



NON INSULATED TYPE TRIAC (TO-220 PACKAGE)

Features

- * Repetitive Peak Off-State Voltage: 600V
- * R.M.S On-State Current($I_{T(RMS)}$)=12A
- * High Commutation dv/dt

General Description

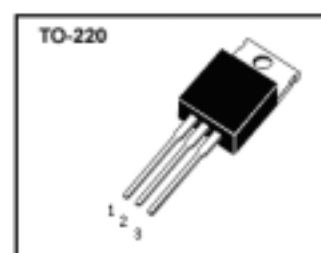
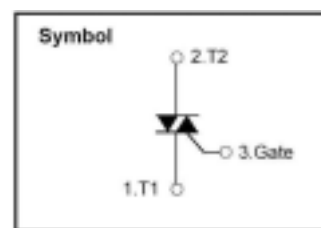
The Triac HTP12A60 is suitable for wide range of applications, like copier, microwave oven, heater control, motor control, lighting control, and static switching relay.

Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

T_{stg}	—Storage Temperature	-40~125°C
T_j	—Operating Junction Temperature	-40~125°C
P_{GM}	—Peak Gate Power Dissipation	5W
V_{DRM}	—Repetitive Peak Off-State Voltage	600V
I_T (RMS)	—R.M.S On-State Current ($T_a=100^{\circ}\text{C}$)	12A
V_{GM}	—Peak Gate Voltage	10V
I_{GM}	—Peak Gate Current	2.0A
I_{TSM}	—Surge On-State Current (One Cycle, 50/60Hz, Peak, Non-Repetitive)	119/130A

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

Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
I_{DRM}	Repetitive Peak Off-State Current			2.0	mA	$V_D=V_{DRM}$, Single Phase, Half Wave, $T_j=125^{\circ}\text{C}$
V_{TM}	Peak On-State Voltage			1.4	V	$I_T=20\text{A}$, Inst. Measurement
I_{+GT1}	Gate Trigger Current (I)			30	mA	$V_D=6\text{V}$, $R_L=10\text{ ohm}$
I_{-GT1}	Gate Trigger Current (II)			30	mA	$V_D=6\text{V}$, $R_L=10\text{ ohm}$
I_{-GT3}	Gate Trigger Current (III)			30	mA	$V_D=6\text{V}$, $R_L=10\text{ ohm}$
V_{+GT1}	Gate Trigger Voltage (I)			1.5	V	$V_D=6\text{V}$, $R_L=10\text{ ohm}$
V_{-GT1}	Gate Trigger Voltage (II)			1.5	V	$V_D=6\text{V}$, $R_L=10\text{ ohm}$
V_{-GT3}	Gate Trigger Voltage (III)			1.5	V	$V_D=6\text{V}$, $R_L=10\text{ ohm}$
V_{GD}	Non-Trigger Gate Voltage	0.2			V	$T_j=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$
$(dv/dt)_c$	Critical Rate of Rise of Off-State Voltage at Commutation	10			V/ μS	$T_j=125^{\circ}\text{C}$, $V_D=2/3V_{DRM}$ $(di/dt)_c=-6\text{A/ms}$
I_H	Holding Current		20		mA	
$R_{th(j-c)}$	Thermal Resistance			1.8	$^{\circ}\text{C/W}$	Junction to case





