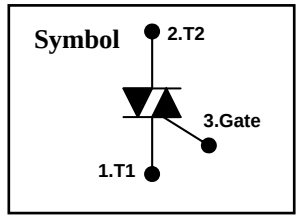
SemiHow
SEMICONDUCTOR TOTAL SOLUTION®

HTx6-600
600V 6A TRIAC

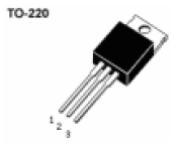
V_{DRM} = 600 V
$I_{T(RMS)}$ = 6.0A



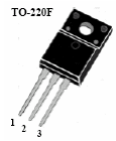
FEATURES

- ❑ Repetitive Peak Off-State Voltage: 600V
- ❑ R.M.S On-state Current ($I_{T(RMS)}$=6A)
- ❑ High Commutation dv/dt

1.T1 2. T2 3. Gate



HTP6-600



HTS6-600

General Description

The TRIAC HTx6-600 is suitable for AC switching application, phase control application such as heater control, motor control, lighting control, and static switching relay.

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 = 98℃)	HTP6-600	6	A
	R.M.S On-State Current (Tc = 94℃)	HTS6-600		
I_{TSM}	Surge On-State Current (One Cycle, 50/60Hz, Peak, Non Repetitive)	50Hz	60	A
		60Hz	66	
V_{GM}	Peak Gate Voltage		10	V
I_{GM}	Peak Gate Current		2	A
P_{GM}	Peak Gate Power Dissipation	HTP6-600	3	W
		HTS6-600	5	W
V_{ISO}	Isolation Breakdown Boltate, AC RMS 1Min	(HTS6-600 only)	1500	V
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-			20	mA
V_{GT}	Gate Trigger Voltage	V_D=6V, R_L=10Ω	1+, 1-, 3-			1.5	V
V_{GD}	Non Trigger Gate Voltage	T_j=125℃, V_D=1/2V_{DRM}		0.2			V
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Communication	T_j=125℃, V_D=2/3V_{DRM} (di/dt)c=-3A/ms		5.0			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				1.5	V

Thermal Characteristics

Symbol	Parameter	Test Conditions	Case	Min	Typ	Max	Units
$R_{TH(J-C)}$	Thermal Resistance	Junction to Case	HTP6-600			2.8	℃/W
			HTS6-600			3.8	℃/W

