

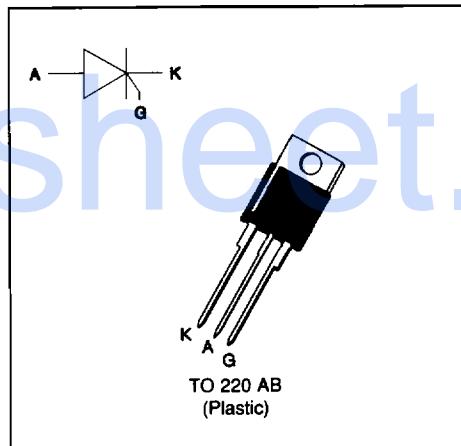
FEATURES

- 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
IT(RMS)	RMS on-state current (180° conduction angle)	TXN TYN	Tc=85°C Tc=90°C	8
IT(AV)	Average on-state current (180° conduction angle, single phase circuit)	TXN TYN	Tc=85°C Tc=90°C	5
ITSM	Non repetitive surge peak on-state current (Tj initial = 25°C)		tp=8.3 ms	84
			tp=10 ms	80
I2t	I2t value		tp=10 ms	A ² s
dI/dt	Critical rate of rise of on-state current Gate supply : Ig = 250 mA dI/dt = 1 A/μs			A/μs
Tstg Tj	Storage and operating junction temperature range		- 40 to + 150 - 40 to + 125	°C °C
Tl	Maximum lead temperature for soldering during 10 s at 4.5 mm from case		230	°C

Symbol	Parameter	TYN/TXN							Unit
		058	108	208	408	608	808	1008	
VDRM VRMM	Repetitive peak off-state voltage Tj = 125 °C	50	100	200	400	600	800	1000	V

THERMAL RESISTANCES

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

GATE CHARACTERISTICS (maximum values)

P_G (AV) = 1W P_{GM} = 40W (t_p = 20 μs) I_{FGM} = 4A (t_p = 20 μs) V_{FGM} = 16V (t_p = 20 μs) V_{RGM} = 5 V.

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions	Value		Unit
		BLANK	G	
I _{GT}	V _D =12V (DC) R _L =33Ω	T _j =25°C	MAX	15 25 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 = 110°C	MIN	0.2 V
t _{GT}	V _D =V _{DRM} I _G = 90mA dI _G /dt = 0.8A/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 45 mA
V _{TM}	I _{TM} = 16A t _p = 380μs	T _j =25°C	MAX	1.8 V
I _{DRM} I _{RRM}	V _{DRM} Rated V _{RRM} Rated	T _j =25°C	MAX	0.01 mA
		T _j = 110°C		2
dV/dt	Linear slope up to V _D =67%V _{DRM} gate open	T _j = 110°C	MIN	200 500 V/μs
T _q	V _D =67%V _{DRM} I _{TM} = 16A V _R = 25V dI _{TM} /dt=30 A/μs dV _D /dt= 50V/μs	T _j = 110°C	TYP	70 μs

Package	$I_T(\text{RMS})$	V _{DRM} / V _{RRM}	Sensitivity Specification	
			A	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)		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).

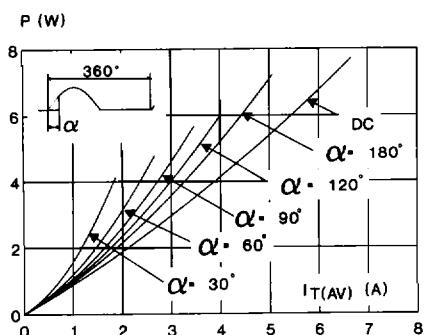


Fig.3 : Maximum average power dissipation versus average on-state current (TYN).

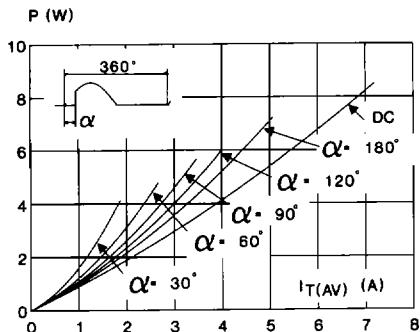


Fig.2 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TXN).

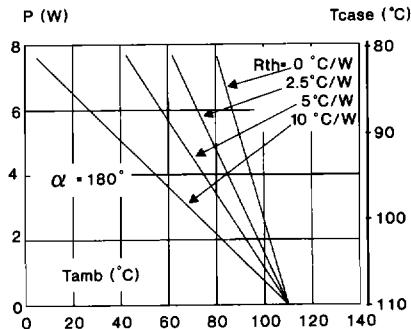


Fig.4 : Correlation between maximum average power dissipation and maximum allowable temperatures (T_{amb} and T_{case}) for different thermal resistances heatsink + contact (TYN).

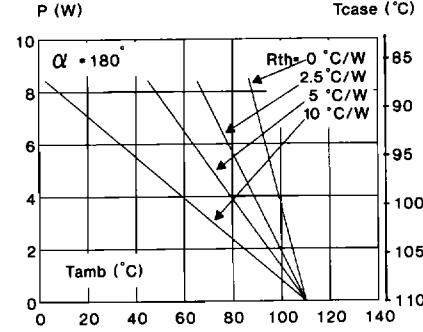


Fig.5 : Average on-state current versus case temperature (TXN).

