

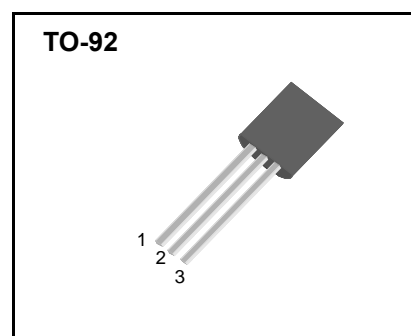
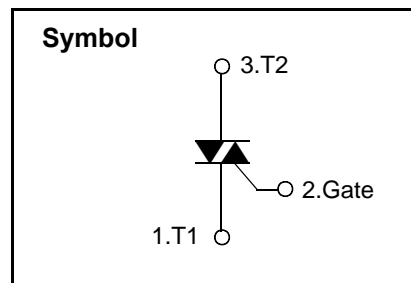
## Bi-Directional Triode Thyristor

### Features

- ◆ Repetitive Peak Off-State Voltage : 600/800V
- ◆ R.M.S On-State Current (  $I_{T(RMS)} = 1\text{ A}$  )
- ◆ High Commutation  $dv/dt$

### General Description

This device is suitable for low power AC switching application, phase control application such as fan speed and temperature modulation control, lighting control and static switching relay.



### Absolute Maximum Ratings ( $T_J = 25^\circ\text{C}$ unless otherwise specified )

Symbol	Parameter	Condition	Ratings	Units
$V_{DRM}$	Repetitive Peak Off-State Voltage		600   800	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 58^\circ\text{C}$	1.0	A
$I_{TSM}$	Surge On-State Current	One Cycle, 50Hz/60Hz, Peak, Non-Repetitive	9.1/10	A
$I_t^2$	$I_t^2$		0.41	$\text{A}^2\text{s}$
$P_{GM}$	Peak Gate Power Dissipation		1.0	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.1	W
$I_{GM}$	Peak Gate Current		0.5	A
$V_{GM}$	Peak Gate Voltage		6.0	V
$T_J$	Operating Junction Temperature		- 40 ~ 125	$^\circ\text{C}$
$T_{STG}$	Storage Temperature		- 40 ~ 150	$^\circ\text{C}$
	Mass		0.2	g

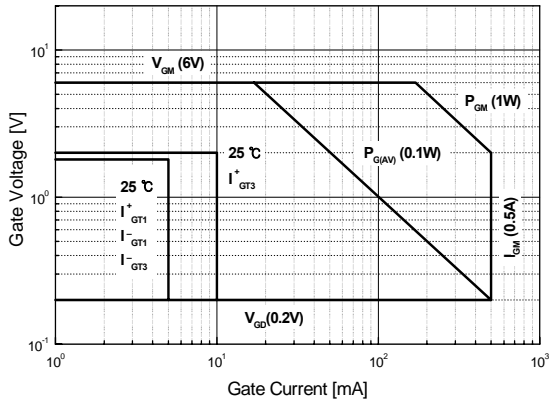
# STN1A60/80

## Electrical Characteristics

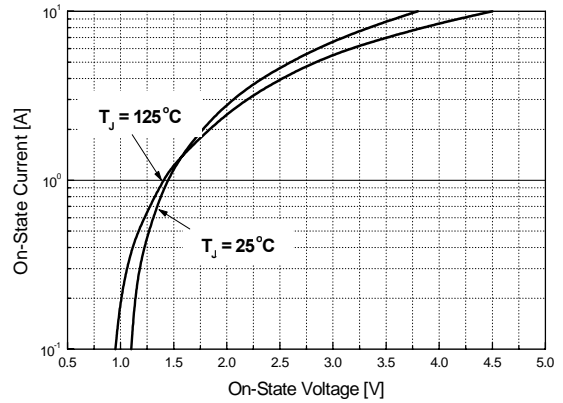
Symbol	Items		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
$I_{DRM}$	Repetitive Peak Off-State Current		$V_D = V_{DRM}$ , Single Phase, Half Wave $T_J = 125\text{ }^\circ\text{C}$	-	-	0.5	mA
$V_{TM}$	Peak On-State Voltage		$I_T = 1.5\text{ A}$ , Inst. Measurement	-	-	1.6	V
$I_{GT1}^+$	I	Gate Trigger Current	$V_D = 6\text{ V}$ , $R_L = 10\text{ }\Omega$	-	-	5	mA
$I_{GT1}^-$	II			-	-	5	
$I_{GT3}^-$	III			-	-	5	
$I_{GT3}^+$	IV			-	7	12	
$V_{GT1}^+$	I	Gate Trigger Voltage	$V_D = 6\text{ V}$ , $R_L = 10\text{ }\Omega$	-	-	1.8	V
$V_{GT1}$	II			-	-	1.8	
$V_{GT3}$	III			-	-	1.8	
$V_{GT3}^+$	IV			-	-	2.0	
$V_{GD}$	Non-Trigger Gate Voltage		$T_J = 125\text{ }^\circ\text{C}$ , $V_D = 1/2 V_{DRM}$	0.2	-	-	V
$(dv/dt)_c$	Critical Rate of Rise Off-State Voltage at Commutation		$T_J = 125\text{ }^\circ\text{C}$ , $[di/dt]_c = -0.5\text{ A/ms}$ , $V_D = 2/3 V_{DRM}$	2.0	-	-	V/ $\mu\text{s}$
$I_H$	Holding Current			-	4.0	-	mA
$R_{th(j-c)}$	Thermal Resistance		Junction to case	-	-	50	$^\circ\text{C/W}$
$R_{th(j-a)}$	Thermal Resistance		Junction to Ambient	-	-	120	$^\circ\text{C/W}$



