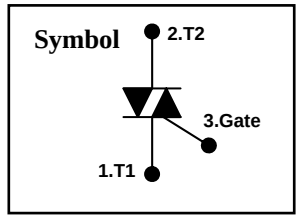
SemiHow
SEMICONDUCTOR TOTAL SOLUTION®

HTx4-600S
NON INSULATED TYPE SENSITIVE GATE TRIAC

V_{DRM} = 600 V
$I_{T(RMS)}$ = 4.0A
$I_{GT(MAX)}$ = 10mA



1.T1 2. T2 3. Gate

HTP4-600S HTC4-600S HTM4-600S

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

General Description

The devices 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 (Ta=25℃)

Symbol	Parameter	Value	Units
V_{DRM}	Repetitive Peak Off-State Voltage	600	V
$I_{T(RMS)}$	R.M.S On-State Current (Ta = 95℃)	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	℃
T_j	Operating Temperature	-40 to +125	℃

Electrical Characteristics (T_a=25℃)

Symbol	Parameter	Test Conditions		Min	Typ	Max	Units
I_{GT}	Gate Trigger Current	V_D=6V, R_L=10Ω	1+, 1-, 3-			5	mA
			3+			10	mA
V_{GT}	Gate Trigger Voltage	V_D=6V, R_L=10Ω	1+, 1-, 3-			1.4	V
			3+			1.8	V
V_{GD}	Non Trigger Gate Voltage	Tj=125℃, V_D=1/2V_{DRM}		0.2			V
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Communication	Tj=125℃, VD=2/3VDRM (di/dt)c=-0.5A/ms (TO-220)		5			V/uS
		Tj=125℃, VD=2/3VDRM (di/dt)c=-0.2A/ms (TO-126/ML)		11			V/uS
I_H	Holding Current					10	mA
I_{DRM}	Repetitive Peak Off-State Current	V_D=V_{DRM}, Single Phase, Half Wave, T_j=125℃				1.0	mA
V_{TM}	Peak On-State Voltage	IT=6A, Inst, Measurement				1.6	V

Thermal Characteristics

Symbol	Parameter	Test Conditions	Case	Min	Typ	Max	Units
$R_{TH(J-C)}$	Thermal Resistance	Junction to Case	TO-220			3	℃/W
			TO-126/ML			3.5	℃/W

