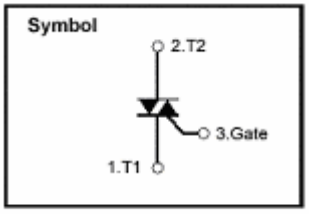
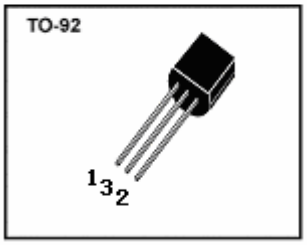
HTR1A80

BI-DIRECTIONAL TRIODE THYRISTOR (TRIAC)

Features

*** Repetitive Peak Off-State Voltage: 800V**
*** R.M.S On-state Current($I_{T(RMS)}$=1A)**
*** High Commutation dv/dt**





General Description

The Triac HTR1A80 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℃）

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 ····· 800V

$I_{T\ (RMS)}$ ——R.M.S On-State Current（Ta=58℃） ····· 1A

V_{GM} ——Peak Gate Voltage ····· 6V

I_{GM} ——Peak Gate Current ····· 0.5A

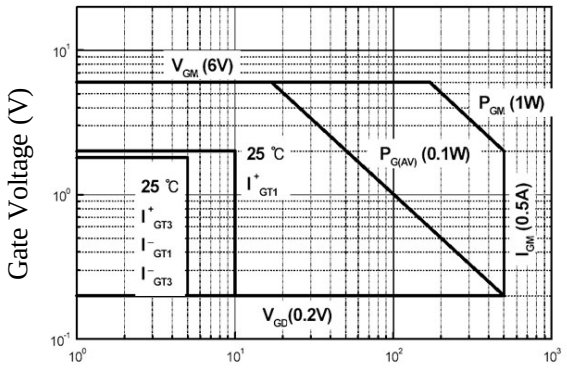
I_{TSM} ——Surge On-State Current (One Cycle, 50/60Hz,Peak,Non-Repetitive) ····· 9.1/10A

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 (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)			1.8	V	V_D=6V, R_L=10 ohm
$V-_{GT1}$	Gate Trigger Voltage (Ⅱ)			1.8	V	V_D=6V, R_L=10 ohm
$V-_{GT3}$	Gate Trigger Voltage (Ⅲ)			1.8	V	V_D=6V, R_L=10 ohm
$V+_{GT3}$	Gate Trigger Voltage (Ⅳ)			2.0	V	V_D=6V, R_L=10 ohm
V_{GD}	Non-Trigger Gate Voltage	0.2			V	TJ=125℃, $V_D=1/2V_{DRM}$
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation	2.0			V/μS	TJ=125℃, $V_D=2/3V_{DRM}$ (di/dt)c=-0.5A/ms
I_H	Holding Current			10	mA	
Rth(j-c)	Thermal Resistance			50	℃/W	Junction to case
Rth(j-a)	Thermal Resistance			120	℃/W	Junction to Ambient