Performance Curves

Fig 1. Gate Characteristics

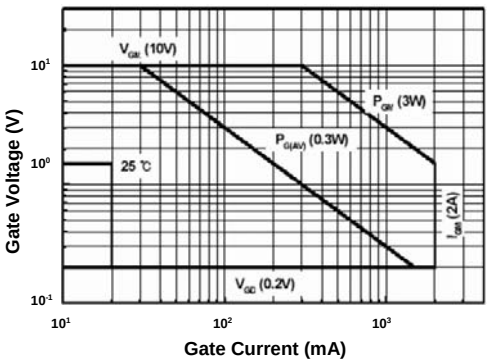


Fig 2.On-State Voltage

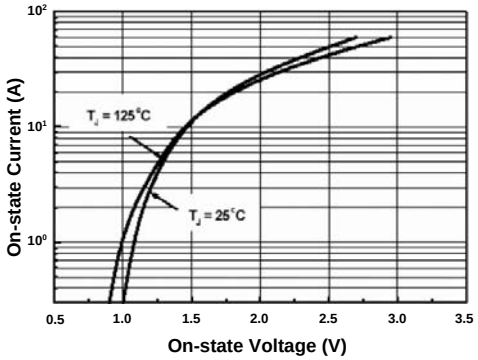


Fig 3. Gate Trigger Voltage vs. Junction Temperature

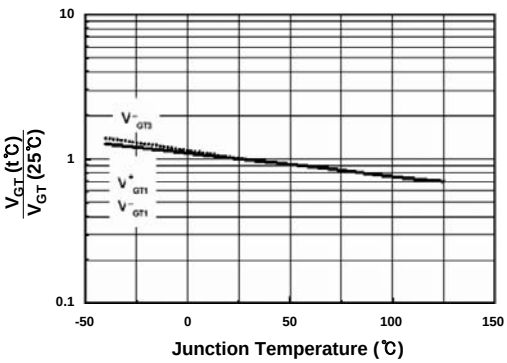


Fig 4. On State Current vs. Maximum Power Dissipation

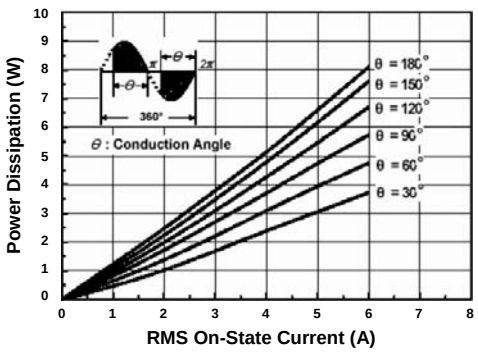


Fig 5. On State Current vs. Allowable Case Temperature

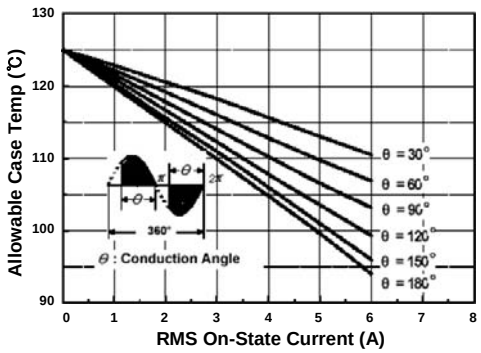


Fig 6. Surge On-State Current Rating (Non-Repetitive)

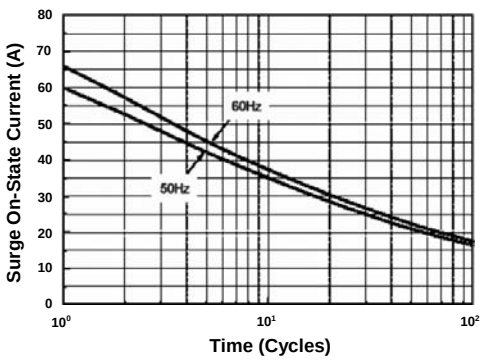


Fig 7. Gate Trigger Current vs. Junction Temperature

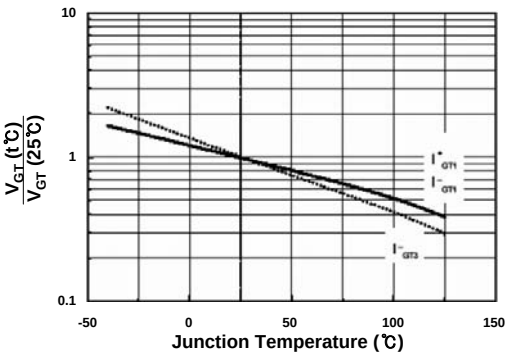


Fig8. Transient Thermal Impedance

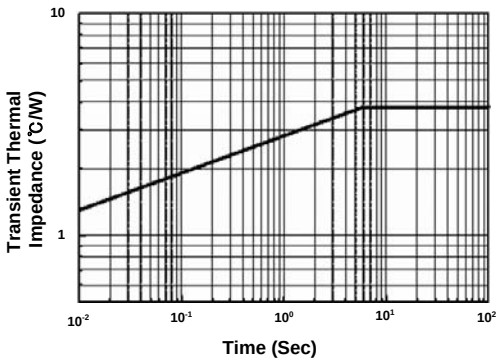
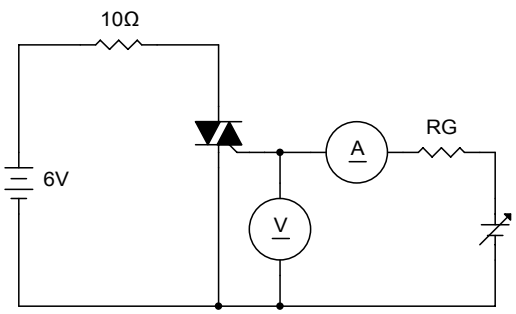
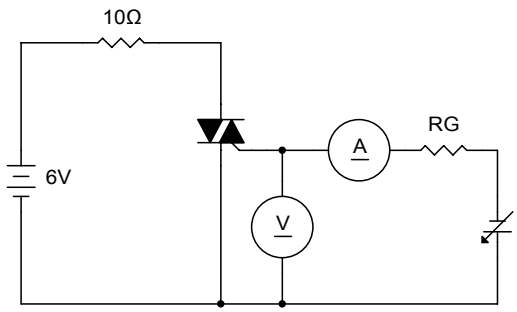


