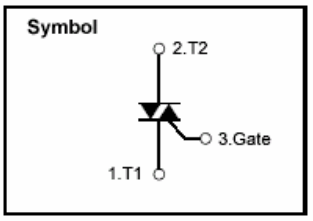
Shantou Huashan Electronic Devices Co.,Ltd.

HTP4A60S

NON INSULATED TYPE SENSITIVE GATE TRIAC (TO-220 PACKAGE)

Features



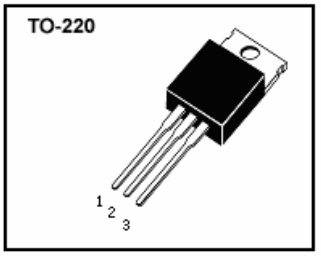
*** Repetitive Peak Off-State Voltage: 600V**

*** 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（T_a=25℃）

T_{stg} ——Storage Temperature ····· -40~125℃

T_j ——Operating Junction Temperature ····· -40~125℃

P_{GM} ——Peak Gate Power Dissipation ·····1.5W

$P_{G\ (AV)}$ ——Average Gate Power Dissipation ····· 0.1W

V_{DRM} ——Repetitive Peak Off-State Voltage ····· 600V

$I_{T\ (RMS)}$ ——R.M.S On-State Current (Ta=95℃) ····· 4.0A

V_{GM} ——Peak Gate Voltage ····· 7.0V

I_{GM} ——Peak Gate Current ····· 1.0A

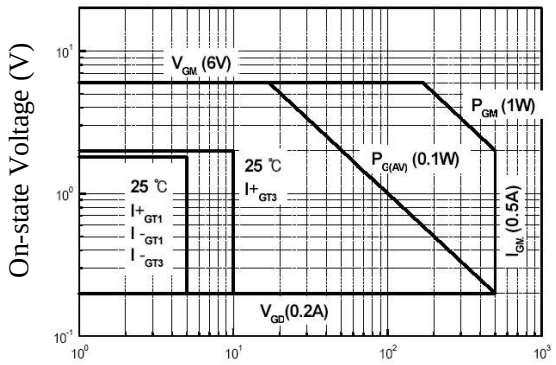
I_{TSM} ——Surge On-State Current (One Cycle, 50/60Hz,Peak,Non-Repetitive) ····· 30/33A

Electrical Characteristics (T_a=25℃)

Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
I_{DRM}	Repetitive Peak Off-State Current			1.0	mA	$V_D=V_{DRM}$, Single Phase, Half Wave, T_J=125℃
V_{TM}	Peak On-State Voltage			1.6	V	I_T=6A, Inst. Measurement
$I+_{GT1}$	Gate Trigger Current（Ⅰ）			5.0	mA	V_D=6V, R_L=10 ohm
$I-_{GT1}$	Gate Trigger Current（Ⅱ）			5.0	mA	V_D=6V, R_L=10 ohm
$I-_{GT3}$	Gate Trigger Current（Ⅲ）			5.0	mA	V_D=6V, R_L=10 ohm
$I+_{GT3}$	Gate Trigger Current（Ⅳ）			10.0	mA	V_D=6V, R_L=10 ohm
$V+_{GT1}$	Gate Trigger Voltage（Ⅰ）			1.4	V	V_D=6V, R_L=10 ohm
$V-_{GT1}$	Gate Trigger Voltage（Ⅱ）			1.4	V	V_D=6V, R_L=10 ohm
$V-_{GT3}$	Gate Trigger Voltage（Ⅲ）			1.4	V	V_D=6V, R_L=10 ohm
$V+_{GT3}$	Gate Trigger Voltage（Ⅳ）			1.8	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)c	Critical Rate of Rise of Off-State Voltage at Commutation	5			V/μS	T_J=125℃, V_D=2/3V_{DRM} (di/dt)c= -0.5A/ms
I_H	Holding Current			10	mA	
Rth(j-c)	Thermal Resistance			3	℃/W	Junction to case

