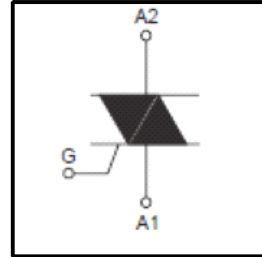


*Bi-Directional Triode Thyristor*

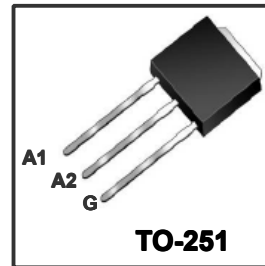
**Features**

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



**General Description**

Sensitive 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 ( $T_J = 25^\circ\text{C}$  unless otherwise specified)**

Symbol	Para	Condition	Ratings	Units
$V_{DRM}/V_{RRM}$	Repetitive Peak Off-State Voltage		600	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_J = 1118^\circ\text{C}$	4.0	A
$I_{TSM}$	Surge On-State Current	50/60Hz, One cycle, Peak value, non-repetitive	18/20	A
$I^2t$	$I^2t$		1.67	$\text{A}^2\text{s}$
$P_{GM}$	Peak Gate Power Dissipation		1.5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.1	W
$I_{GM}$	Peak Gate Current		1.0	A
$V_{GM}$	Peak Gate Voltage		7.0	V
$T_J$	Operating Junction Temperature		-40~+150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature		-40~+150	$^\circ\text{C}$

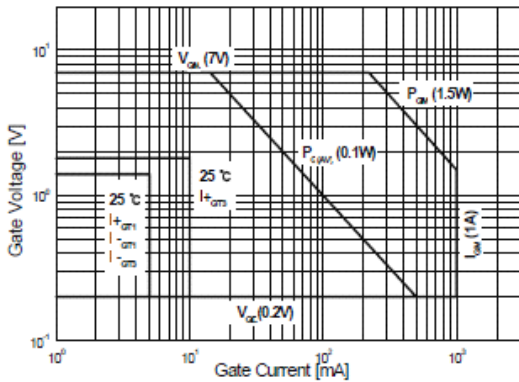
**Thermal Characteristics**

Symbol	Parameter	Value	Units
$R_{\theta Jc}$	Thermal Resistance Junction to Case(DC)	3	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient(DC)	75	$^\circ\text{C}/\text{W}$

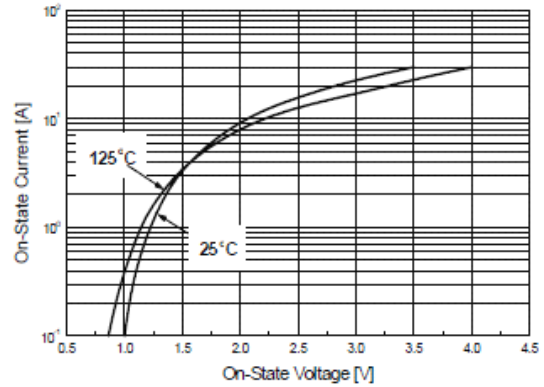
## Electrical Characteristics (T<sub>c</sub>=25°C unless otherwise noted)

Symbol	Characteristics	Min	Typ.	Max	Unit	
I <sub>DRM</sub> /I <sub>RRM</sub>	off-state leakage current (V <sub>AK</sub> = V <sub>DRM</sub> /V <sub>RRM</sub> Single phase, half wave)					
					T <sub>J</sub> =125°C	
		-	100	500	μA	
V <sub>TM</sub>	Forward "On" voltage (I <sub>T</sub> =5A, Inst. Measurement)	-	1.2	1.7	V	
I <sub>GT</sub>	Gate trigger current (continuous dc) (V <sub>AK</sub> = 6 Vdc, RL = 10 Ω)	T2+,G+	-	-	5	mA
		T2+,G-	-	-	5	
		T2-,G-	-	-	5	
		T2-,G+	-	-	10	
V <sub>GT</sub>	Gate Trigger Voltage (Continuous dc) ) (V <sub>AK</sub> = 6 Vdc, RL = 10 Ω)	T2+,G+	-	-	1.5	V
		T2+,G-	-	-	1.5	
		T2-,G-	-	-	1.5	
		T2-,G+	-	-	2	
V <sub>GD</sub>	Gate threshold Voltage V <sub>D</sub> =1/2V <sub>DRM</sub>					
					T <sub>J</sub> =125°C	
		0.2	-	-	V	
(dv/dt) <sub>c</sub>	Critical Rate of Rise of Off-State Voltage at Commutation (V <sub>D</sub> =0.67V <sub>DRM</sub> ;(d i /d t ) <sub>C</sub> =-1A/ms)					
					T <sub>J</sub> =125°C	
		3	-	-	V/μs	
I <sub>H</sub>	Holding Current	-	2	-	mA	
I <sub>L</sub>	latching current	-	2	6	mA	

