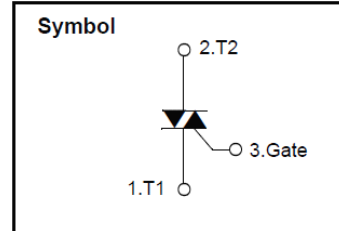


## *Sensitive Gate Triac*

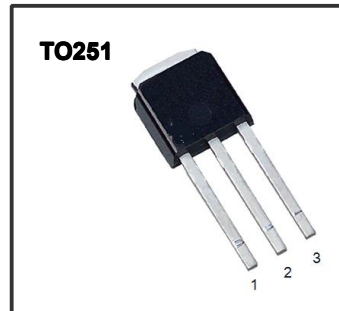
### Features

- ◆ Repetitive Peak Off-State Voltage : 600V
- ◆ R.M.S On-State Current (  $I_T(RMS)$  ) = 4 A )
- ◆ Low On-State Voltage (1.6V(Typ.) @  $I_{TM}$ )
- ◆ High Commutation  $dv/dt$
- ◆ Sensitive Gate Triggering 4 Mode



### General Description

Sensitive gate triggering Triac is suitable for direct coupling to TTL, HTL, CMOS and application such as various logic functions, 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	Param	Condti	Ratings	Units
$V_{DRM}$	Repetitive Peak Off-State Voltage		600	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_C = 109^\circ\text{C}$	4.0	A
$I_{TSM}$	Surge On-State Current	One Cycle, 50Hz/60Hz, Peak, Non-Repetitive	30/33	A
$I^2t$	$I^2t$		4.5	$\text{A}^2\text{s}$
$P_{GM}$	Peak Gate Power Dissipation		1.5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.1	W
$I_{GM}$	Peak Gate Current		1.0	A
$V_{GM}$	Peak Gate Voltage		7.0	V
$T_J$	Operating Junction Temperature		- 40 ~ 125	$^\circ\text{C}$
$T_{STG}$	Storage Temperature		- 40 ~ 150	$^\circ\text{C}$

### Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta Jc}$	Thermal Resistance Junction to Case(DC)	2.6	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient(DC)	100	$^\circ\text{C}/\text{W}$

# STU4A60S

## Electrical Characteristics (T<sub>c</sub>=25°C unless otherwise noted)

Symbol	Items		Conditions	Ratin			Unit
				Min.	Typ.	Max.	
I <sub>DRM</sub>	Repetitive Peak Off-State Current		V= V <sub>DRM</sub> , Single Phase, Half Wave T <sub>J</sub> = 125 °C	—	—	1.0	mA
V <sub>TM</sub>	Peak On-State Voltage		I <sub>T</sub> = 6 A, Inst. Measurement	—	—	1.6	V
I <sup>+</sup> <sub>GT1</sub>	I	Gate Trigger Current	V <sub>D</sub> = 6 V, R <sub>L</sub> =10 Ω	—	—	5	mA
I <sup>-</sup>	II			—	—	5	
I <sup>-</sup>	III			—	—	5	
I <sup>+</sup> <sub>GT3</sub>	IV			—	8	12	
V <sup>+</sup> <sub>GT1</sub>	I	Gate Trigger Voltage	V <sub>D</sub> = 6 V, R <sub>L</sub> =10 Ω	—	—	1.4	V
V <sub>GT1</sub>	II			—	—	1.4	
V <sub>GT3</sub>	III			—	—	1.4	
V <sup>+</sup> <sub>GT3</sub>	IV			—	1.6	2.0	
V <sub>GD</sub>	Non-Trigger Gate Voltage		T <sub>J</sub> = 125 °C, V <sub>D</sub> = 1/2 V <sub>DRM</sub>	0.	—	—	V
(dv/dt) <sub>c</sub>	Critical Rate of Rise Off-State Voltage at Commutation		T <sub>J</sub> = 125 °C, [di/dt] <sub>c</sub> = -2.0 A/ms, V <sub>D</sub> =2/3 V <sub>DRM</sub>	5	—	—	V/μs
I <sub>H</sub>	Holding Current			—	—	10	mA