Performance Curves

Fig 1. Gate Characteristics

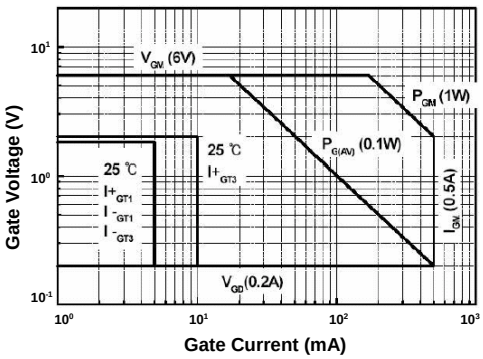


Fig 2.On-State Voltage

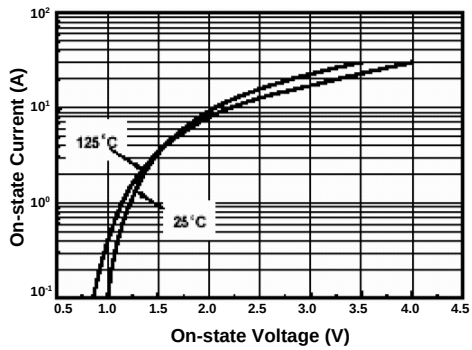


Fig 3. Gate Trigger Voltage vs. Junction Temperature

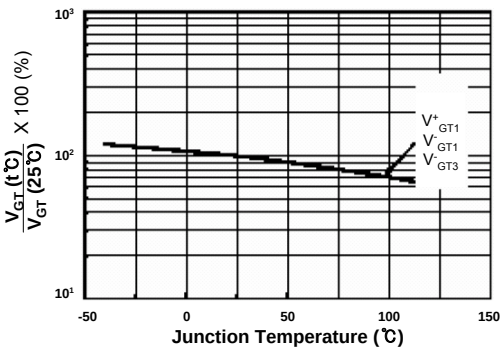


Fig 4. On State Current vs. Maximum Power Dissipation

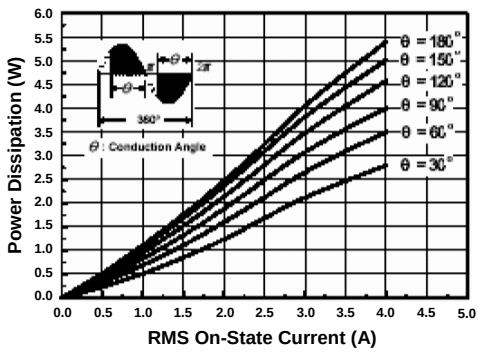


Fig 5. On State Current vs. Allowable Case Temperature

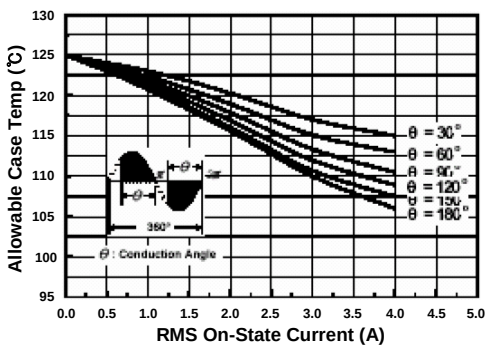


Fig 6. Surge On-State Current Rating (Non-Repetitive)

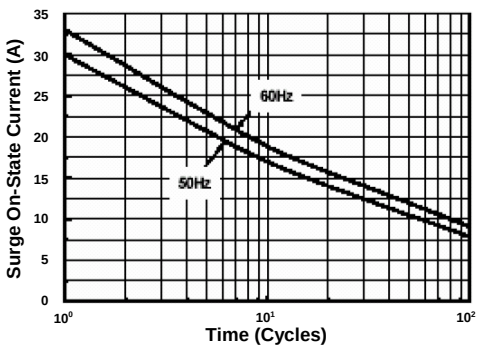


Fig 7. Gate Trigger Current vs. Junction Temperature

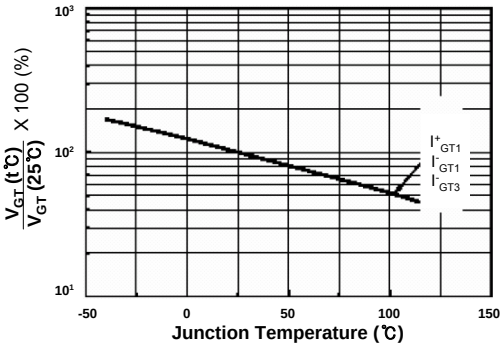


Fig8. Transient Thermal Impedance

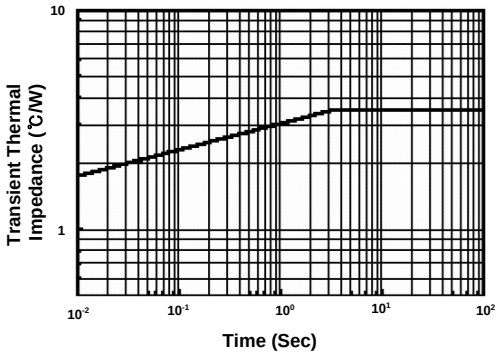
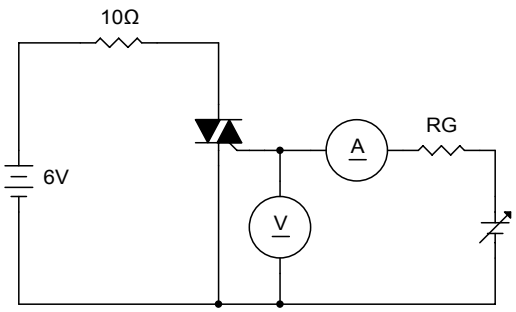
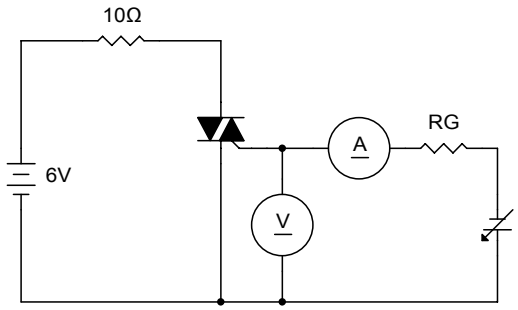


