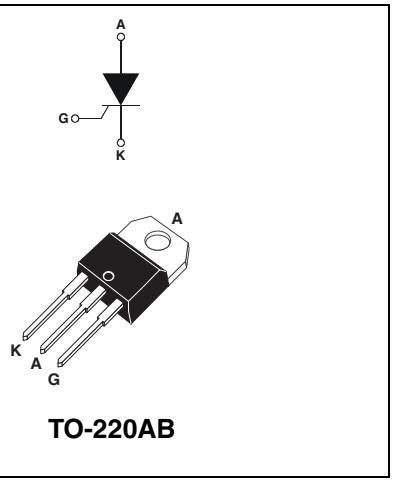
SZGKT
SEMICONDUCTOR

TYN606
TYN1006

6A SCRs

Table 1: Main Features

Symbol	Value	Unit
$I_{T(RMS)}$	6	A
V_{DRM}/V_{RRM}	600 and 1000	V
I_{GT}	15	mA



TO-220AB

DESCRIPTION

The **TYN606** and **TYN1006** family of Silicon Controlled Rectifiers are high performance glass passivated technology.

This general purpose Family of Silicon Controlled Rectifiers is designed for power supply up to 400Hz on resistive or inductive load.

Table 2: Order Codes

Part Numbers	Marking
TYN606RG	TYN606
TYN1006RG	TYN1006

Table 3: Absolute Ratings (limiting values)

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)		T_c = 110°C	6	A
$I_{T(AV)}$	Average on-state current (180° conduction angle)		T_c = 110°C	3.8	A
I_{TSM}	Non repetitive surge peak on-state current	t_p = 8.3 ms	T_j = 25°C	73	A
		t_p = 10 ms		70	
I^2t	I^2t Value for fusing	t_p = 10 ms	T_j = 25°C	24.5	A^2s
dI/dt	Critical rate of rise of on-state current I_G = 100 mA , dI_G/dt = 0.1 A/µs		T_j = 125°C	50	A/µs
I_{GM}	Peak gate current	t_p = 20 µs	T_j = 125°C	4	A
$P_{G(AV)}$	Average gate power dissipation		T_j = 125°C	1	W
P_{GM}	Maximum gate power	t_p = 20 µs	T_j = 125°C	10	W
V_{DRM} V_{RRM}	Repetitive peak off-state voltage	**TYN606**	T_j = 125°C	600	V
		TYN1006		1000	
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			- 40 to + 150 - 40 to + 125	°C
T_L	Maximum lead temperature for soldering during 10s at 2mm from case			260	°C

Figure 1: Ordering Information Scheme

TYN 6 06 RG

Standard SCR series

Voltage
6 = 600V
10 = 100V

Current
06 = 6A

Packing mode
RG = Tube

Tables 4: Electrical Characteristics (T_j = 25°C, unless otherwise specified)

Symbol	Test Conditions			Value	Unit
I_{GT}	V_D = 12 V (D.C.) R_L = 33 Ω		MAX.	15	mA
V_{GT}			MAX.	1.5	V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ	T_j = 110°C	MIN.	0.2	V
t_{gt}	$V_D = V_{DRM}$ I_G = 40 mA dI_G/dt = 0.5 A/µs		TYP.	2	µs
I_H	I_T = 100 mA Gate open		MAX.	30	mA
I_L	$I_G = 1.2 \times I_{GT}$		TYP.	50	mA
dV/dt	Linear slope up to: V_D = 67 % V_{DRM} Gate open	T_j = 110°C	MIN.	200	V/µs
V_{TM}	I_{TM} = 12 A tp = 380 µs		MAX.	1.6	V
I_{DRM} I_{RRM}	$V_{DRM} = V_{RRM}$	T_j = 25°C	MAX.	10	µA
		T_j = 110°C		2	mA
t_q	V_D = 67 % V_{DRM} I_{TM} = 12 A V_R = 25 V dI_{TM}/dt = 30 A/µs dV_D/dt = 50 V/µs	T_j = 110°C	TYP.	70	µs

Table 5: Thermal Resistance

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case (D.C.)	2.5	°C/W
$R_{th(j-a)}$	Junction to ambient	60	°C/W

Figure 2: Maximum average power dissipation versus average on-state current

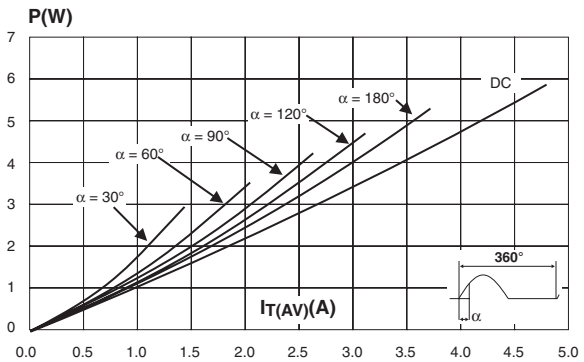


Figure 3: Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{lead})