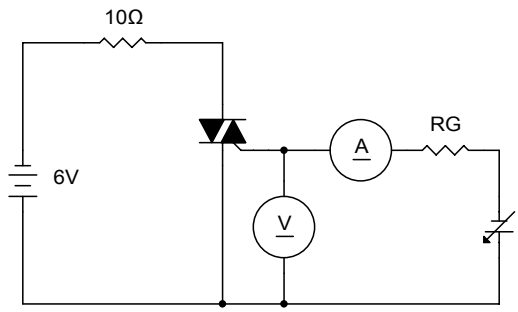
Fig 7. Gate Trigger Characteristics Test Circuit



Test Procedure I



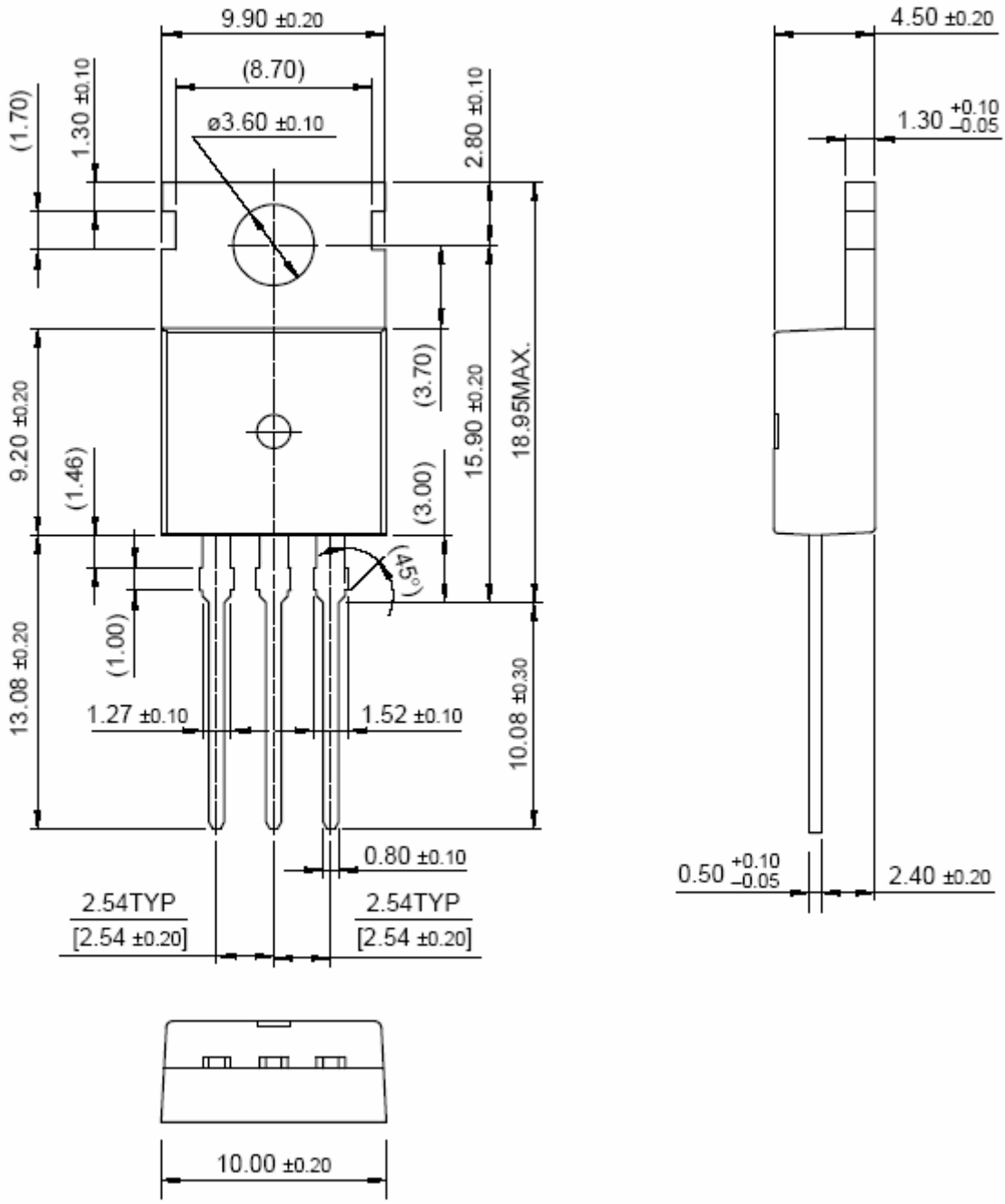
Test Procedure II