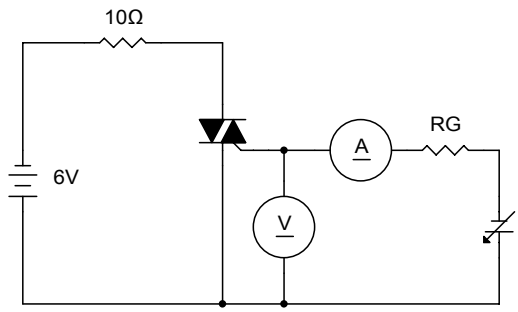
Fig 7. Gate Trigger Characteristics Test Circuit



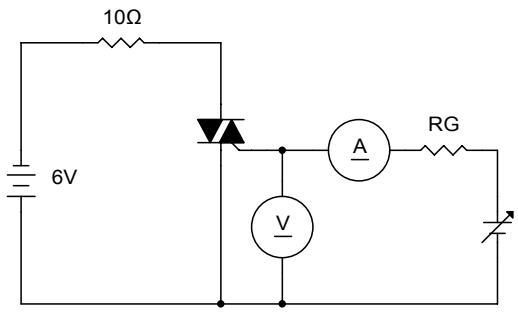
Test Procedure I



Test Procedure II



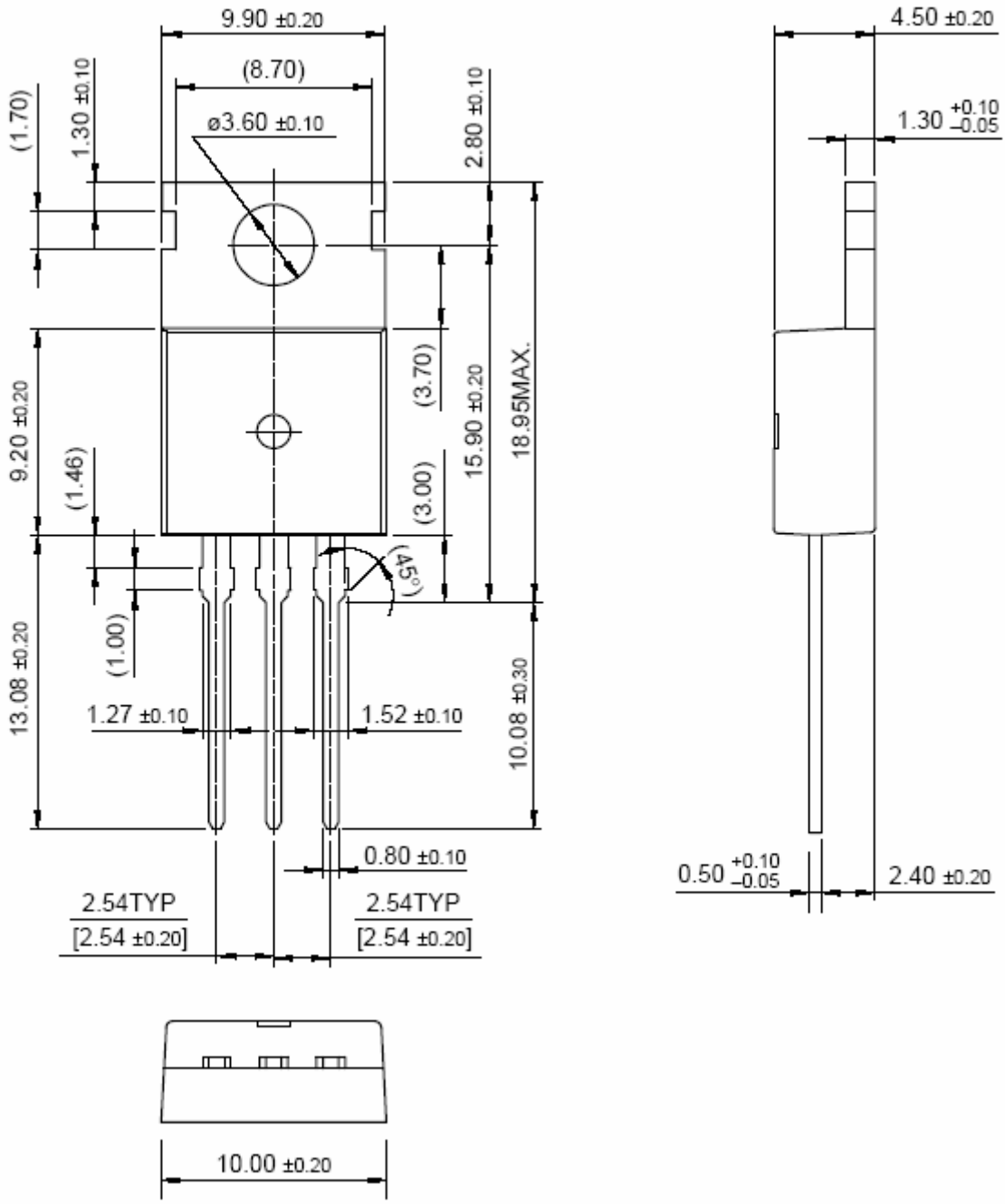
Test Procedure III



Test Procedure IV

Package Dimension

