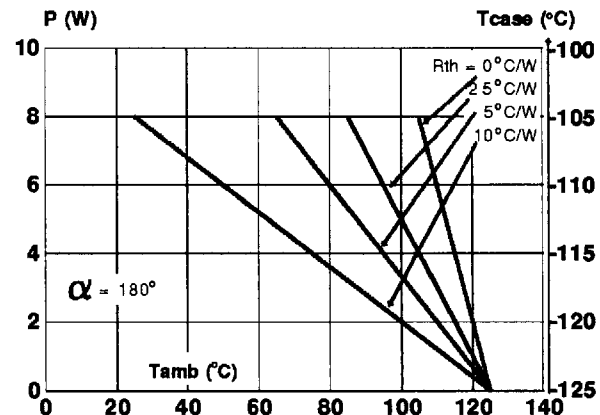
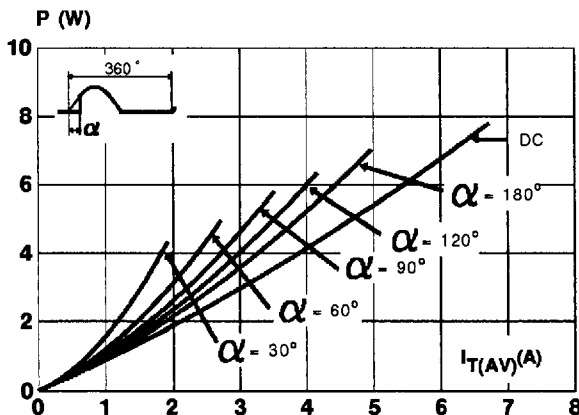


Fig.5 : Average on-state current versus case temperature (TXN).

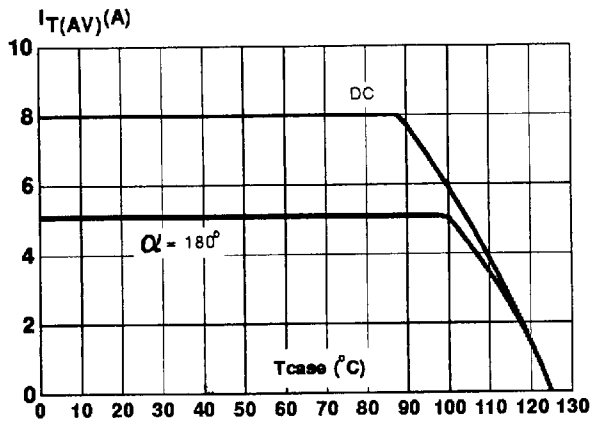


Fig.6 : Average on-state current versus case temperature (TYN).

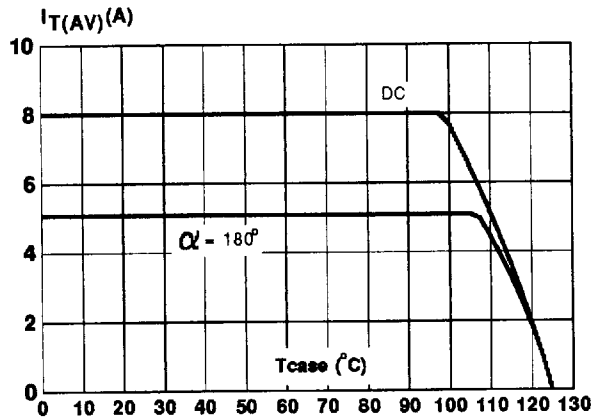


Fig.7 : Relative variation of thermal impedance versus pulse duration.

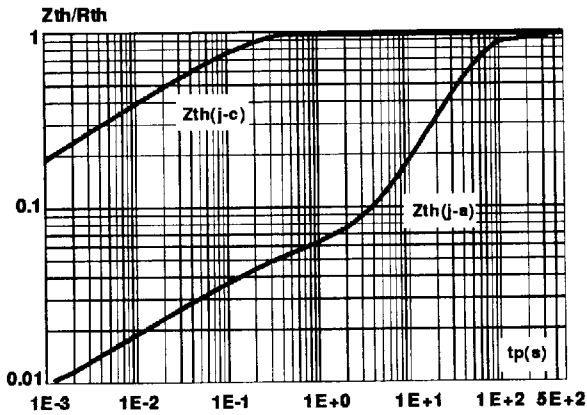


Fig.8 : Relative variation of gate trigger current versus junction temperature.

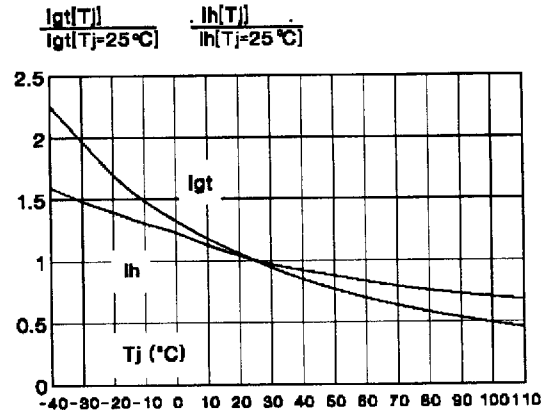


Fig.9 : Non repetitive surge peak on-state current versus number of cycles.