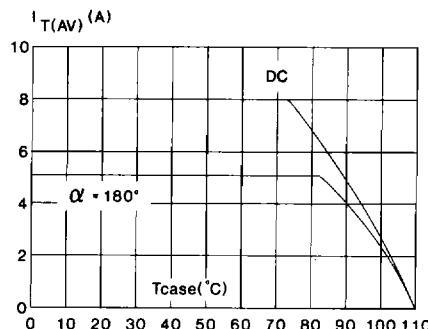


Fig.7 : Average on-state current versus case temperature (TYN).

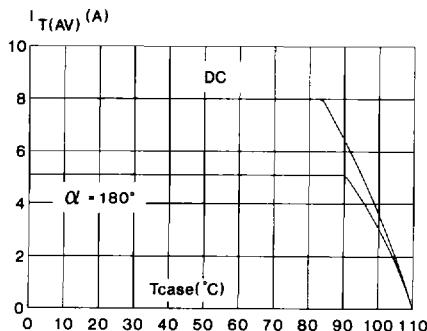


Fig.9 : Relative variation of gate trigger current versus junction temperature.

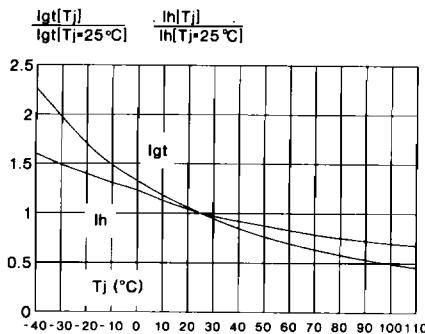


Fig.6 : Thermal transient impedance junction to ambient versus pulse duration (TXN).

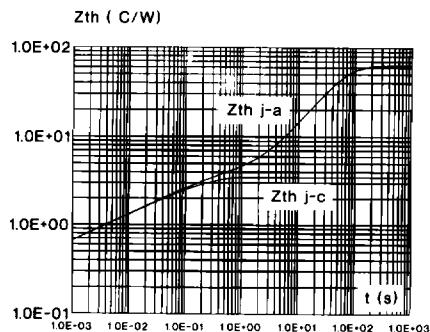


Fig.8 : Thermal transient impedance junction to ambient versus pulse duration (TYN).

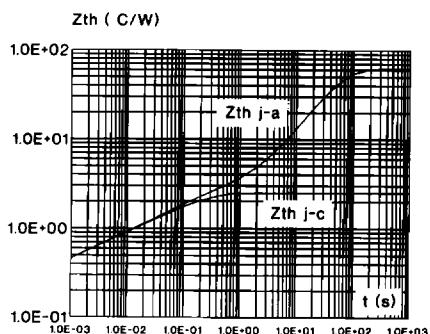


Fig.10 : Non repetitive surge peak on-state current versus number of cycles.

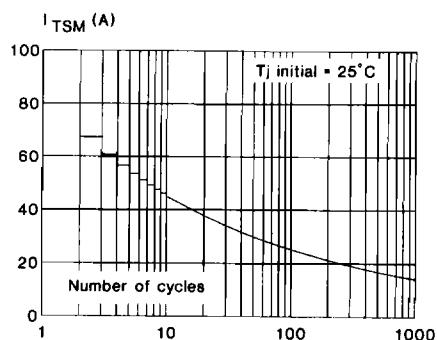


Fig.11 : Non repetitive surge peak on-state current for a sinusoidal pulse with width : $t \leq 10$ ms, and corresponding value of I^2t .

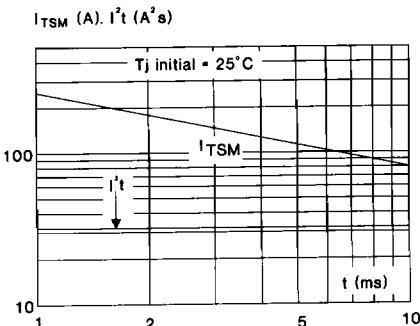
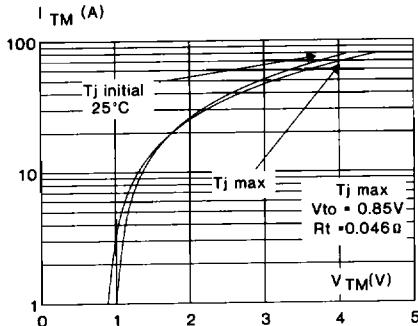
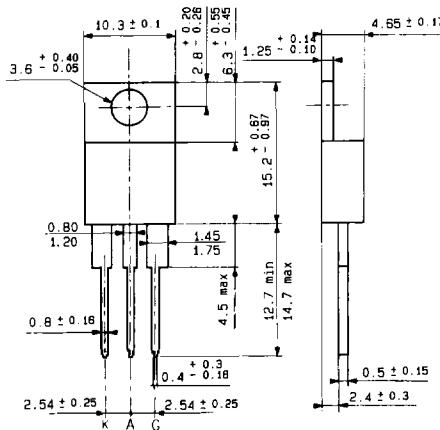


Fig12 : On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA (in millimeters)

TO 220 AB Plastic



Cooling method : by conduction (method C)

Marking : type number

Weight : 2 g

Polarity : N A

Stud torque : N A