TYN612T/812T

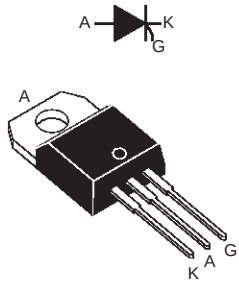
SCR

FEATURES

- HIGH SURGE CAPABILITY
- HIGH ON-STATE CURRENT
- HIGH STABILITY AND RELIABILITY

DESCRIPTION

The TYN612T and TYN812T Family of SCR uses a high performance glass passivated technology.
This general purpose Family of SCR is designed for power supplies up to 400Hz on resistive or inductive load.



TO-220AB
(Plastic)

ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{T(RMS)}$	RMS on-state current (180° conduction angle)	Tc= 110°C	12	A
$I_{T(AV)}$	Average on-state current (180° conduction angle)	Tc= 110°C	8	A
I_{TSM}	Non repetitive surge peak on-state current (T_j initial = 25°C)	tp = 8.3ms tp = 10ms	125 120	A
I^2t	I^2t Value for fusing	tp = 10ms	72	A^2s
dI/dt	Critical rate of rise of on-state current I_G = 100 mA dI_G/dt = 1 A/µs.		100	A/µs
T_{stg} T_j	Storage junction temperature range Operating junction temperature range		- 40 to + 150 - 40 to + 125	°C
Tl	Maximum lead temperature for soldering during 10s		260	°C

Symbol	Parameter	TYN		Unit
		612T	812T	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage T_j = 125°C	600	800	V

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
Rth(j-a)	Junction to ambient	60	°C/W
Rth(j-c)	Junction to case for DC	1.3	°C/W

GATE CHARACTERISTICS (maximum values)

$P_{G\ (AV)}$= 1 W P_{GM} = 10 W (tp = 20 µs) I_{FGM} = 4 A (tp = 20 µs) V_{RGM} = 5 V

ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Type	Value	Unit
I_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	MIN	0.5	mA
			MAX	5	
V_{GT}	V_D=12V (DC) R_L=33Ω	Tj= 25°C	MAX	1.3	V
V_{GD}	V_D=V_{DRM} R_L=3.3kΩ	Tj= 125°C	MIN	0.2	V
I_L	I_G = 1.2 I_{GT}	Tj= 25°C	MAX	30	mA
I_H	I_T= 100mA gate open	Tj= 25°C	MAX	15	mA
V_{TM}	I_{TM}= 24A tp= 380µs	Tj= 25°C	MAX	1.6	V
I_{DRM}	V_D= V_{DRM}	Tj= 25°C	MAX	5	µA
I_{RRM}	V_R= V_{RRM}	Tj= 125°C	MAX	1	mA
dV/dt	V_D=67%V_{DRM} gate open	Tj= 125°C	MIN	40	V/µs

ORDERING INFORMATION

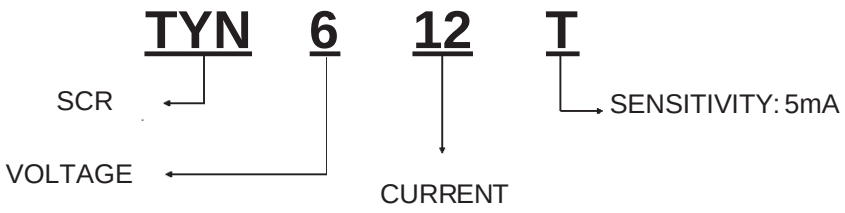


Fig. 1: Maximum average power dissipation versus average on-state current.

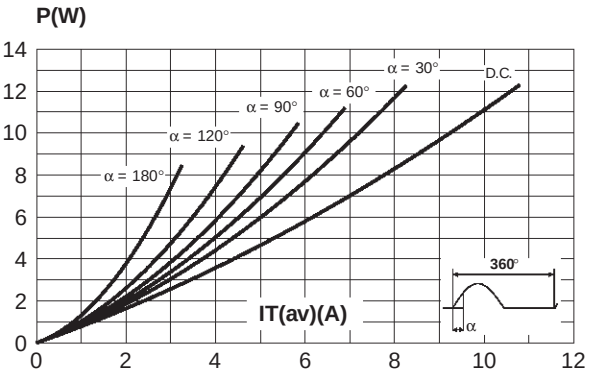


Fig. 2: Correlation between maximum average power dissipation and maximum allowable temperatures (Tamb and Tcase) for different thermal resistances haetsink + contact.