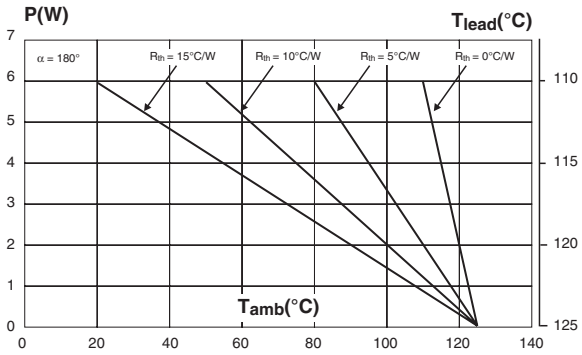


Figure 4: Average on-state current versus case temperature

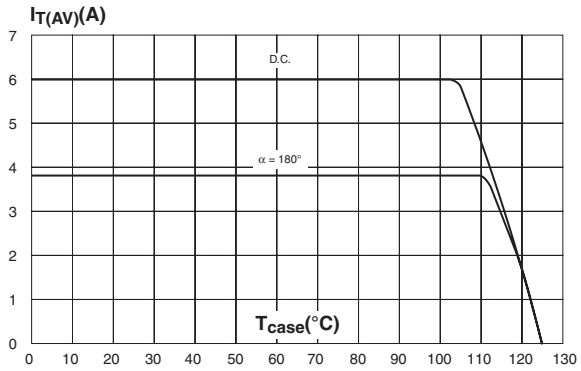


Figure 5: Relative variation of thermal impedance versus pulse duration

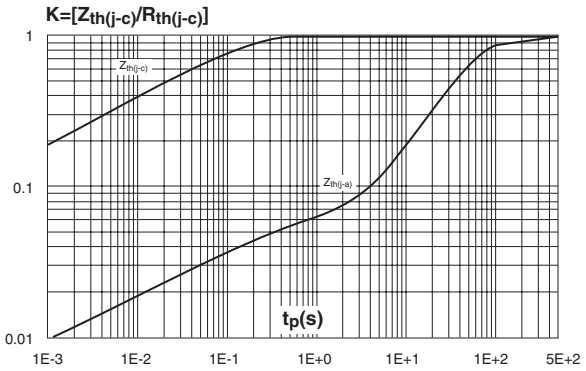


Figure 6: Relative variation of gate trigger current versus junction temperature

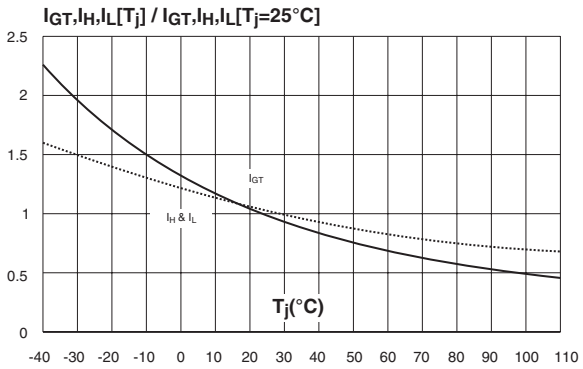


Figure 7: Surge peak on-state current versus number of cycles

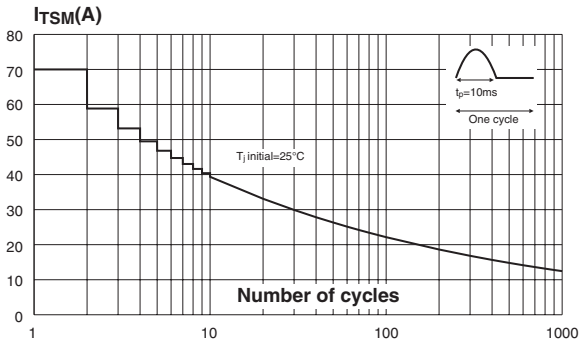


Figure 8: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10 ms, and corresponding values of I²t

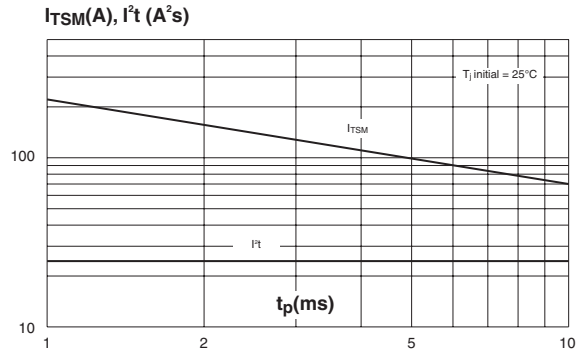


Figure 9: On-state characteristics (maximum values)

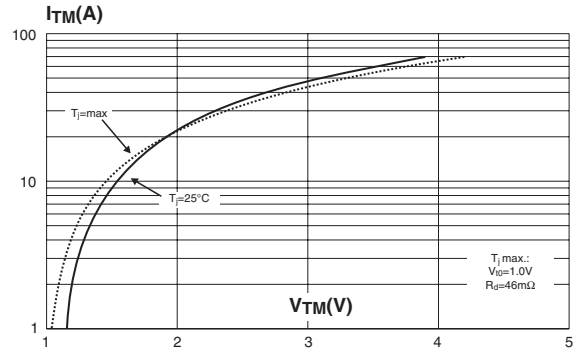
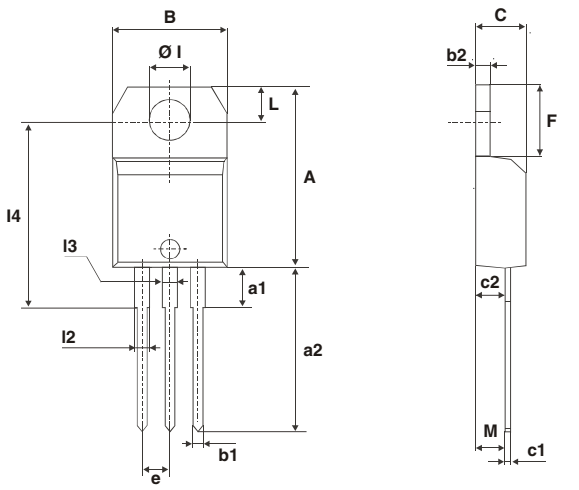


Figure 10: TO-220AB Package Mechanical Data



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
ØI	3.75		3.85	0.147		0.151
l4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
l2	1.14		1.70	0.044		0.066
l3	1.14		1.70	0.044		0.066
M		2.60			0.102	