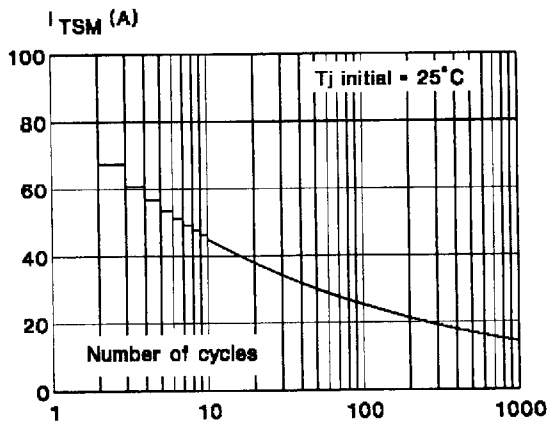


Fig.10 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

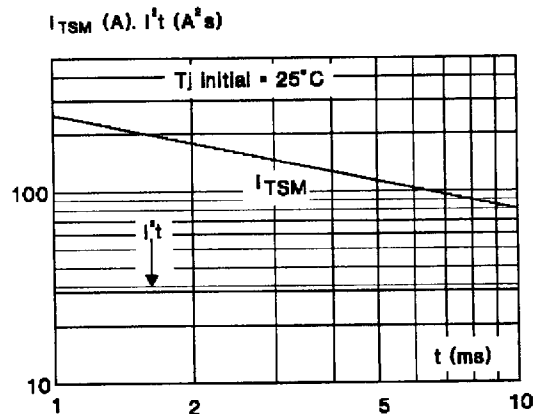
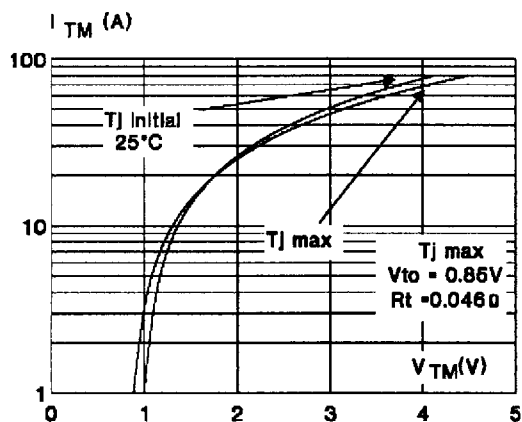
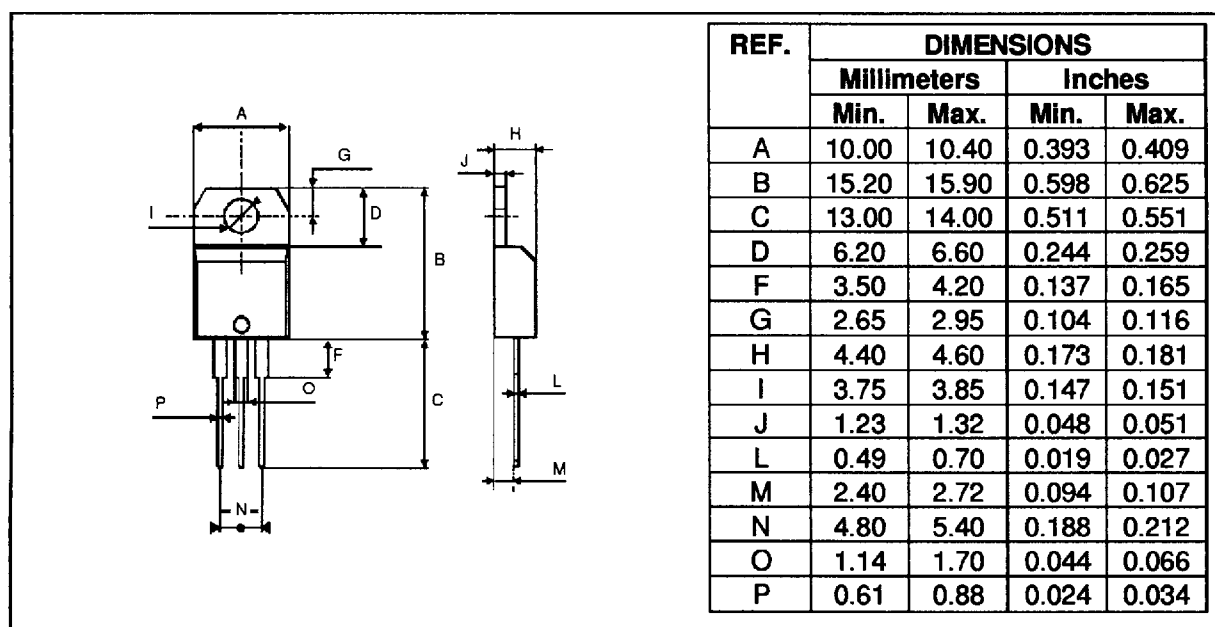


Fig.11 : On-state characteristics (maximum values).



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.

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