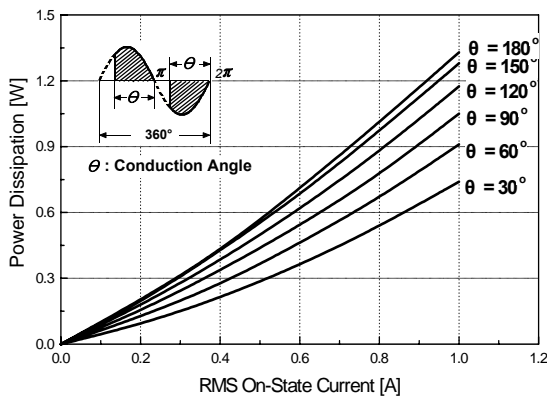
**Fig 1. Gate Characteristics**



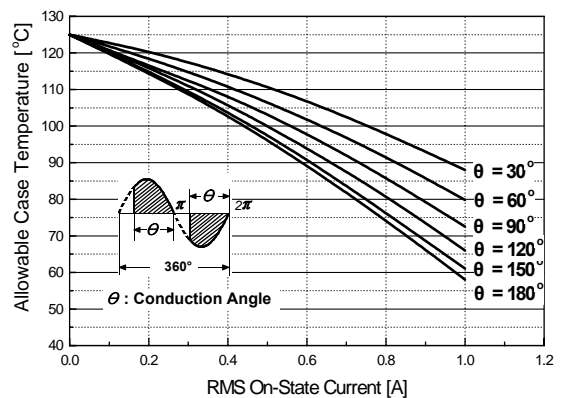
**Fig 2. On-State Voltage**



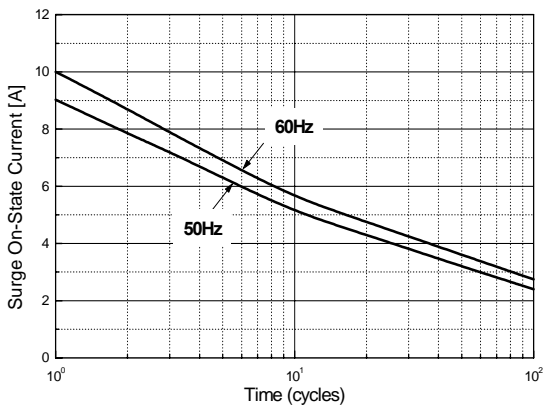
**Fig 3. On State Current vs. Maximum Power Dissipation**



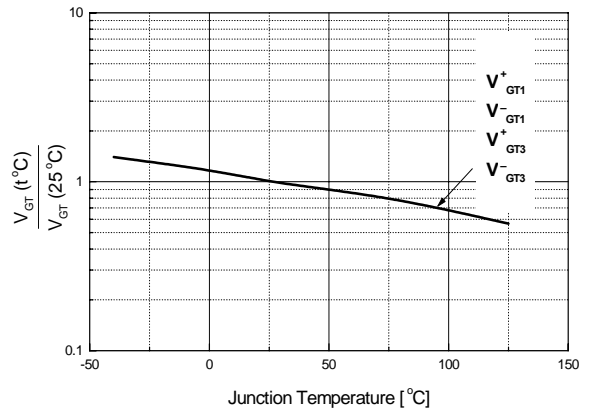
**Fig 4. On State Current vs. Allowable Case Temperature**



