

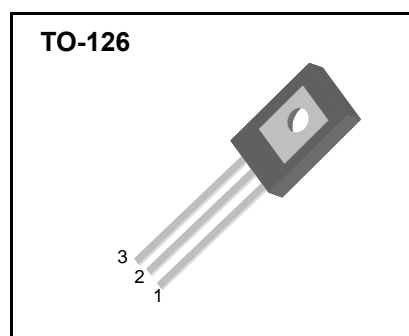
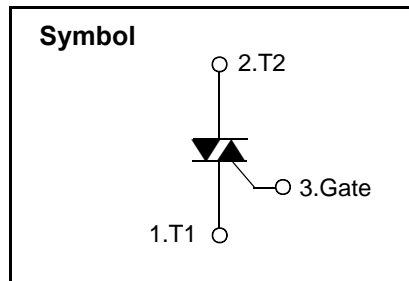
Bi-Directional Triode Thyristor

Features

- ◆ Repetitive Peak Off-State Voltage : 800V
- ◆ R.M.S On-State Current ($I_{T(RMS)}= 4 A$)
- ◆ High Commutation dv/dt

General Description

This device is new surface mounted package line up suitable for space limited application such as low power AC switching applications, such as fan speed, small light controllers and home appliance equipment.



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

Symbol	Parameter	Condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage	Sine wave, 50 to 60 Hz, Gate open	800	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 95^\circ\text{C}$, Full Sine wave	4.0	A
I_{TSM}	Surge On-State Current	One Cycle, 50Hz/60Hz, Peak, Non-Repetitive	30/33	A
I^2t	I^2t for Fusing	$t_p = 10\text{ms}$	4.5	A^2s
P_{GM}	Peak Gate Power Dissipation	$T_C = 95^\circ\text{C}$, Pulse width $\leq 1.0\mu\text{s}$	3	W
$P_{G(AV)}$	Average Gate Power Dissipation	Over any 20ms period	0.3	W
I_{GM}	Peak Gate Current	$t_p = 20\mu\text{s}$, $T_J=125^\circ\text{C}$	1.0	A
V_{GM}	Peak Gate Voltage	$t_p = 20\mu\text{s}$, $T_J=125^\circ\text{C}$	7.0	V
T_J	Operating Junction Temperature		- 40 ~ 125	$^\circ\text{C}$
T_{STG}	Storage Temperature		- 40 ~ 150	$^\circ\text{C}$
	Mass		0.26	g

STR4A80

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 $T_J = 125\text{ }^\circ\text{C}$	—	—	1.0	mA
V_{TM}	Peak On-State Voltage		$I_T = 5.5\text{A}$, Inst. Measurement	—	—	1.65	V
I_{GT1}^+	I	Gate Trigger Current	$V_D = 6\text{ V}$, $R_L = 10\ \Omega$	—	—	20	mA
I_{GT1}^-	II			—	—	20	
I_{GT3}^-	III			—	—	20	
V_{GT1}^+	I	Gate Trigger Voltage	$V_D = 6\text{ V}$, $R_L = 10\ \Omega$	—	—	1.5	V
V_{GT1}^-	II			—	—	1.5	
V_{GT3}^-	III			—	—	1.5	
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		$T_J = 125\text{ }^\circ\text{C}$, $[di/dt]_c = -2.0\text{ A/ms}$, $V_D = 2/3 V_{DRM}$	5.0	—	—	V/ μs
I_H	Holding Current			—	5.0	—	mA
$R_{th(j-c)}$	Thermal Impedance		Junction to case	—	—	3.5	$^\circ\text{C/W}$

※Notes :

