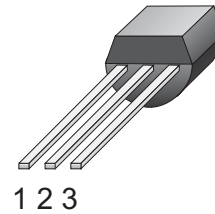


Simplified outline
TO-92

Description

Glass passivated, sensitive gate thyristors in a plastic envelope, intended for use in general purpose switching and phase control applications. These devices are intended to be interfaced directly to microcontrollers, logic integrated circuits and other low power gate trigger circuits.

Features

- Blocking voltage to 600 V
- On-state RMS current to 4 A
- Ultra low gate trigger current

Symbol

Applications

- Motor control
- Industrial and domestic lighting
- Heating
- Static switching

Pin	Description
1	cathode
2	anode
3	gate
TAB	anode

SYMBOL	PARAMETER	Value	Unit
V_{DRM}	Repetitive peak off-state voltages	600	V
$I_{T(RMS)}$	RMS on-state current (full sine wave)	4	A
I_{TSM}	Non-repetitive peak on-state current (full cycle, T_j initial=25°C)	25	A

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
$R_{\theta JC}$	Thermal resistance, Junction to Case		-	-	3.0	°C/W
$R_{\theta JA}$	Thermal resistance, Junction to Ambient		-	-	75	°C/W

Limiting values in accordance with the Maximum system(IEC 134)

SYMBOL	PARAMETER	CONDITIONS	MIN	MAX	UNIT	
V_{DRM}	Repetitive peak off-state Voltages	$T_j = -40$ to 110°C , sine wave 50 to 60 Hz, gate open	-	600	V	
$I_{T(RMS)}$	RMS on-state current	180° conduction angles $TC=93^\circ\text{C}$	-	4	A	
$I_{T(AV)}$	Average On-state current	180° conduction angles $TC=93^\circ\text{C}$	-	2.55	A	
I^2t	Circuit Fusing considerations	$t=8.3\text{ms}$	-	2.6	A^2S	
I_{DRM} I_{RRM}	Peak repetitive forward or reverse blocking current	$V_{AK}=\text{Rated } V_{DRM} \text{ or } V_{RRM};$ $R_{GK}=1000 \text{ Ohms}$	$T_j=25^\circ\text{C}$	-	10	μA
			$T_j=110^\circ\text{C}$	-	200	μA
				-	-	
				-	-	
I_{GM}	Forward peak gate current	$T_c=93^\circ\text{C}$, Pulse Width $\leq 1.0 \mu\text{s}$	-	0.2	A	
V_{RGM}	Peak Reverse gate voltage	$T_c=93^\circ\text{C}$, Pulse Width $\leq 1.0 \mu\text{s}$	-	6	V	
P_{GM}	Peak gate power	$T_c=93^\circ\text{C}$, Pulse Width $\leq 1.0 \mu\text{s}$	-	0.5	W	
$P_{G(AV)}$	Average gate power	$T_c=93^\circ\text{C}$, $t=8.3\text{ms}$	-	0.1	W	
T_{stg}	Storage temperature		-40	150	$^\circ\text{C}$	
T_j	Operating junction Temperature range		-40	110	$^\circ\text{C}$	

 $T_j = 25^\circ\text{C}$ unless otherwise stated

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Static characteristics						
I_{GT}	Gate trigger current	$V_{AK}=7.0\text{Vdc}$, $R_L=100 \text{ Ohms}$ $TC=-40^\circ\text{C}$	-	-	200 500	μA
V_{TM}	Peak Forward on-state voltage	$I_{TM}=4\text{A}$ Peak	-	-	2.0	V
I_H	Holding current	$V_{AK}=7.0\text{Vdc}$, Initiating Current=20mA gate open	-	-	5.0	mA
V_{GD}	Non-trigger voltage	$V_{AK}=12\text{Vdc}$, $R_L=100 \text{ Ohms}$, $T_j=110^\circ\text{C}$	0.2	-	-	V
V_{GT}	Gate trigger voltage	$V_{AK}=7.0\text{Vdc}$, $R_L=100 \text{ Ohms}$	-	-	1	V

Dynamic Characteristics

D_v/dt	Critical rate of rise of Off-state voltage	$T_j=110^\circ\text{C}$	-	10	-	$\text{V}/\mu\text{s}$
di/dt	Critical Rate-of-Rise of Off State Current	$I_{pk}=20\text{A}$; $PW=10 \mu\text{sec}$; $di/dt=1\text{A}/\mu\text{sec}$, $I_{gt}=20\text{mA}$	-	-	50	$\text{A}/\mu\text{s}$

Description

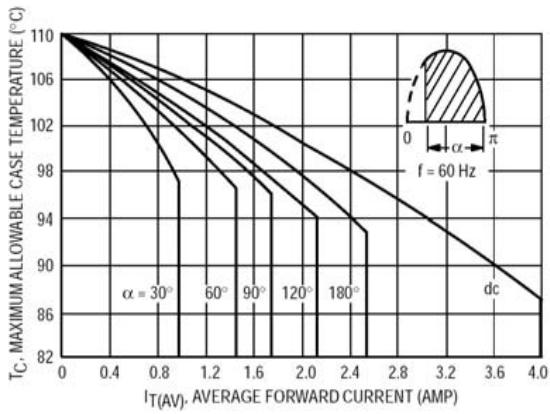


Figure 1. Maximum Case Temperature

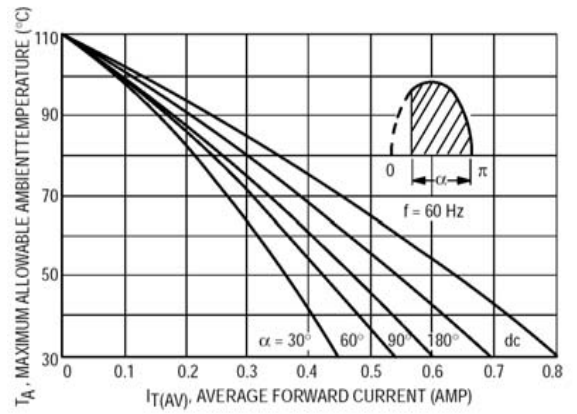
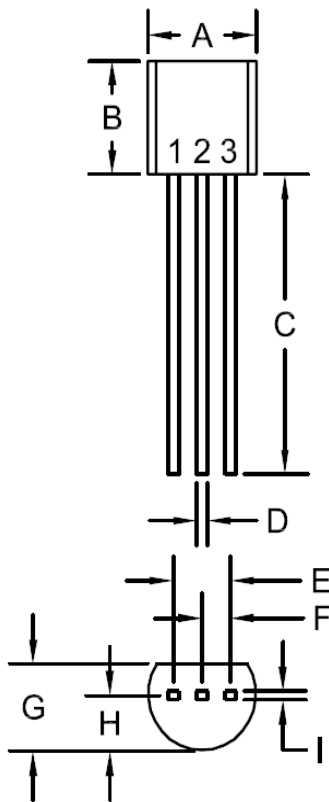


Figure 2. Maximum Ambient Temperature

Mechanical Data

Dimensions in mm

Net Mass:0.2 g

TO-92


SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	