



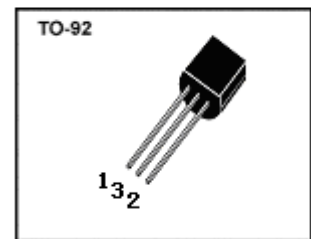
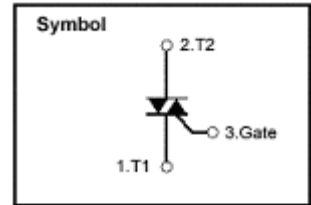
## BI-DIRECTIONAL TRIODE THYRISTOR (TRIAC)

### Features

- \* Repetitive Peak Off-State Voltage: 600V
- \* R.M.S On-state Current( $I_{T(RMS)}=1A$ )
- \* High Commutation  $dv/dt$

### General Description

The Triac HTR1A60 is suitable for AC switching application, phase control application such as heater control, motor control, lighting control, and static switching relay.



### Absolute Maximum Ratings ( $T_a=25^\circ C$ )

$T_{stg}$ —Storage Temperature .....	-40~125
$T_J$ —Operating Junction Temperature .....	-40~125
$P_{GM}$ —Peak Gate Power Dissipation .....	1W
$P_{G(AV)}$ —Average Gate Power Dissipation .....	0.1W
$V_{DRM}$ —Repetitive Peak Off-State Voltage .....	600V
$I_T (RMS)$ —R.M.S On-State Current ( $T_a=58^\circ C$ ) .....	1A
$V_{GM}$ —Peak Gate Voltage .....	6V
$I_{GM}$ —Peak Gate Current .....	0.5A
$I_{TSM}$ —Surge On-State Current (One Cycle, 50/60Hz,Peak,Non-Repetitive) .....	9.1/10A

**Electrical Characteristics (  $T_a=25$  )**

Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
$I_{DRM}$	Repetitive Peak Off-state Current			0.5	mA	$V_D=V_{DRM}$ , Single Phase, Half Wave, $T_J=125$
$V_{TM}$	Peak On-State Voltage			1.6	V	$I_T=1.5A$ , Inst. Measurement
$I_{+GT1}$	Gate Trigger Current ( )			5.0	mA	$V_D=6V$ , $R_L=10$ ohm
$I_{-GT1}$	Gate Trigger Current ( )			5.0	mA	$V_D=6V$ , $R_L=10$ ohm
$I_{-GT3}$	Gate Trigger Current ( )			5.0	mA	$V_D=6V$ , $R_L=10$ ohm
$I_{+GT3}$	Gate Trigger Current ( )			10.0	mA	$V_D=6V$ , $R_L=10$ ohm
$V_{+GT1}$	Gate Trigger Voltage ( )			1.8	V	$V_D=6V$ , $R_L=10$ ohm
$V_{-GT1}$	Gate Trigger Voltage ( )			1.8	V	$V_D=6V$ , $R_L=10$ ohm
$V_{-GT3}$	Gate Trigger Voltage ( )			1.8	V	$V_D=6V$ , $R_L=10$ ohm
$V_{+GT3}$	Gate Trigger Voltage ( )			2.0	V	$V_D=6V$ , $R_L=10$ ohm
$V_{GD}$	Non-Trigger Gate Voltage	0.2			V	$T_J=125$ , $V_D=1/2V_{DRM}$
(dv/dt) <sub>c</sub>	Critical Rate of Rise of Off-State Voltage at Commutation	2.0			V/ $\mu$ S	$T_J=125$ , $V_D=2/3V_{DRM}$ (di/dt) <sub>c</sub> =-0.5A/ms
$I_H$	Holding Current		4.0		mA	
R <sub>th(j-c)</sub>	Thermal Resistance			50	/W	Junction to case
R <sub>th(j-a)</sub>	Thermal Resistance			120	/W	Junction to Ambient