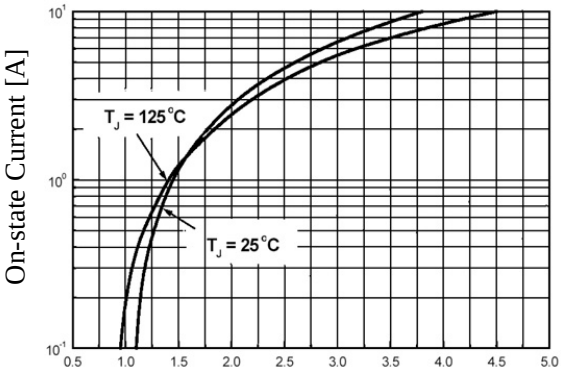
Performance Curves

Fig 1. Gate Characteristics



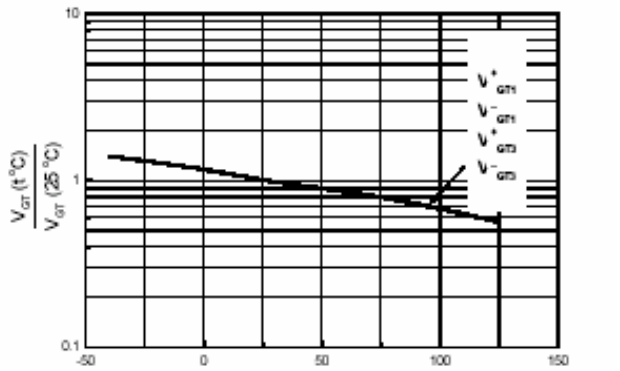
Gate Current（mA）

Fig 2. On-State Voltage



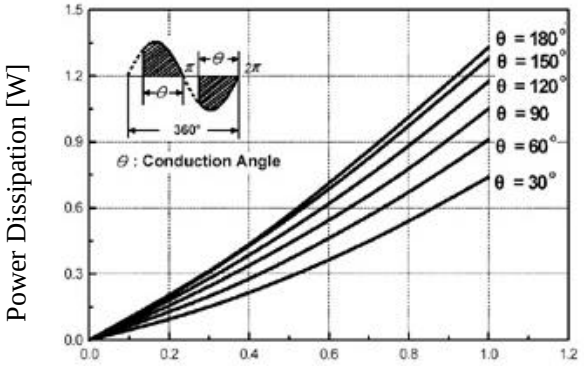
On-state Voltage（V）

Fig 3. Gate Trigger Voltage vs. Junction Temperature



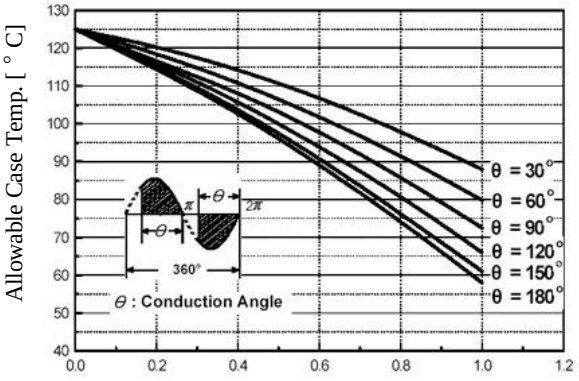
Junction Temperature [℃]

Fig 4. On State Current vs. Maximum Power Dissipation



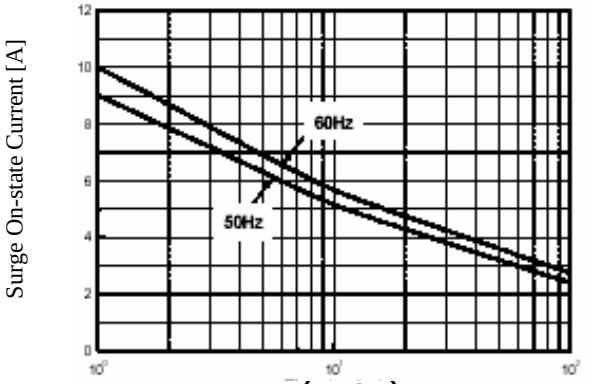
RMS On-state current [A]

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

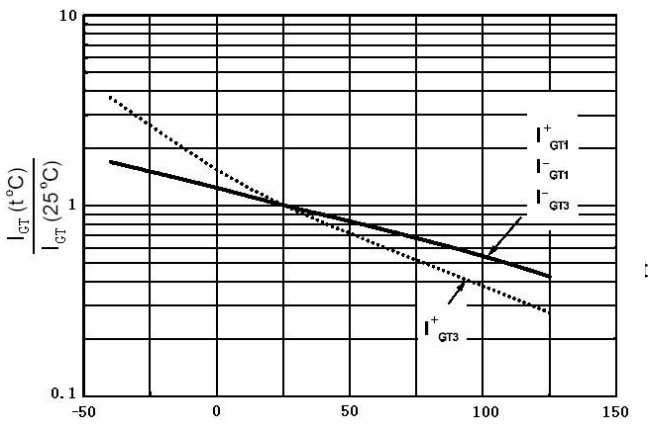


Fig 8. Transient Thermal Impedance

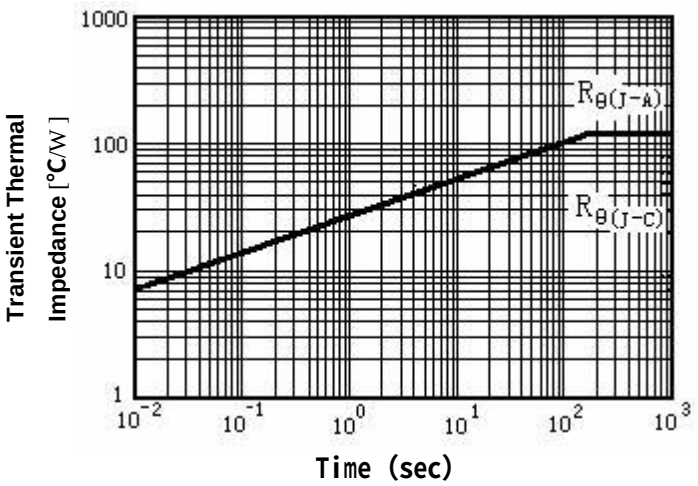
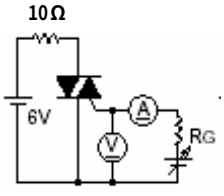
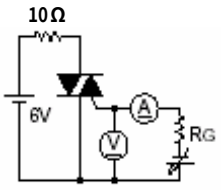


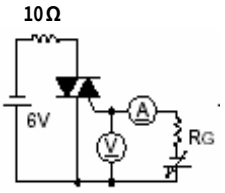
Fig 9. Gate Trigger Characteristics Test Circuit



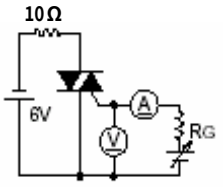
Test Procedure **I**



Test Procedure **II**



Test Procedure **III**



Test Procedure **IV**