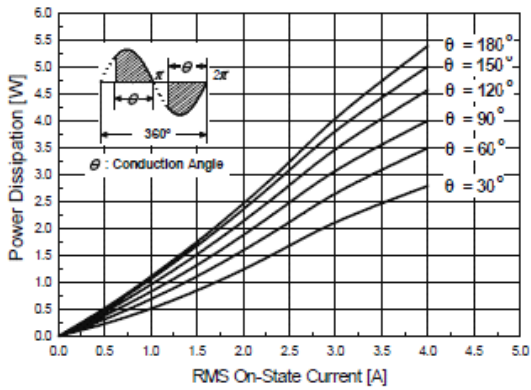
**Fig 1. Gate Characteristics**



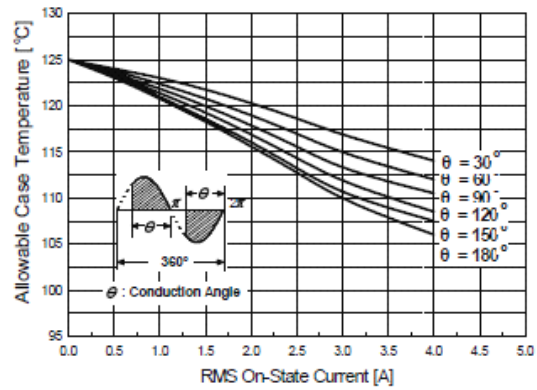
**Fig 2. On-State Voltage**



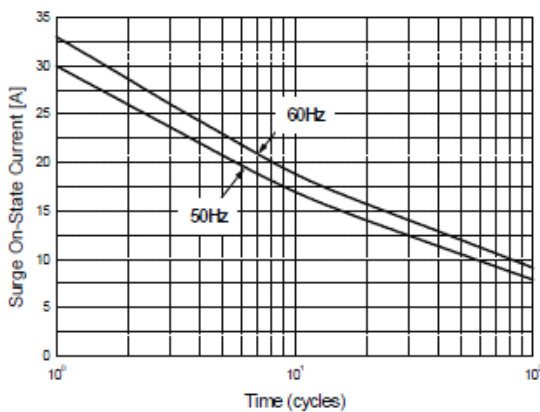
**Fig 3. On State Current vs. Maximum Power Dissipation**



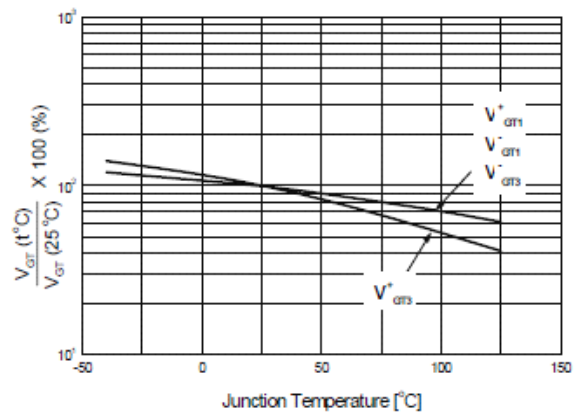
**Fig 4. On State Current vs. Allowable Case Temperature**



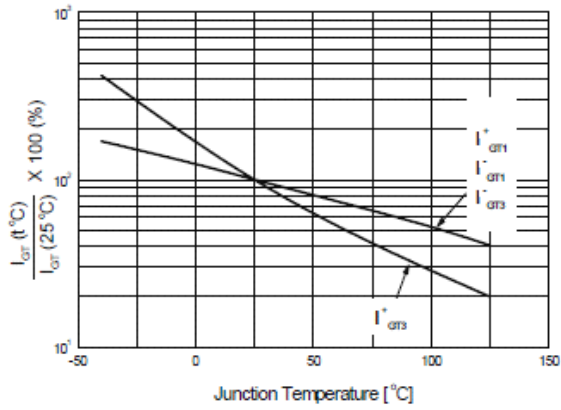
**Fig 5. Surge On-State Current Rating (Non-Repetitive)**



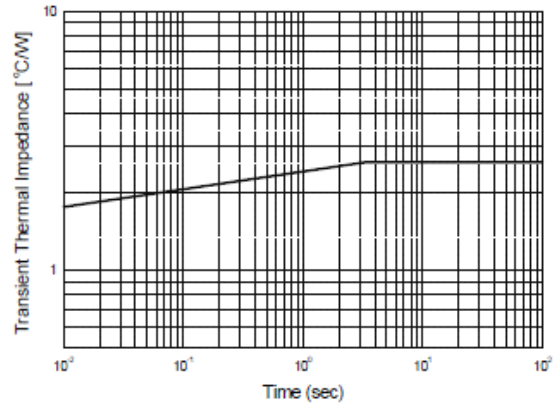
**Fig 6. Gate Trigger Voltage vs. Junction Temperature**



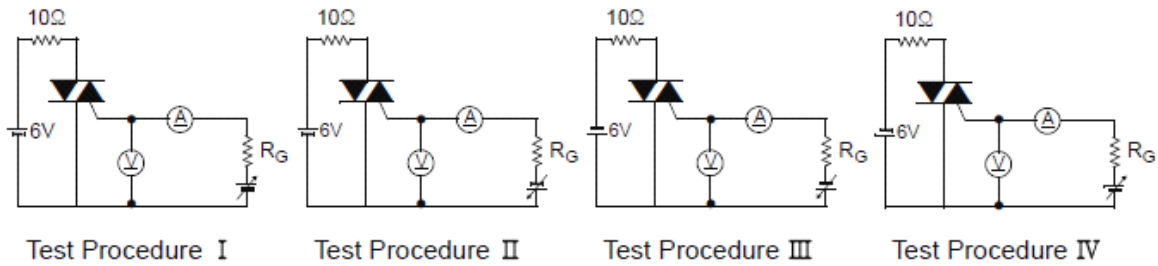
**Fig 7. Gate Trigger Current vs. Junction Temperature**



**Fig 8. Transient Thermal Impedance**



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



**TO-251 Package Dimension**

Unit: mm