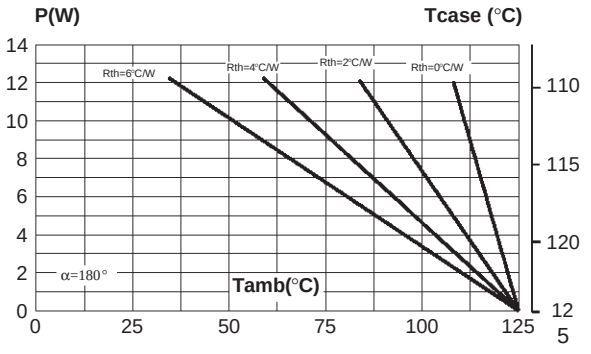


Fig. 3: Average and DC on-state current versus case temperature.

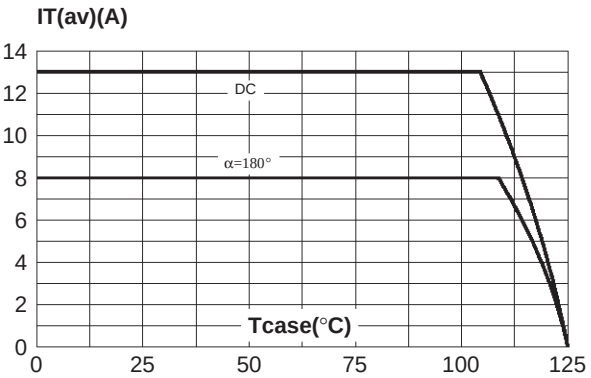


Fig. 4: Relative variation of thermal impedance junction to case versus pulse duration.

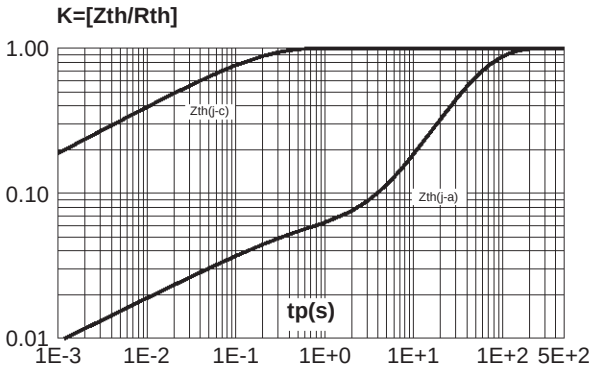


Fig. 5: Relative variation of gate trigger current and holding current versus junction temperature.

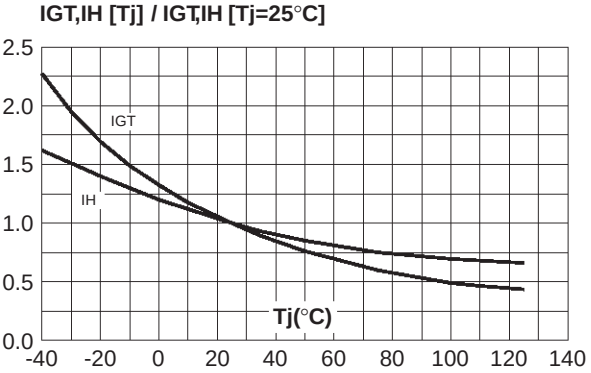


Fig. 6: Non repetitive surge peak on-state current versus number of cycles.