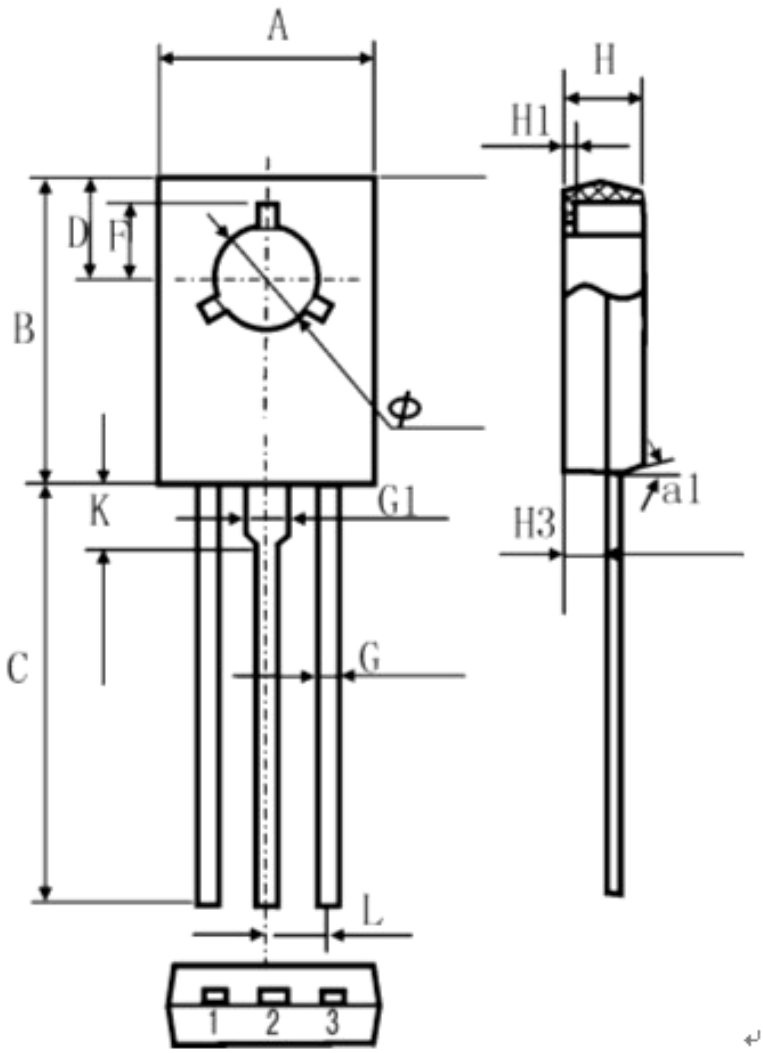
HTP4-600S
(TO-220)



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±0.25
B(mm)	11.12±0.25
C(mm)	14.5±0.5
E(mm)	3.625±0.125
F(mm)	1.4±0.12
G(mm)	0.76±0.08
G1(mm)	1.3±0.12
H(mm)	3.57±0.13
H3(mm)	2.01±0.13
I(mm)	2.99±0.38
K(mm)	1.0±0.12
L(mm)	2.3MAX
ϕ1(mm)	3.0±0.12