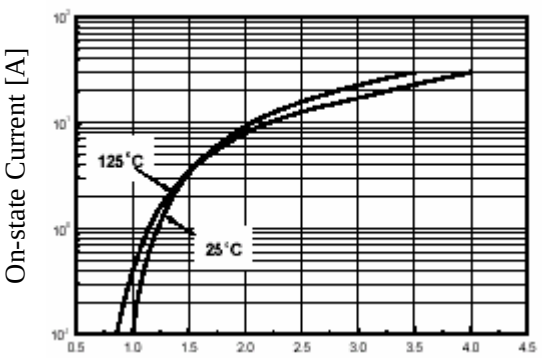
Performance Curves

Fig 1. Gate Characteristics



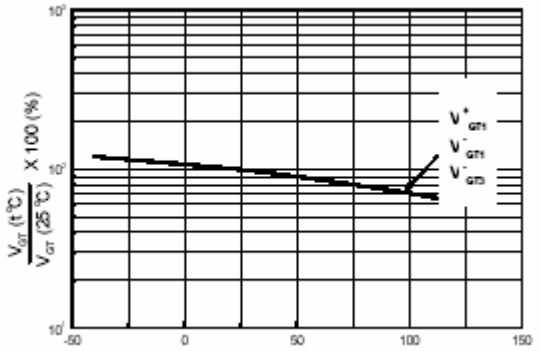
Gate Current（mA）

Fig 2. On-State Voltage



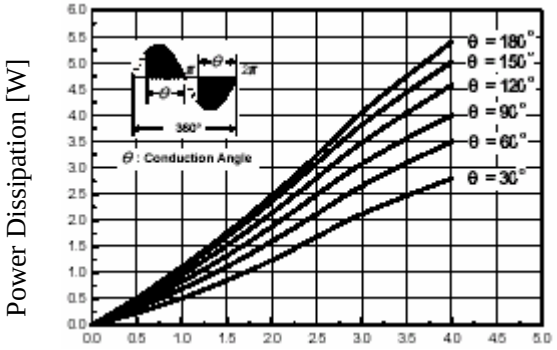
On-state Voltage（V）

Fig 3. Gate Trigger Voltage vs. Junction Temperature



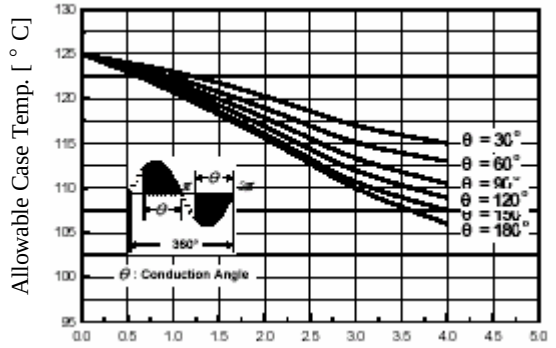
Junction Temperature [℃]

Fig 4. On State Current vs. Maximum Power Dissipation



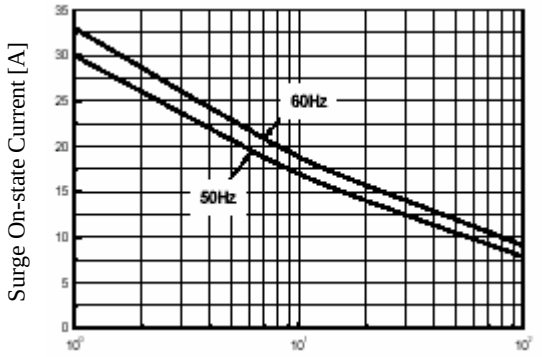
RMS On-state current [A]

Fig 5. On State Current vs. Allowable Case Temperature



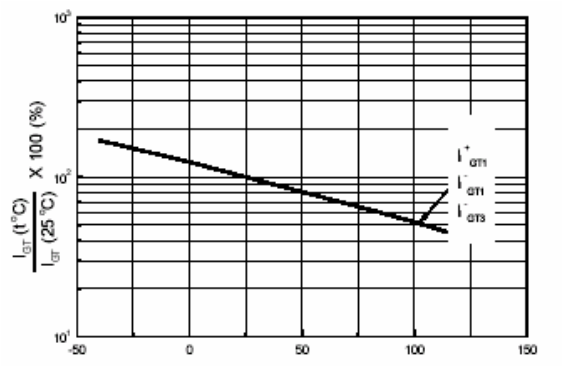
RMS On-state Current [A]

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



Time（Cycles）

Fig 7. Gate Trigger Current vs. Junction Temperature



Junction Temperature [℃]

Fig 8. Transient Thermal Impedance

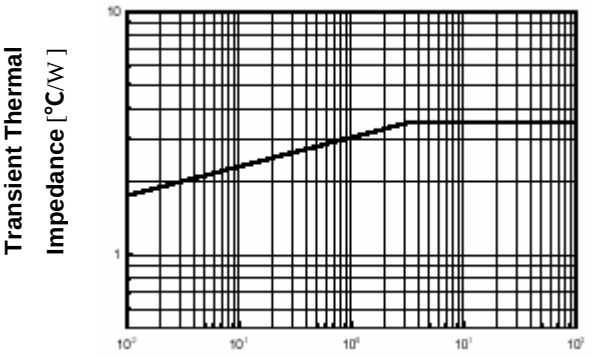
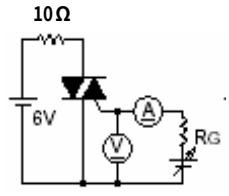
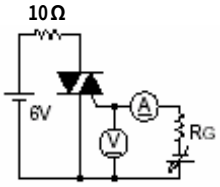


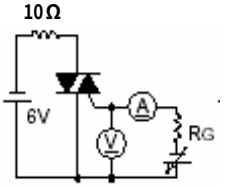
Fig 9. Gate Trigger Characteristics Test Circuit



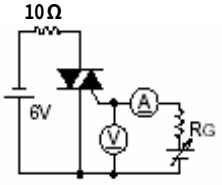
Test Procedure **I**



Test Procedure **II**



Test Procedure **III**



Test Procedure **IV**