SEMICONDUCTOR
TECHNICAL DATA

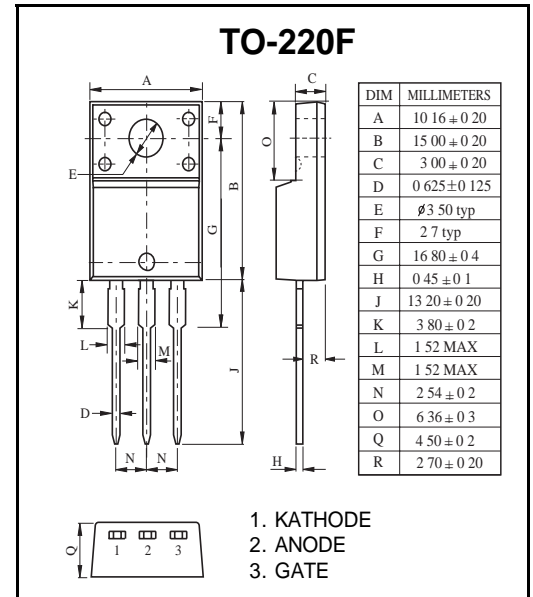# TYN610F

Silicon Planar PNPN Thyristor (10A SCR)

MAIN FEATURES

Symbol	value	unit
$I_{T(RMS)}$	10	A
V_{DRM}/V_{RRM}	600	V
I_{TSM}	100	A

GENERAL DESCRIPTION

- Glass passivated triacs in a plastic envelope, intended for use in applications requiring high bidirectional transient andblocking voltage capability and high thermal cycling performance.
- Typical applications include motor control, industrial and domestic lighting, heating and static switching.

TO-220F

DIM	MILLIMETERS
A	10 16 ± 0 20
B	15 00 ± 0 20
C	3 00 ± 0 20
D	0 625 ± 0 125
E	∅3 50 typ
F	2 7 typ
G	16 80 ± 0 4
H	0 45 ± 0 1
J	13 20 ± 0 20
K	3 80 ± 0 2
L	1 52 MAX
M	1 52 MAX
N	2 54 ± 0 2
O	6 36 ± 0 3
Q	4 50 ± 0 2
R	2 70 ± 0 20

1. KATHODE
2. ANODE
3. GATE

ABSOLUTE MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

symbol	parameter			value	unit
$I_{T(RMS)}$	RMS on-state current (full sine wave)	TO-220F	T_C=107℃	10	A
I_{TSM}	Non repetitive surge peak on-state current (full sine wave, Tj =25℃)		t=10ms	100	A
			t=8.3ms	110	
I_{GM}	Peak gate current			4	A
$P_{G(AV)}$	Average gate power dissipation		T_j=125℃	0.5	W
T_{stg}	Storage junction temperature range			-40 to +150	℃
T_j	Operating junction temperature range			-40 to +125	

ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Rated repetitive peak off-state/reverse voltage	V_{DRM}, V_{RRM}	I_D=10µA	600		V
Rated repetitive peak off-state current	I_{DRM}, I_{RRM}	V_D=620V		10	µA
On-state voltage	V_{TM}	I_T=23A	1.4	1.75	V
Gate trigger current	I_{GT}	V_D=12V I_T =0.1A R_L=100Ω		15	mA
Gate trigger voltage	V_{GT}	V_D=12V I_T =0.1A R_L=100Ω		1.45	V
Holding current	I_H	I_T =100mA I_G=20mA		20	mA

Typical Characteristics

Figure 1: Maximum average power dissipation versus average on- state current
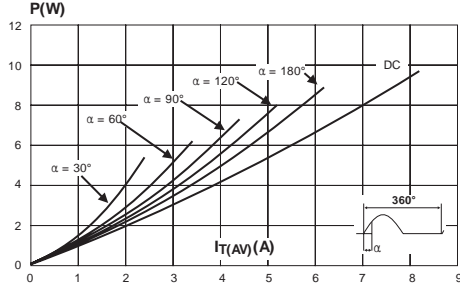

Figure 2: Correlation between maximum average power dissipation and maximum allowable temperature (T_{amb} and T_{lead})
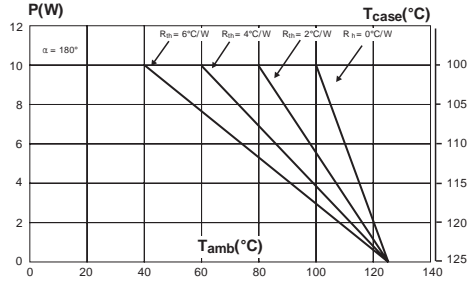

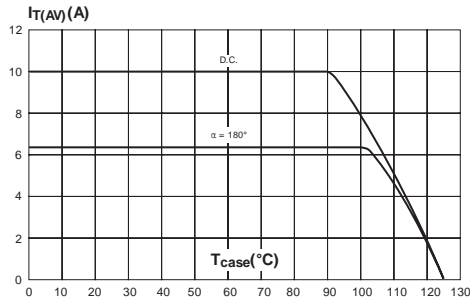**Figure 3: Average on- state current versus case temperature**

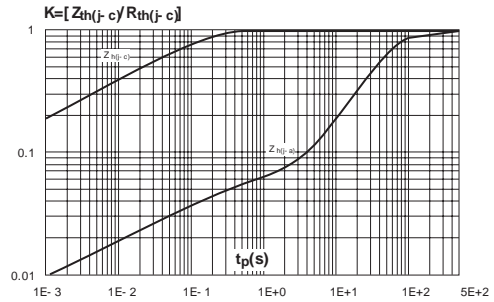**Figure 4: Relative variation of thermal impedance versus pulse duration**

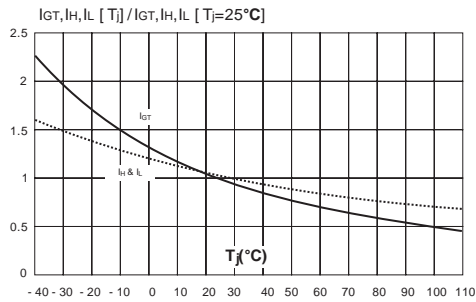**Figure 5: Relative variation of gate trigger current versus junction temperature**

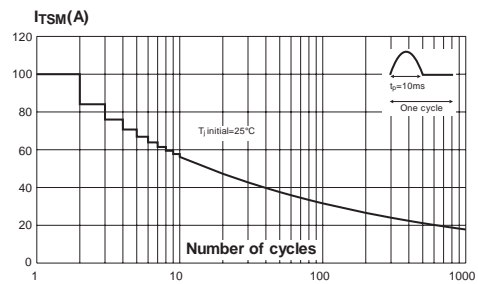**Figure 6: Surge peak on- state current versus number of cycles**

Figure 7: Non- repetitive surge peak on- state current for a sinusoidal pulse with width tp < 10 ms, and corresponding values of I²t
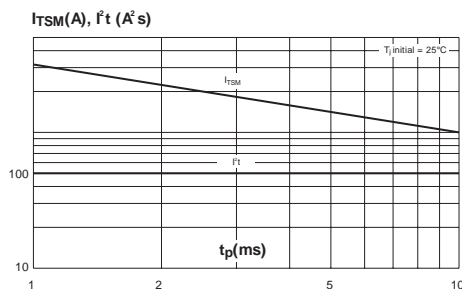

Figure 8: On- state characteristics (maximum values)