TYN1212

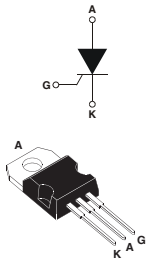
12 A SCR

Features

- On-state rms current 12 A
- Gate trigger current <15 mA
- Repetitive peak voltage 1200 V

Description

The TYN1212 is suitable for state relays and high power motor control.



TO-220AB
TYN1212

Table 1. Device summary

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	1200	V
I_{GT} (min. / max)	<15	mA

1 Characteristics

Table 2. Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
$I_{T(RMS)}$	On-state rms current (180 °C conduction angle)		T_c = 80 °C	12	A
I_{TSM}	Non repetitive surge peak on-state current	t_p = 10 ms	T_j = 25 °C	120	A
I^2t	I^2t Value for fusing		t_p = 10 ms	72	A^2s
dI/dt	Critical rate of rise of on-state current			100	A/µs
V_{DRM}/ V_{RRM}	Repetitive peak off-state voltage			1200	V
T_{stg} T_j	Storage junction temperature range Operating junction temperature range			- 40 to + 125 - 40 to + 125	°C

Table 3. Electrical characteristics (T_j = 25 °C, unless otherwise specified)

Symbol	Test conditions			Value	Unit
I_{GT}	V_D = 12 V, R_L = 33 Ω pulse duration >20 µs	T_j = 25 °C	MAX.	15	mA
V_{GT}	V_D = 12 V, R_L = 33 Ω pulse duration >20 µs	T_j = 25 °C	MAX.	1.5	V
V_{GD}	V_D = V_{DRM}, R_L = 3.3 kΩ pulse duration >20	T_j = 125 °C	MIN.	0.2	V
I_H	I_T = 100 mA Gate open	T_j = 25 °C	MAX.	30	mA
dV/dt	Linear slope V_D = 67% V_{DRM} Gate open	T_j =125 °C	MIN.	200	V/µs
V_{TM}	I_{TM} = 24 A t_p = 10 ms	T_j = 25 °C	MAX.	1.6	V
I_{DRM} I_{RRM}	V_{DRM} = V_{RRM} = 1200 V gate open	T_j = 25 °C	MAX.	10	µA
		T_j = 125 °C		3	mA
t_{gt}	Turn-on time I_G = 40 mA, dI_G/dt = 0.45 A/µs, I_T = 24 A V_{DRM}	T_j = 25 °C	TYP.	2	µs
t_q	Circuit commutated turn-off time I_T = 10 A, V_R = 25 V, dI_R/dt = 30 A/µs dV/dt = 50 V/µs	T_j = 125 °C	TYP.	50	µs

Table 4. Thermal resistance

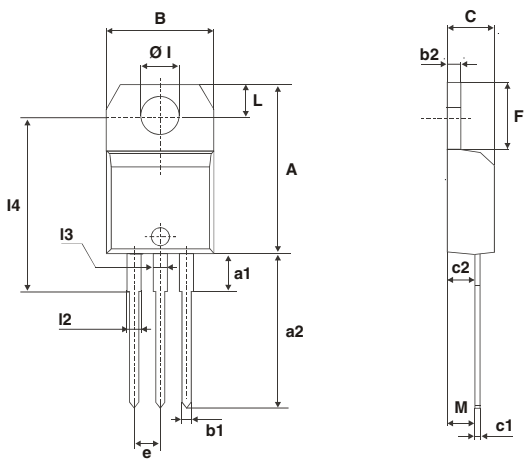
Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction to case (DC)	3.8	°C/W

2 Package information

- Epoxy meets UL94, V0
- Recommended torque value: 0.4 to 0.6 N·m
- Lead-free package

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK® packages, depending on their level of environmental compliance. ECOPACK® specifications, grade definitions and product status are available at: www.st.com. ECOPACK® is an ST trademark.

Table 5. TO-220AB dimensions



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	

3 Ordering information

Table 6. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
TYN1212RG	TYN1212	TO-220AB	2.3 g	50	Tube

4 Revision history

Table 7. Document revision history

Date	Revision	Changes
25-Nov-2011	1	First issue.

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