Test Procedure III

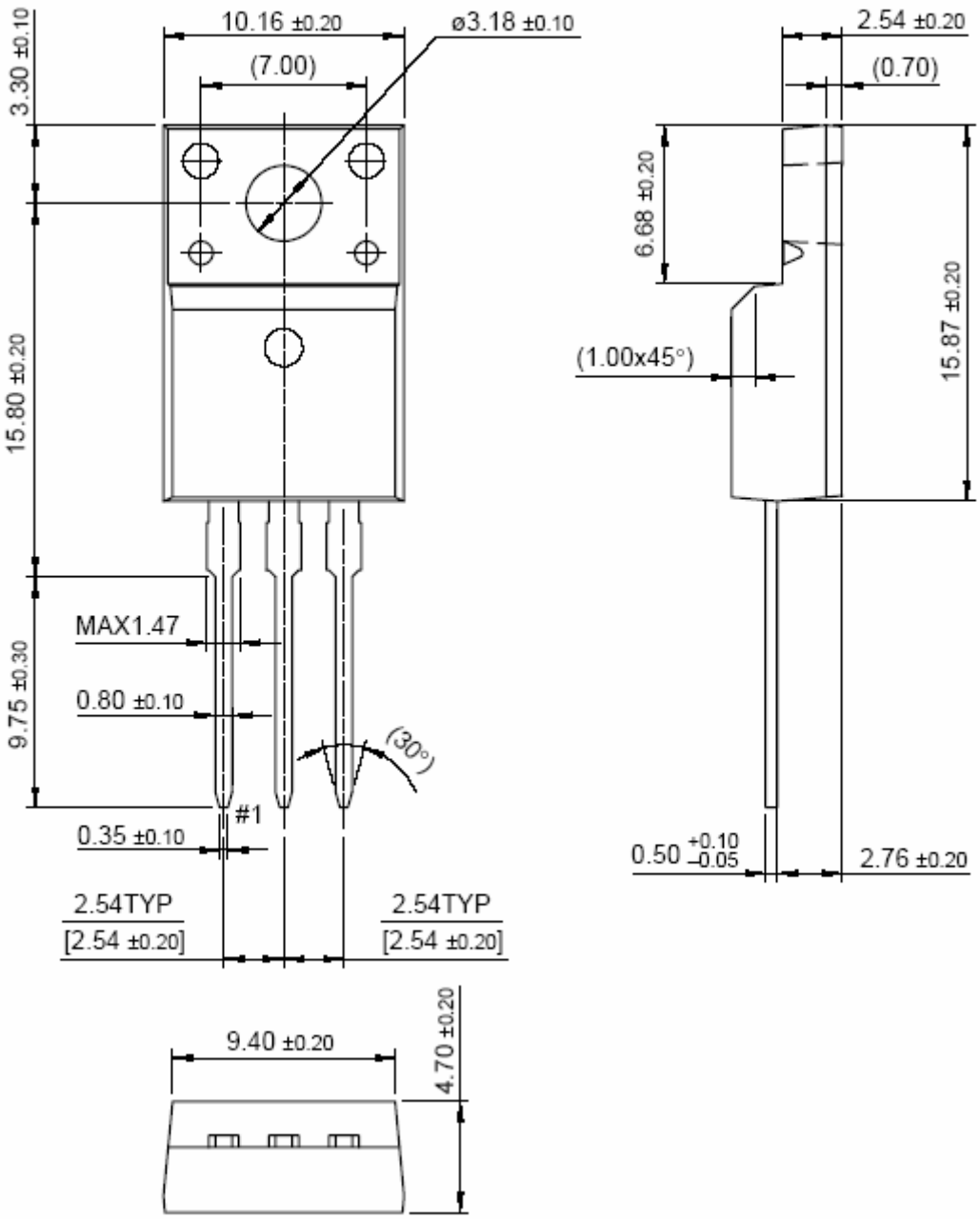
Package Dimension

HTP6-600
(TO-220)



Package Dimensions

HTS6-600
(TO-220F)



Dimensions in Millimeters