Fig 1. Gate Characteristics

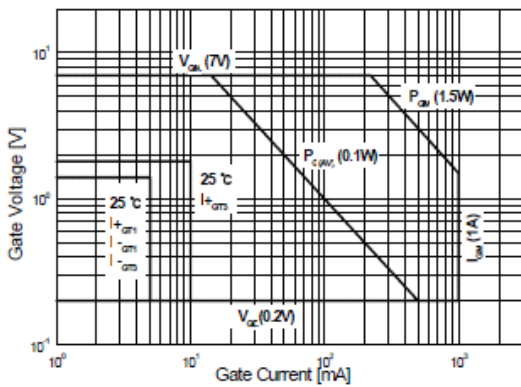


Fig 2. On-State Voltage

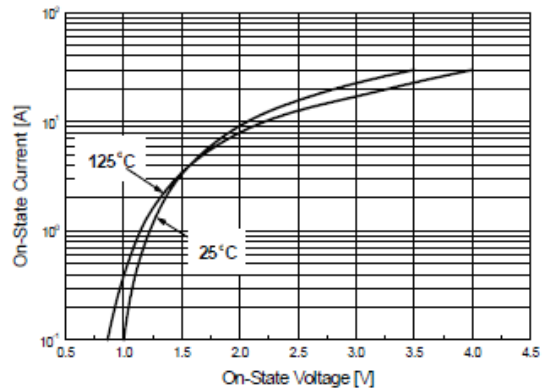


Fig 3. On State Current vs. Maximum Power Dissipation

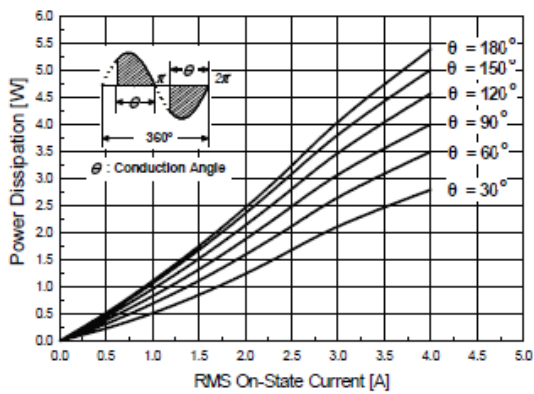


Fig 4. On State Current vs. Allowable Case Temperature

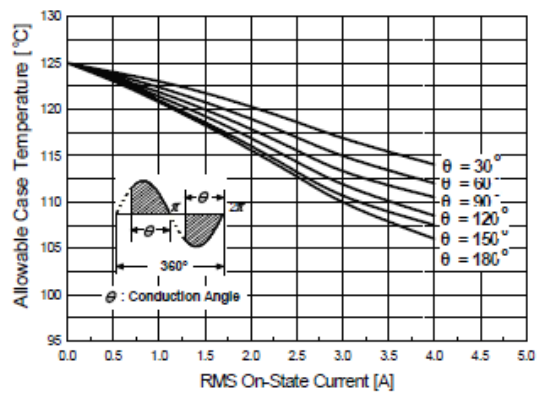


Fig 5. Surge On-State Current Rating (Non-Repetitive)

