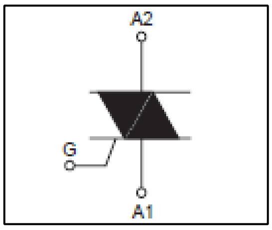
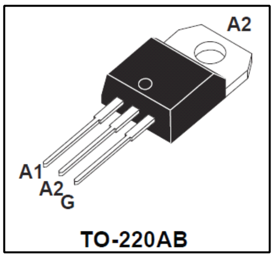
WTPB4A60SW

Bi-Directional Triode Thyristor



Features

- Repetitive Peak Off-State Voltage : 600V
- R.M.S On-State Current (IT(RMS)= 4 A)
- Low On-State Voltage (1.6V(Typ.) @ I_{TM})
- High Commutation dv/dt



General Description

Standard gate triggering Triac is 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_J= 25°C unless otherwise specified)

Symbol	Parameter	Condition		Ratings	Units
V_{DRM}/V_{RRM}	Repetitive Peak Off-State Voltage			600	V
$I_{T(RMS)}$	R.M.S On-State Current	T_J = 110 °C		4.0	A
I_{TSM}	Surge On-State Current	One cycle, Peak value, non-repetitive full cycle	50Hz	30	A
			60Hz	31	
I^2t	I^2t			5.1	A^2s
P_{GM}	Peak Gate Power Dissipation			5	W
$P_{G(AV)}$	Average Gate Power Dissipation	T_J = 125 °C		1	W
I_{GM}	Peak Gate Current	T_J = 125 °C		4.0	A
V_{GM}	Peak Gate Voltage			7.0	V
T_J	Operating Junction Temperature			-40~+150	℃
T_{STG}	Storage Temperature			-40~+150	℃

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta Jc}$	Thermal Resistance Junction to Case(DC)	2.6	℃/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient(DC)	60	℃/W

Electrical Characteristics (T_C=25℃ unless otherwise noted)

Symbol	Characteristics		Min	Typ.	Max	Unit
I_{DRM}/I_{RRM}	off-state leakage current (V_{AK}= V_{DRM}/V_{RRM} Single phase, half wave)	TJ=25℃	-	-	5	μA
		TJ=125℃	-	-	1	mA
V_{TM}	Forward "On" voltage (I_T=5A, Inst. Measurement)		-	1.2	1.6	V
I_{GT}	Gate trigger current (continuous dc) (V_{AK} = 6 Vdc, RL = 10 Ω) Note:1	T2+,G+	-	-	35	mA
		T2+,G-	-	-	35	
		T2-,G-	-	-	35	
V_{GT}	Gate Trigger Voltage (Continuous dc)) (V_{AK} = 6 Vdc, RL = 10 Ω) Note:1	T2+,G+	-	-	1.5	V
		T2+,G-	-	-	1.5	
		T2-,G-	-	-	1.5	
V_{GD}	Gate threshold Voltage V_D=1/2V_{DRM}, RL = 3.3K Ω	T_J=125℃	0.2	-	-	V
dv/dt	Critical Rate of Rise of Off-State Voltage at Commutation (V_D=0.67V_{DRM} ;gate open) Note:2	T_J=125℃	40	-	-	V/μs
I_H	Holding Current		-	-	15	mA
I_L	latching current		-	-	30	mA

Note 1: minimum IGT is guaranteed at 5% of IGT max.
2: for both polarities of A2 referenced to A1 .