## Performance Curves

Fig 1. Gate Characteristics

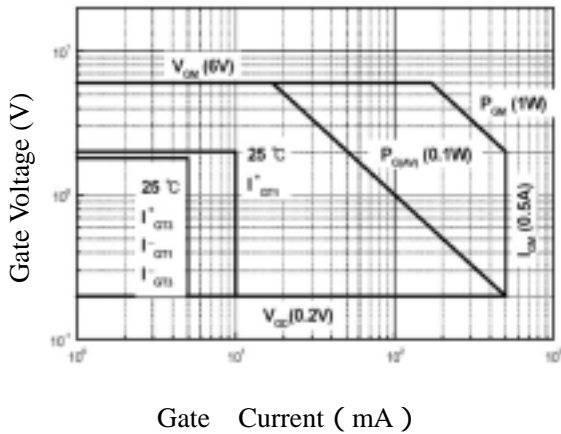


Fig 2. On-State Voltage

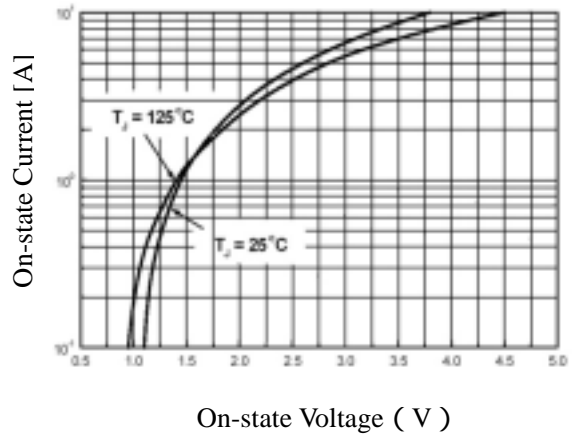


Fig 3. Gate Trigger Voltage vs. Junction Temperature

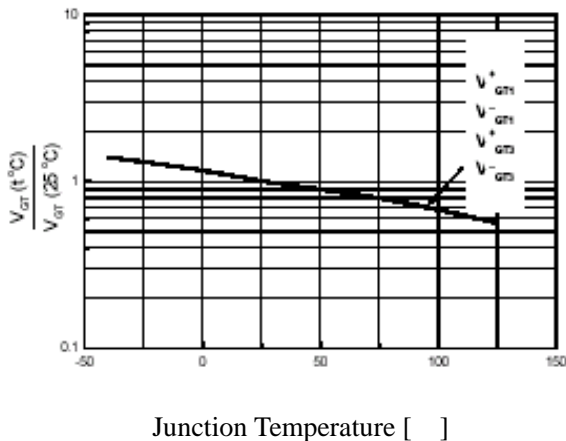


Fig 4. On State Current vs. Maximum Power Dissipation

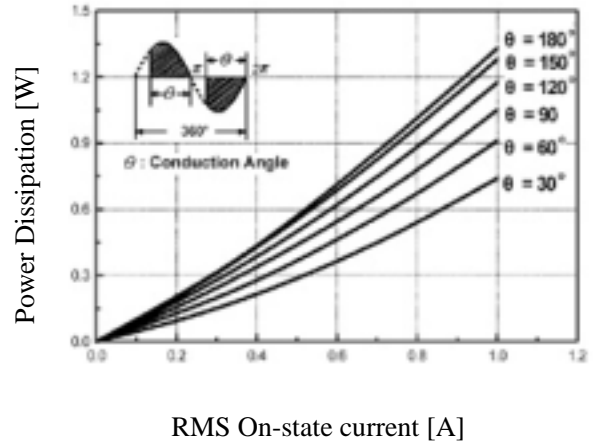


Fig 5. On State Current vs. Allowable Case Temperature

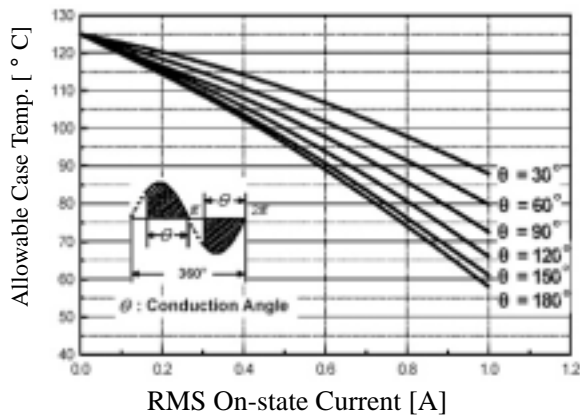
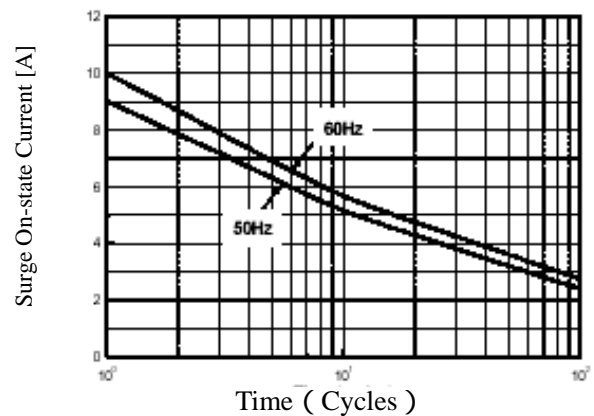