Performance Curves

Fig 1. Gate Characteristics

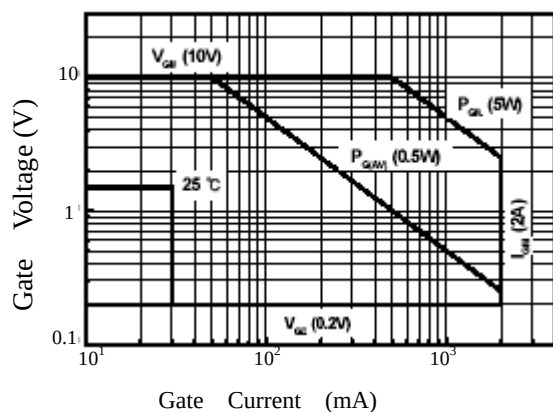


Fig 2. On-State Voltage

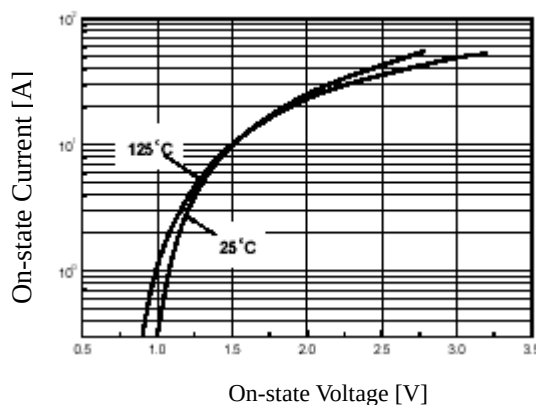


Fig 3. Gate Trigger Voltage vs. Junction Temperature

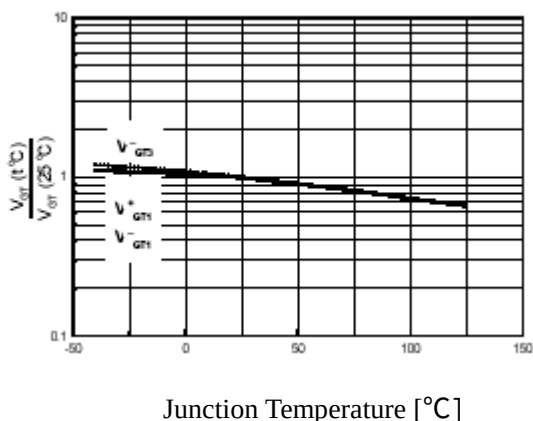


Fig 4. On State Current vs. Maximum Power Dissipation

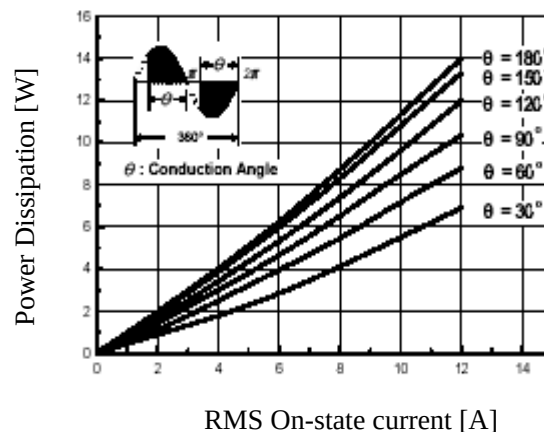


Fig 5. On State Current vs. Allowable Case Temperature

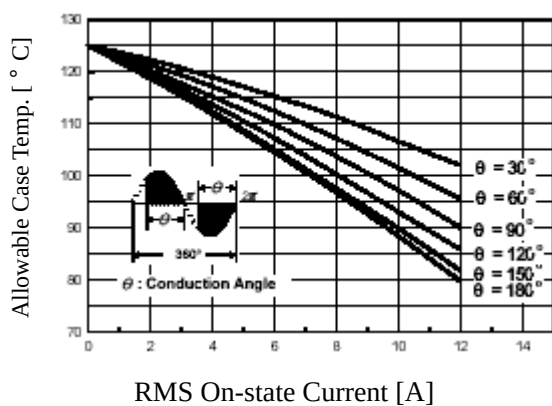


Fig 6. Surge On-State Current Rating (Non-Repetitive)

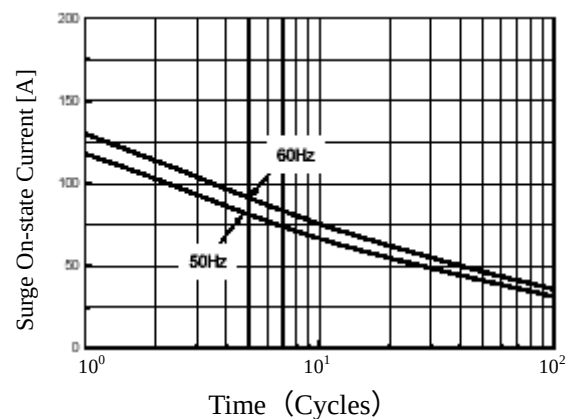
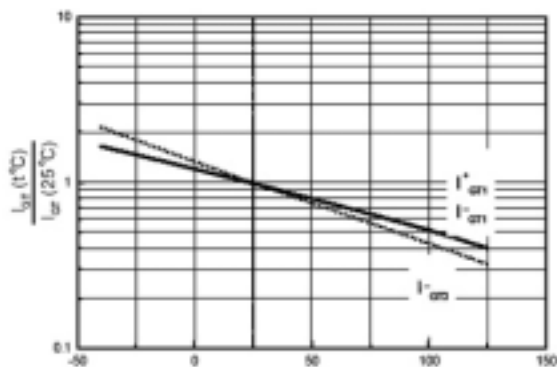


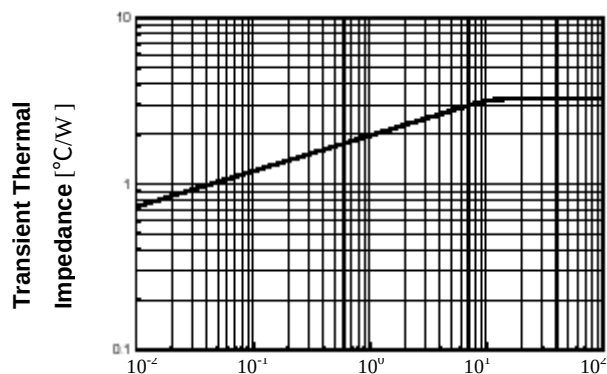


Fig 7. Gate Trigger Current vs.
Junction Temperature



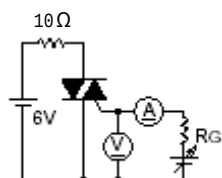
Junction Temperature [°C]

Fig 8. Transient Thermal Impedance

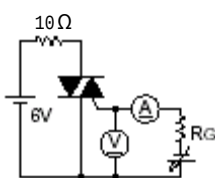


Time (sec)

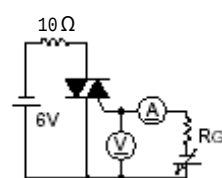
Fig 9. Gate Trigger Characteristics Test Circuit



Test Procedure I



Test Procedure II



Test Procedure III