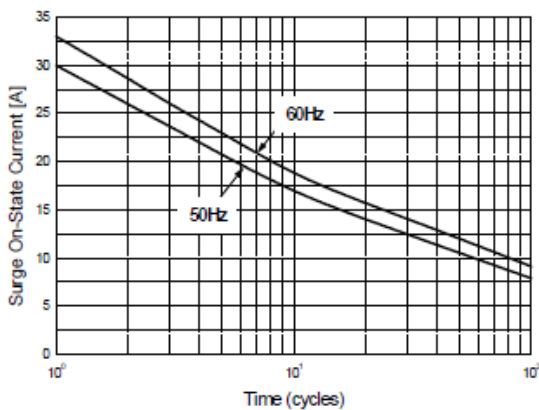
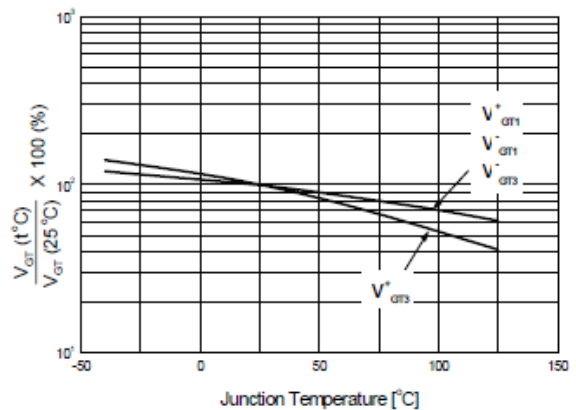
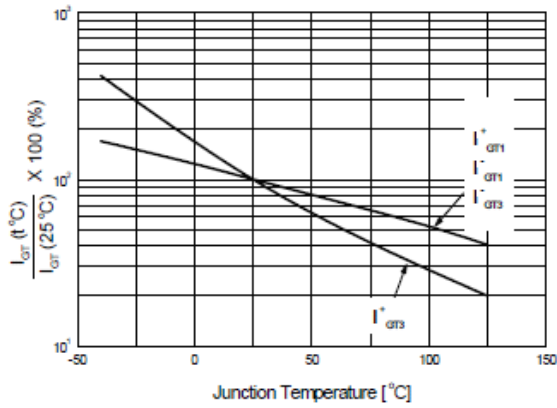


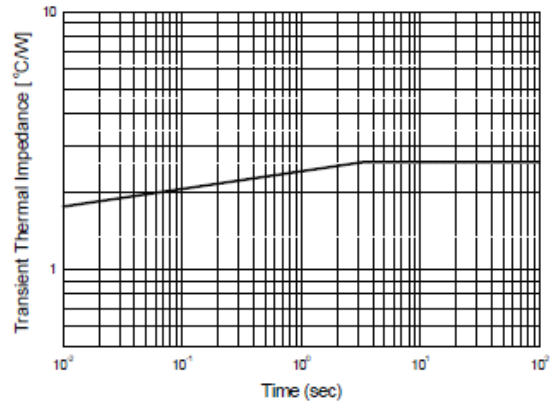
Fig 6. Gate Trigger Voltage vs. Junction Temperature



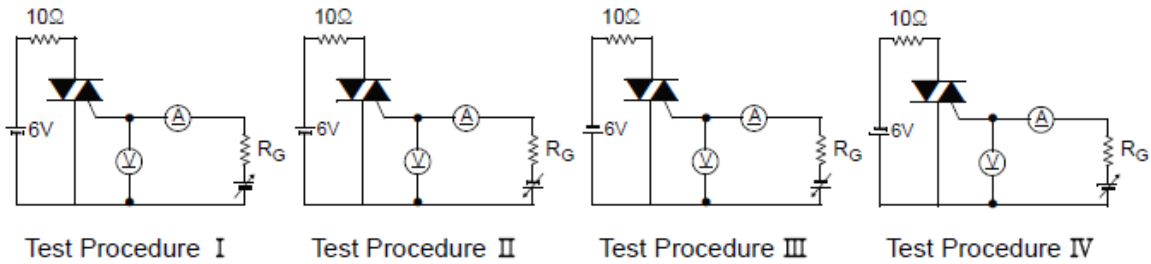
**Fig 7. Gate Trigger Current vs. Junction Temperature**



**Fig 8. Transient Thermal Impedance**



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



## TO-251 Package Dimension

Unit: mm