Fig 1. Gate Characteristics

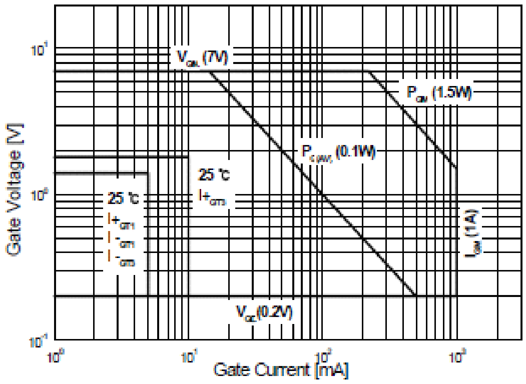


Fig 2. On-State Voltage

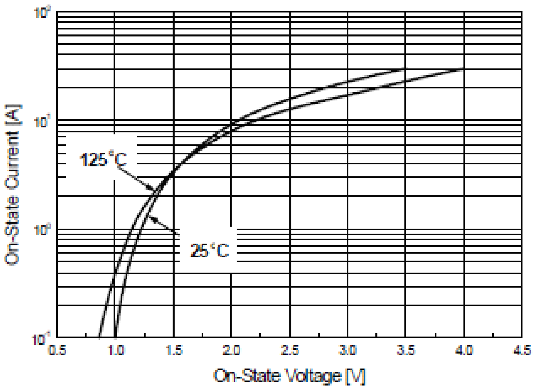


Fig 3. On State Current vs. Maximum Power Dissipation

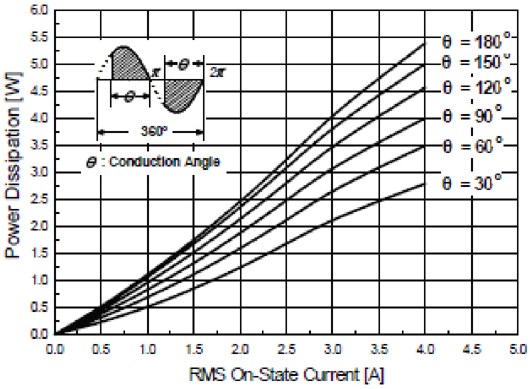


Fig 4. On State Current vs. Allowable Case Temperature

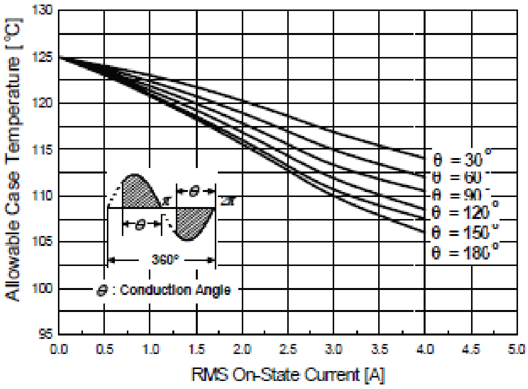


Fig 5. Surge On-State Current Rating (Non-Repetitive)

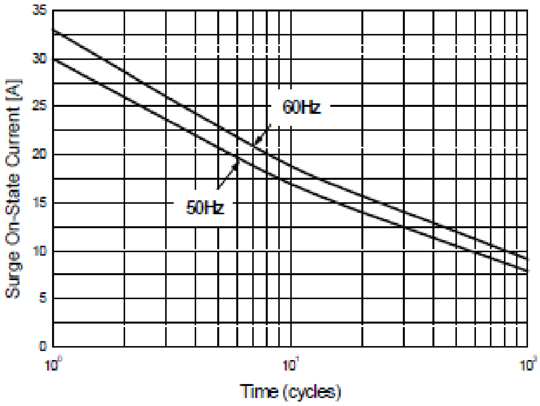


Fig 6. Gate Trigger Voltage vs. Junction Temperature

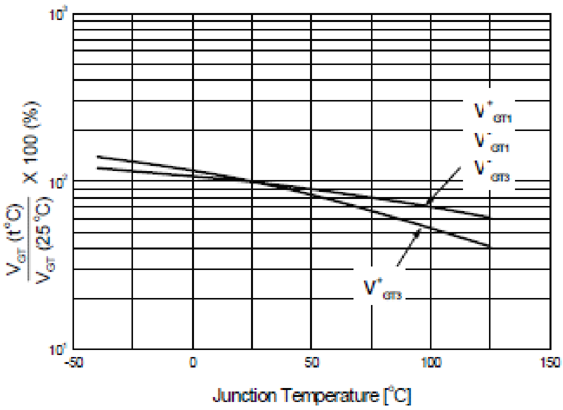


Fig 7. Gate Trigger Current vs. Junction Temperature

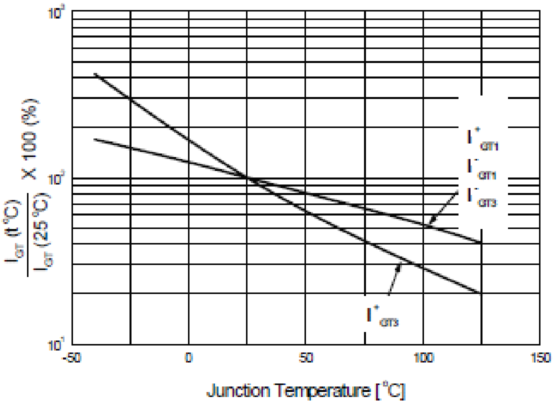


Fig 8. Transient Thermal Impedance

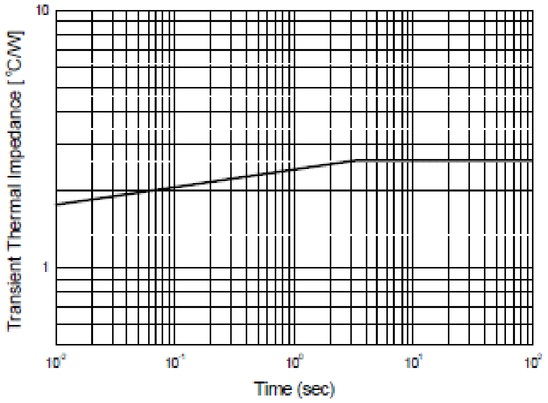
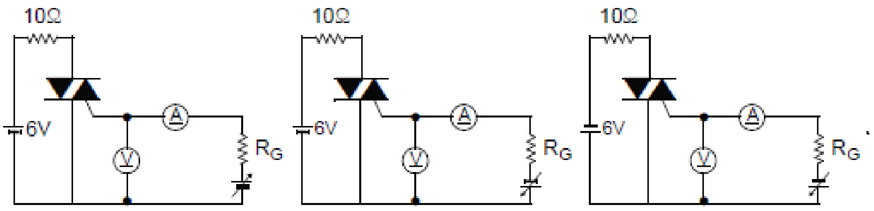


Fig 9. Gate Trigger Characteristics Test Circuit



Test Procedure Ⅰ　　Test Procedure Ⅱ　　Test Procedure Ⅲ

TO220 Package Dimension

Unit: mm