

## HTx4-600S

### NON INSULATED TYPE SENSITIVE GATE TRIAC

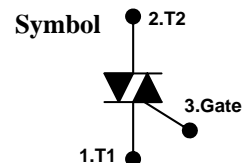
#### FEATURES

- Repetitive Peak Off-State Voltage: 600V
- R.M.S On-state Current ( $I_{T(RMS)}=4A$ )
- High Commutation  $dv/dt$
- Sensitive Gate Triggering 4 Mode

$$V_{DRM} = 600 V$$

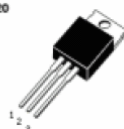
$$I_{T(RMS)} = 4.0A$$

$$I_{GT(MAX)} = 10mA$$



1.T1 2. T2 3. Gate

TO-220



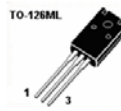
HTP4-600S

TO-126



HTC4-600S

TO-126ML



HTM4-600S

#### General Description

The device is sensitive gate TRIAC 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 $(T_a=25^{\circ}C)$

Symbol	Parameter	Value	Units
$V_{DRM}$	Repetitive Peak Off-State Voltage	600	V
$I_{T(RMS)}$	R.M.S On-State Current ( $T_a = 95^{\circ}C$ )	4	A
$I_{TSM}$	Surge On-State Current (One Cycle, 50/60Hz, Peak, Non Repetitive)	30/33	A
$V_{GM}$	Peak Gate Voltage	7	V
$I_{GM}$	Peak Gate Current	1	A
$P_{G(AV)}$	Average Gate Power Dissipation	0.1	W
$P_{GM}$	Peak Gate Power Dissipation	1.5	W
$T_{STG}$	Storage Temperature Range	-40 to +125	$^{\circ}C$
$T_j$	Operating Temperature	-40 to +125	$^{\circ}C$

**Electrical Characteristics** ( $T_a=25^\circ\text{C}$ )

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
I <sub>GT</sub>	Gate Trigger Current	V <sub>D</sub> =6V, R <sub>L</sub> =10Ω	1+, 1-, 3-		5	mA
			3+		10	mA
V <sub>GT</sub>	Gate Trigger Voltage	V <sub>D</sub> =6V, R <sub>L</sub> =10Ω	1+, 1-, 3-		1.4	V
			3+		1.8	V
V <sub>GD</sub>	Non Trigger Gate Voltage	T <sub>j</sub> =125°C, V <sub>D</sub> =1/2V <sub>DRM</sub>	0.2			V
(dv/dt) <sub>c</sub>	Critical Rate of Rise of Off-State Voltage at Communication	T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub> (di/dt) <sub>c</sub> =-0.5A/ms (TO-220)	5			V/μS
		T <sub>j</sub> =125°C, V <sub>D</sub> =2/3V <sub>DRM</sub> (di/dt) <sub>c</sub> =-0.2A/ms (TO-126/ML)	11			V/μS
I <sub>H</sub>	Holding Current				10	mA
I <sub>DRM</sub>	Repetitive Peak Off-State Current	V <sub>D</sub> =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> =6A, Inst, Measurement			1.6	V

**Thermal Characteristics**

Symbol	Parameter	Test Conditions	Case	Min	Typ	Max	Units
R <sub>TH(J-C)</sub>	Thermal Resistance	Junction to Case	TO-220			3	°C/W
			TO-126/ML			3.5	°C/W