1. Pulse Width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$



Fig 1. Gate Characteristics

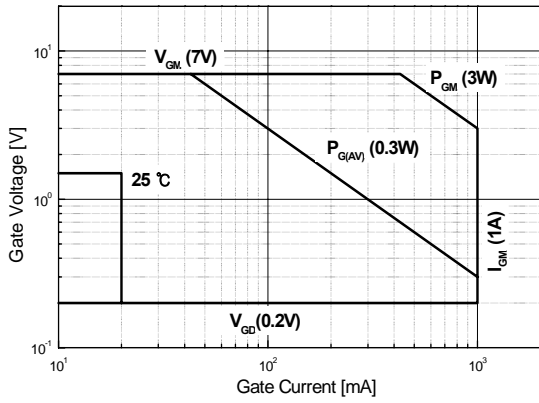


Fig 2. On-State Voltage

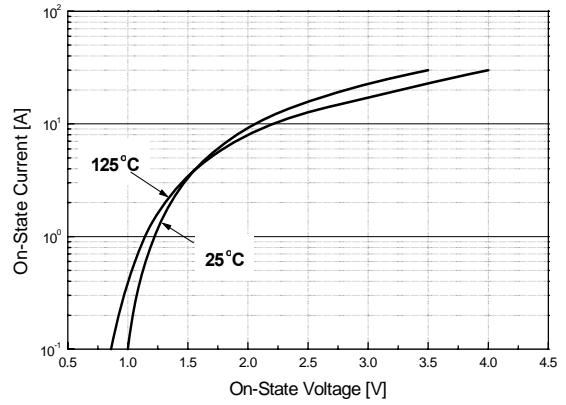


Fig 3. On State Current vs. Maximum Power Dissipation

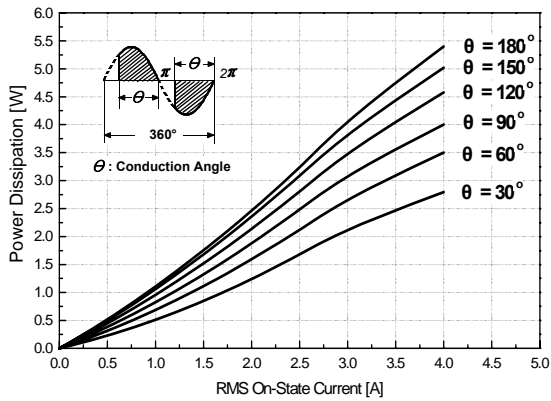


Fig 4. On State Current vs. Allowable Case Temperature

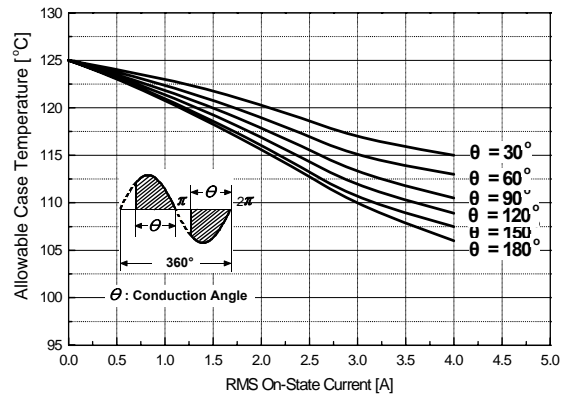


Fig 5. Surge On-State Current Rating (Non-Repetitive)

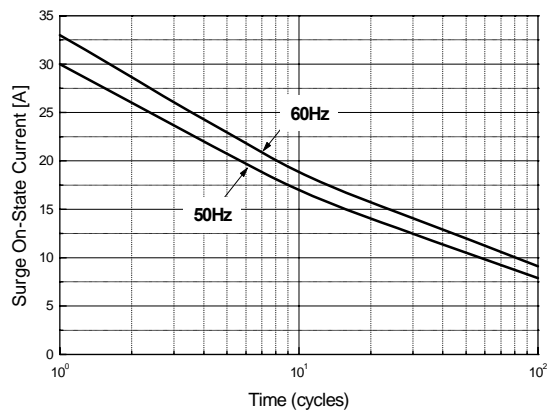
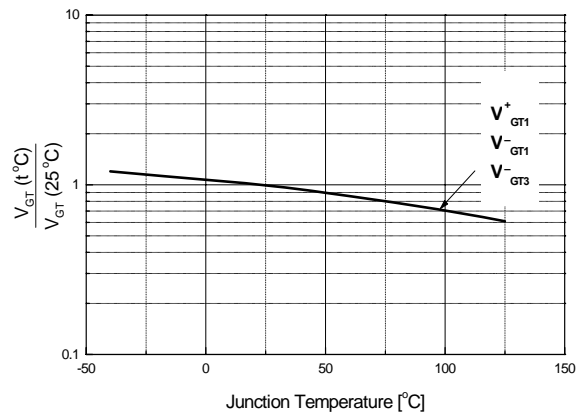