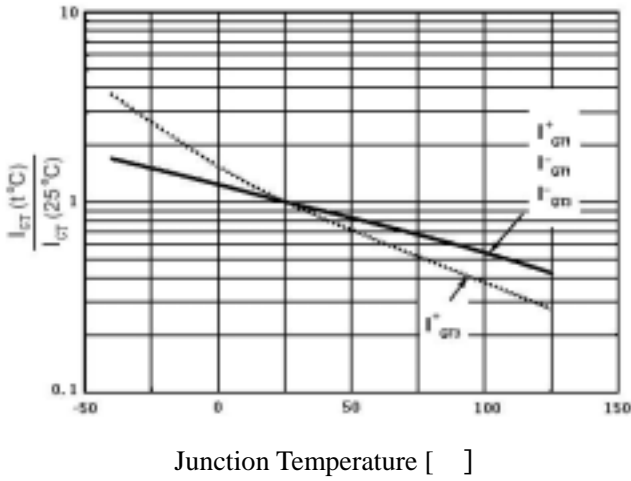


Fig 6. Surge On-State Current Rating (Non-Repetitive)

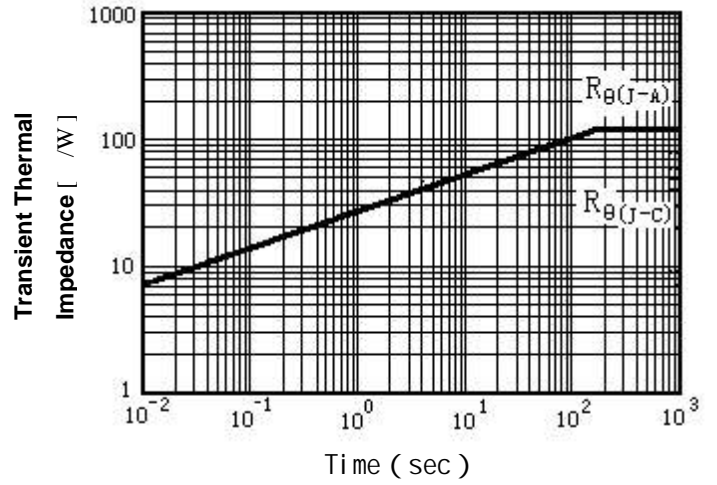




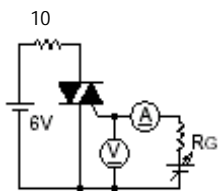
**Fig 7. Gate Trigger Current vs. Junction Temperature**



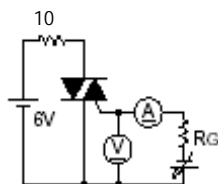
**Fig 8. Transient Thermal Impedance**



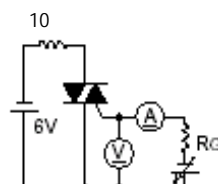
**Fig 9. Gate Trigger Characteristics Test Circuit**



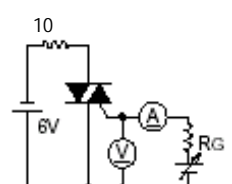
Test Procedure



Test Procedure



Test Procedure



Test Procedure