Performance Curves

Fig 1. Gate Characteristics

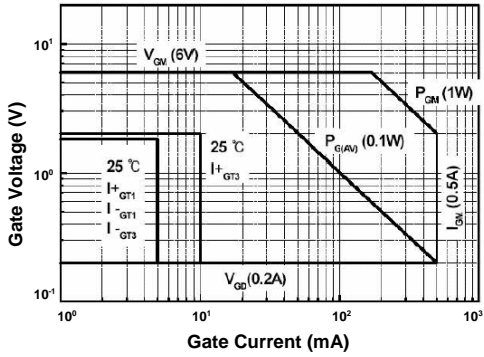


Fig 2. On-State Voltage

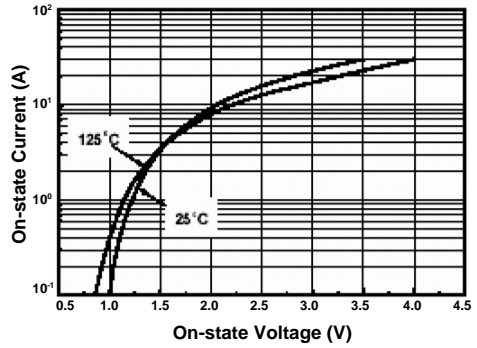


Fig 3. Gate Trigger Voltage vs. Junction Temperature

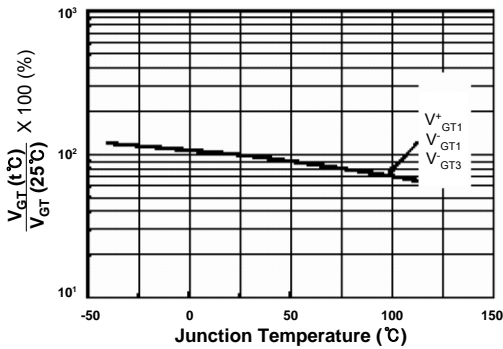


Fig 4. On State Current vs. Maximum Power Dissipation

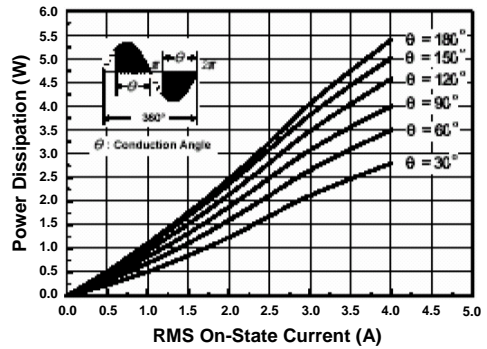


Fig 5. On State Current vs. Allowable Case Temperature

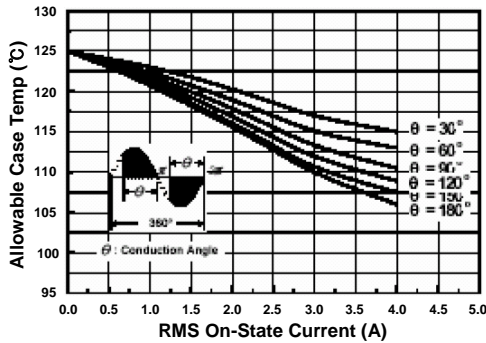
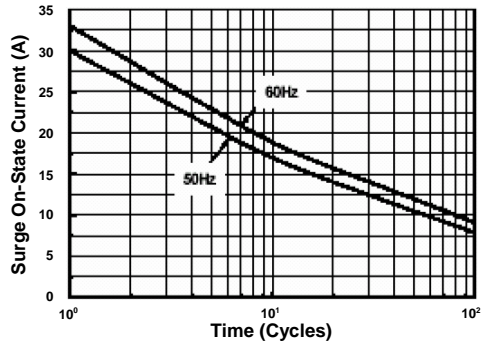
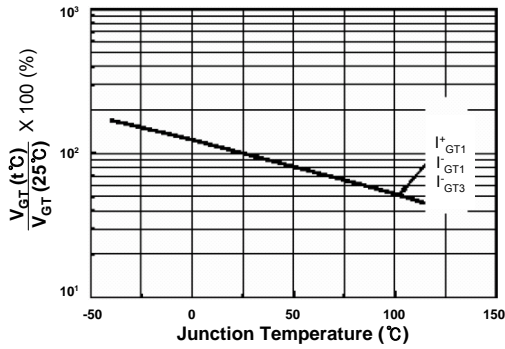


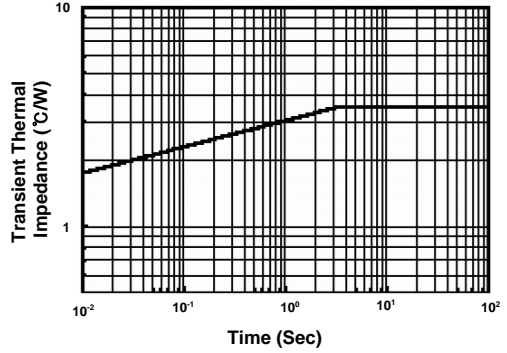
Fig 6. Surge On-State Current Rating (Non-Repetitive)



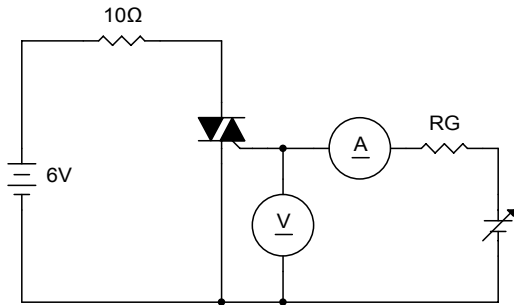
**Fig 7. Gate Trigger Current vs. Junction Temperature**