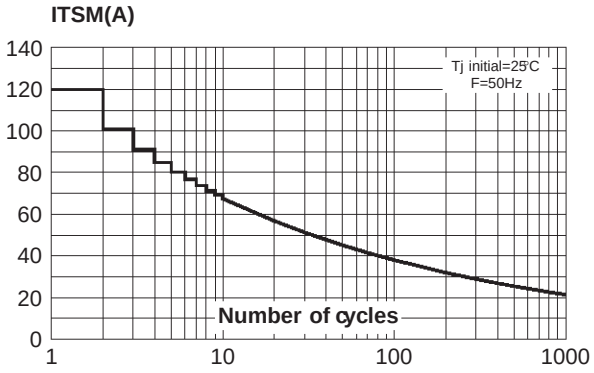


Fig. 7: Non repetitive surge peak on-state current for a sinusoidal pulse with width tp<10ms, and corresponding value of I^2t.

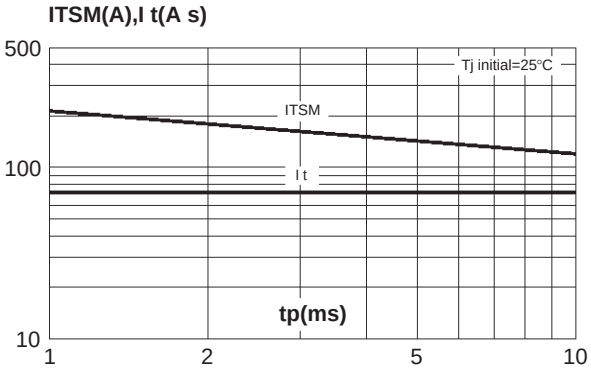
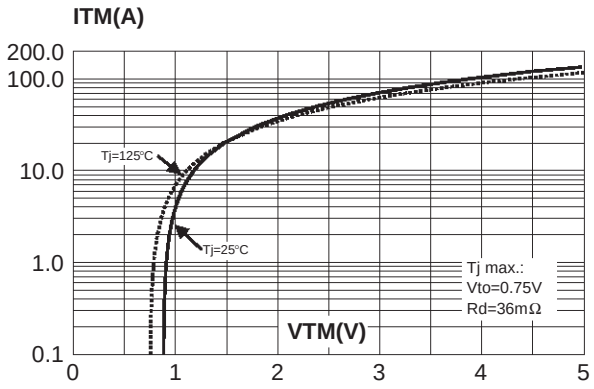
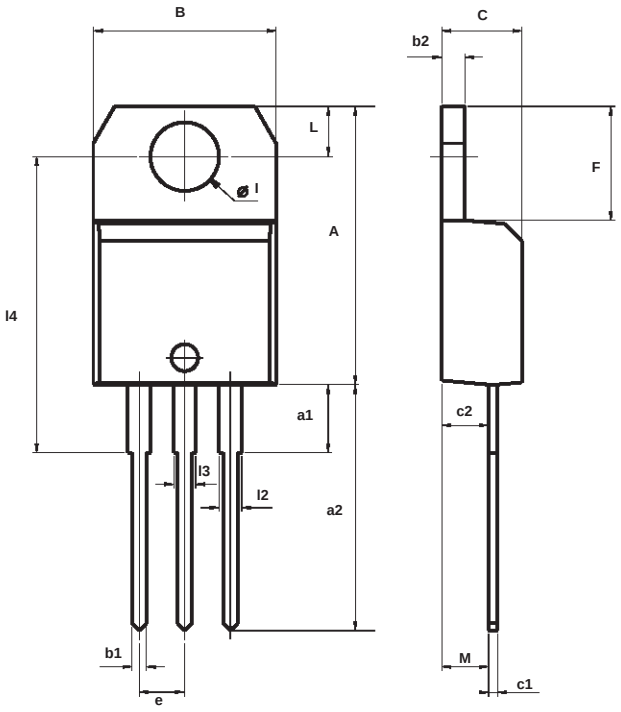


Fig. 8: On-state characteristics (maximum values).



PACKAGE MECHANICAL DATA

TO-220AB (Plastic)



REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1	3.50		4.20	0.137		0.165
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
I	3.75		3.85	0.147		0.151
l4		16.40			0.646	
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	

Marking	Package	Weight	Base qty	Delivery mode
Type number	TO-220AB	2.3 g.	250 units	Plastic bag

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