**Fig 5. Surge On-State Current Rating ( Non-Repetitive )**

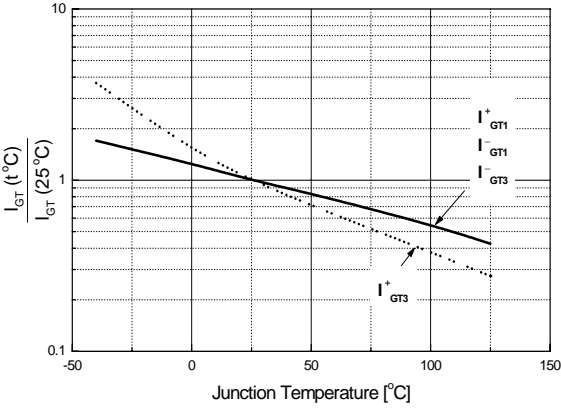


**Fig 6. Gate Trigger Voltage vs. Junction Temperature**

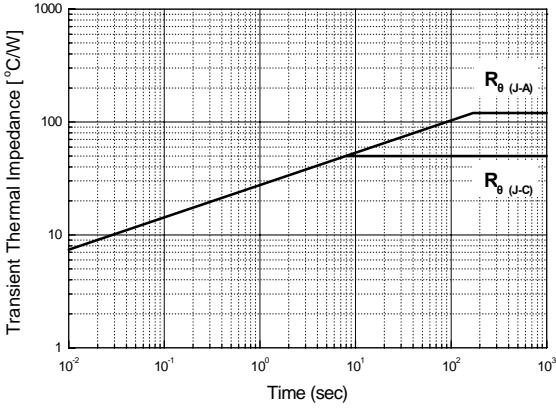


# STN1A60/80

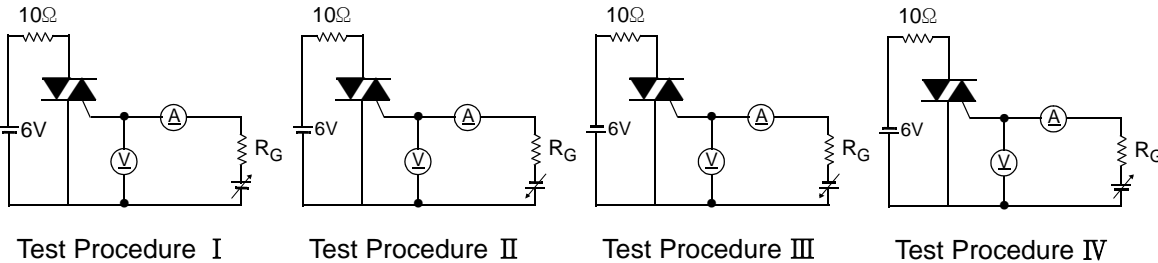
**Fig 7. Gate Trigger Current vs. Junction Temperature**



**Fig 8. Transient Thermal Impedance**



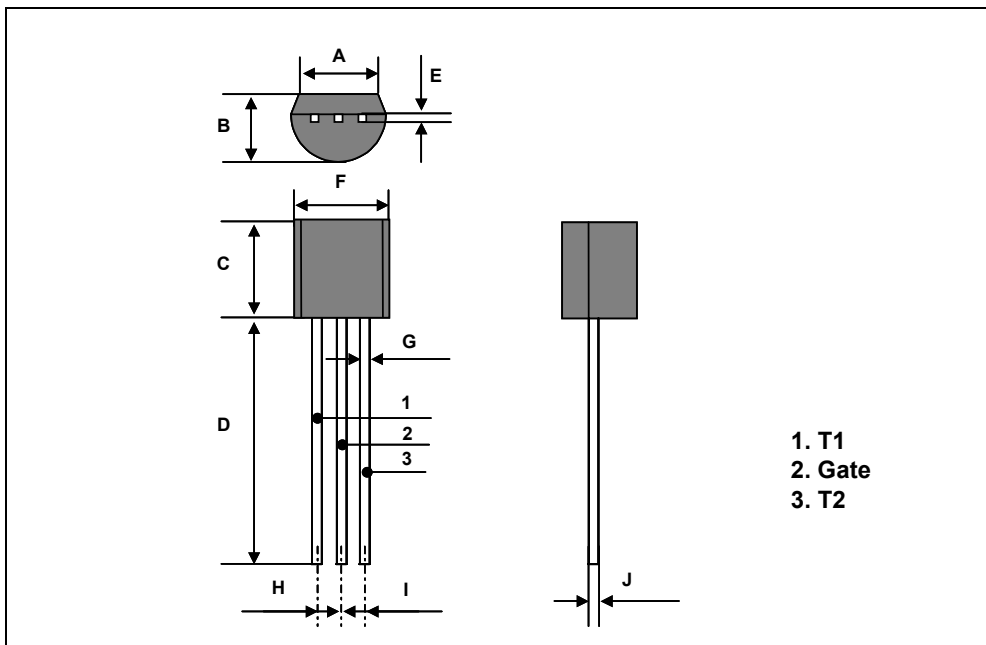
**Fig 9. Gate Trigger Characteristics Test Circuit**



# STN1A60/80

## TO-92 Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		4.2			0.165	
B			3.7			0.146
C	4.43		4.83	0.174		0.190
D	14.07		14.87	0.554		0.585
E			0.4			0.016
F	4.43		4.83	0.174		0.190
G			0.45			0.017
H		2.54			0.100	
I		2.54			0.100	
J	0.33		0.48	0.013		0.019



# STN1A60/80

## TO-92 Package Dimension, Forming

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A		4.2			0.165	
B			3.7			0.146
C	4.43		4.83	0.174		0.190
D	14.07		14.87	0.554		0.585
E			0.4			0.016
F	4.43		4.83	0.174		0.190
G			0.45			0.017
H		2.54			0.100	
I		2.54			0.100	
J	0.33		0.48	0.013		0.019
K	4.5		5.5	0.177		0.216
L	7.8		8.2	0.295		0.323
M	1.8		2.2	0.070		0.086
N	1.3		1.7	0.051		0.067