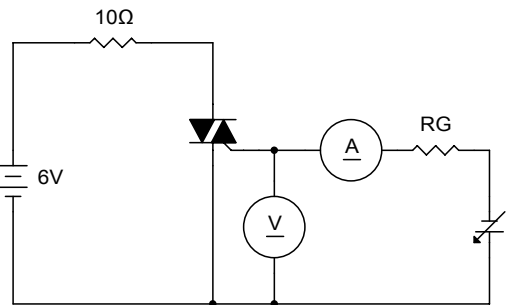
**Fig8. Transient Thermal Impedance**



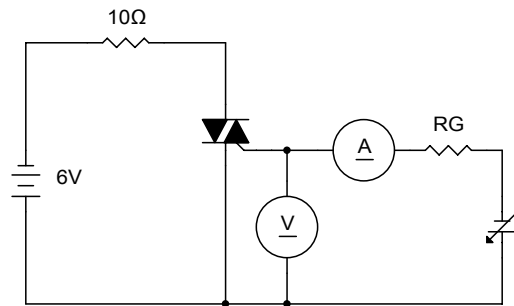
**Fig 7. Gate Trigger Characteristics Test Circuit**



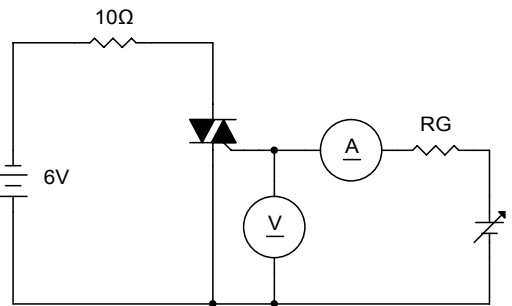
**Test Procedure I**



**Test Procedure II**



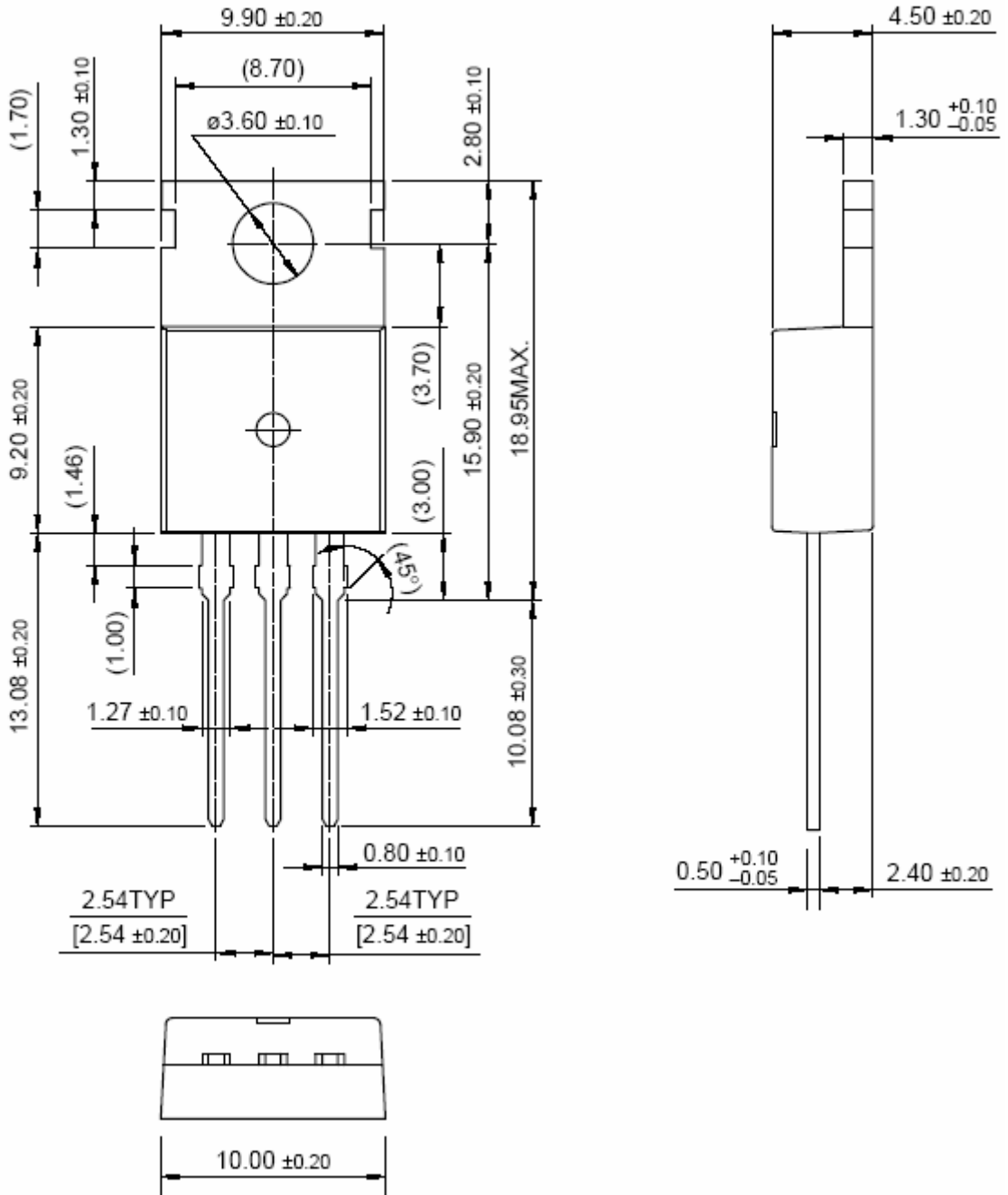
**Test Procedure III**



**Test Procedure IV**

Package Dimension

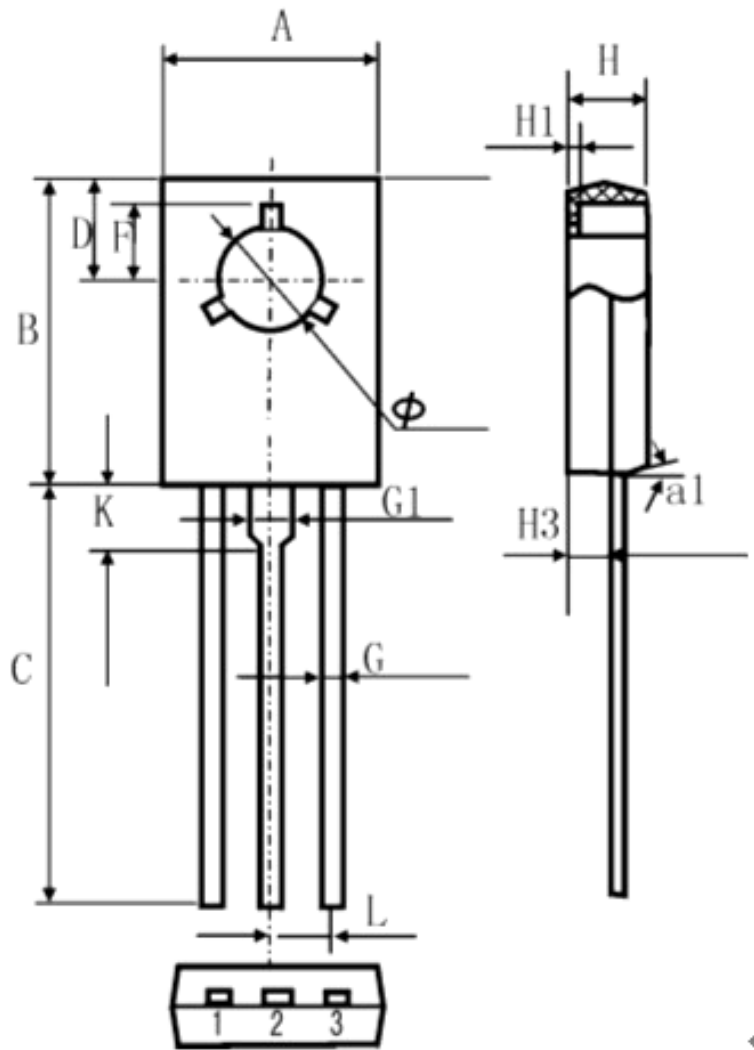
HTP4-600S  
(TO-220)



Package Dimension

HTC4-600S  
(TO-126)

DIM	Millimeters
A	8.5max
B	12.0max
C	13.0min
D	3.8±0.2
G	0.78±0.08
G1	1.2
H	2.8max
H3	1.27
K	2.5±0.2
L	2.3max
φ	3.20±0.2



Dimensions in Millimeters

## Package Dimension

HTM4-600S  
(TO-126ML)

corresponding symbol	measurement
A(mm)	$7.99 \pm 0.25$
B(mm)	$11.12 \pm 0.25$
C(mm)	$14.5 \pm 0.5$
E(mm)	$3.625 \pm 0.125$
F(mm)	$1.4 \pm 0.12$
G(mm)	$0.76 \pm 0.08$
G1(mm)	$1.3 \pm 0.12$
H(mm)	$3.57 \pm 0.13$
H3(mm)	$2.01 \pm 0.13$
I(mm)	$2.99 \pm 0.38$
K(mm)	$1.0 \pm 0.12$
L(mm)	2.3MAX
$\phi 1$ (mm)	$3.0 \pm 0.12$