Fig 6. Gate Trigger Voltage vs. Junction Temperature



STR4A80

Fig 7. Gate Trigger Current vs. Junction Temperature

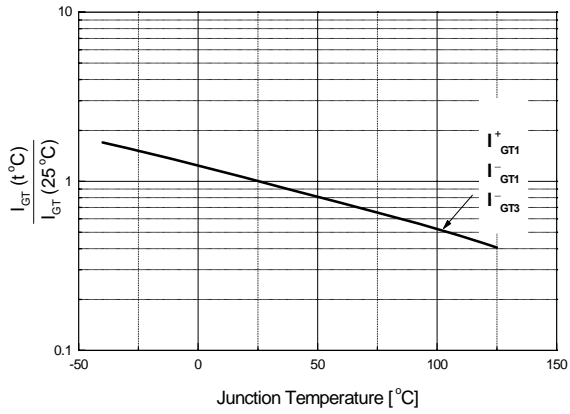


Fig 8. Transient Thermal Impedance

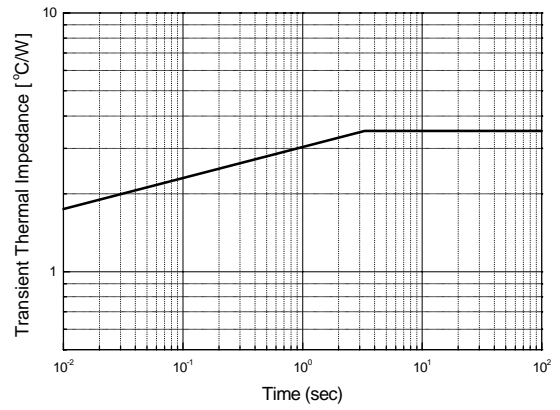
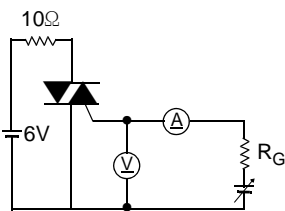
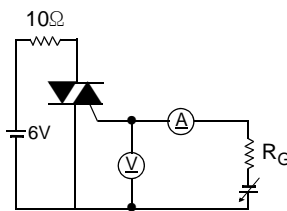


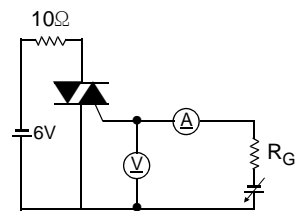
Fig 9. Gate Trigger Characteristics Test Circuit



Test Procedure I



Test Procedure II

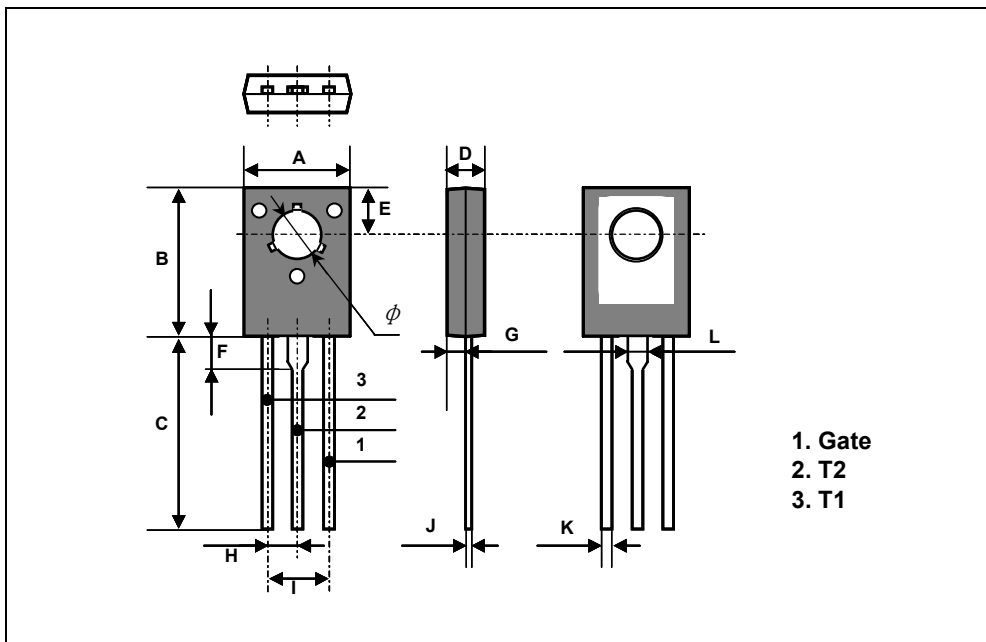


Test Procedure III



TO-126 Package Dimension

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.5		7.9	0.295		0.311
B	10.8		11.2	0.425		0.441
C	14.2		14.7	0.559		0.579
D	2.7		2.9	0.106		0.114
E		3.8			0.150	
F		2.5			0.098	
G	1.2		1.5	0.047		0.059
H		2.3			0.091	
I		4.6			0.181	
J	0.48		0.62	0.019		0.024
K	0.7		0.86	0.028		0.034
L		1.4			0.055	
ϕ		3.2			0.126	



TO-126 Package Dimension, Forming

Dim.	mm			Inch		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	7.5		7.9	0.295		0.311
B	10.8		11.2	0.425		0.441
C	14.2		14.7	0.559		0.579
D	2.7		2.9	0.106		0.114
E		3.8			0.150	
F		2.5			0.098	
G	1.2		1.5	0.047		0.059
H		2.3			0.091	
I		4.6			0.181	
J	0.48		0.62	0.019		0.024
K	0.7		0.86	0.028		0.034
L		1.4			0.055	
M		5.0			0.197	
ϕ		3.2			0.126	

