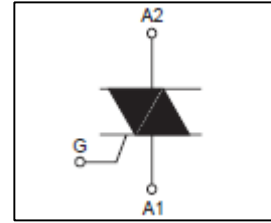


Features

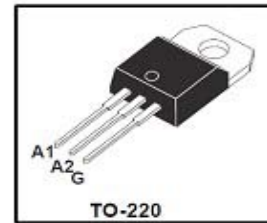
- Repetitive Peak off-State Voltage:600V
- R.M.S On-State Current($I_{T(RMS)}$)=8A
- Low on-state voltage: $V_{TM}=1.55V(Max.)@ I_T=11A$
- High Commutation dV/dt .



General Description

General purpose switching and phase control applications.

These devices are intended to be interfaced directly to micro-controllers, logic integrated circuits and other low power gate trigger circuits such as fan speed and temperature modulation control, lighting control and static switching relay.



Absolute Maximum Ratings (T_J=25°C unless otherwise specified)

Symbol	Parameter	Value	Units
V_{DRM}	Peak Repetitive Forward Blocking Voltage(gate open) (Note 1)	600	V
$I_{T(RMS)}$	Forward Current RMS (All Conduction Angles, T _c =58°C)	8	A
I_{TSM}	Peak Forward Surge Current, (1/2 Cycle, Sine Wave, 50/60 Hz)	80/84	A
I^2t	Circuit Fusing Considerations (t p= 10 ms)	36	A ² s
P_{GM}	Peak Gate Power — Forward, (T _c = 58°C,Pulse with ≤ 1.0us)	5	W
$P_{G(AV)}$	Average Gate Power — Forward, (Over any 20ms period)	1	W
I_{FGM}	Peak Gate Current — Forward, T _j = 125°C (20 μs, 120 PPS)	2	A
V_{RGM}	Peak Gate Voltage — Reverse, T _j = 125°C (20 μs, 120 PPS)	10	V
T _J	Junction Temperature	-40~125	°C
T _{stg}	Storage Temperature	-40~150	°C

Note1: Although not recommended, off-state voltages up to 800V may be applied without damage, but the TRIAC may switch to the on-state. The rate of rise of current should not exceed 3A/us.

Thermal Characteristics

Symbol	Parameter	Value			Units
		Min	Typ	Max	
R _{QJC}	Thermal Resistance, Junction-to-Case	-	-	1.6	°C/W
R _{QJA}	Thermal Resistance, Junction-to-Ambient	-	-	60	°C/W

Electrical Characteristics (Tc = 25°C unless otherwise specified)

Symbol	Characteristics	Min	Typ.	Max	Unit	
I _{DRM} /I _{RRM}	Peak Forward or Reverse Blocking Current (V _{DRM} =V _{RRM} .)	Tc=25°C	-	-	5	μA
		Tc=125°C	-	-	1	mA
V _{TM}	Forward "On" Voltage(Note2) (I _{TM} = 11A Peak @ TA = 25°C)	-	-	1.55	V	
I _{GT}	Gate Trigger Current (Continuous dc) (V _D = 6 Vdc, RL = 10 Ohms)	T2+G+	-	-	35	mA
		T2+G-	-	-	35	
		T2-G-	-	-	35	
V _{GT}	Gate Trigger Voltage (Continuous dc) (V _D =6 Vdc, RL = 10 Ohms)	T2+G+	-	-	1.2	V
		T2+G-	-	-	1.2	
		T2-G-	-	-	1.2	
V _{GD}	Gate threshold voltage(Tj=125°C, V _D = V _{DRM})	0.2	-	-	V	
dV/dt	Critical rate of rise of commutation Voltage (V _D =0.67V _{DRM})	400	-	-	V/μs	
di _{com} /dt	Critical rate of rise On-State voltage(V _D =400V,Tj=125°C)	4.5	-	-	A/μs	
I _H	Holding Current (I _T = 100 mA)	-	4	10	mA	
I _L	I _G =1.2I _{GT}	-	-	60	mA	
R _d	Dynamic resistance	-	-	50	mΩ	

Note 2. Forward current applied for 1 ms maximum duration, duty cycle

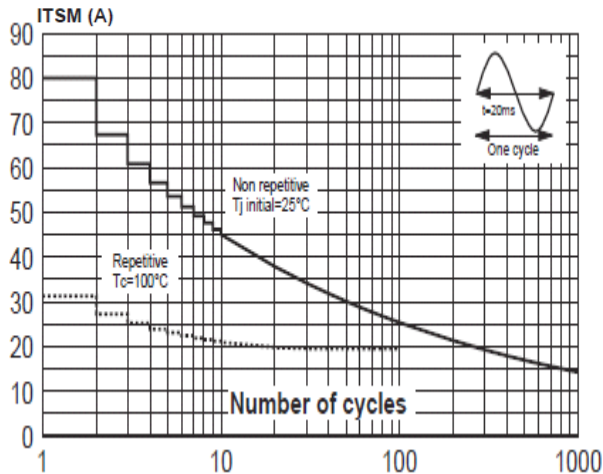


Fig.1 Maximum permissible non-repetitive peak on-state current I_{TSM} , versus number of cycles, for sinusoidal currents, $f = 50$ Hz.

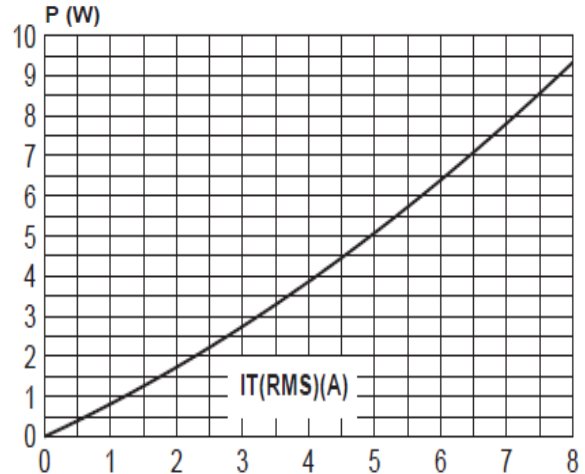


Fig.2 Maximum on-state dissipation, P_{tot} , versus rms on-state current, $I_{T(RMS)}$, where $\alpha =$ conduction angle.

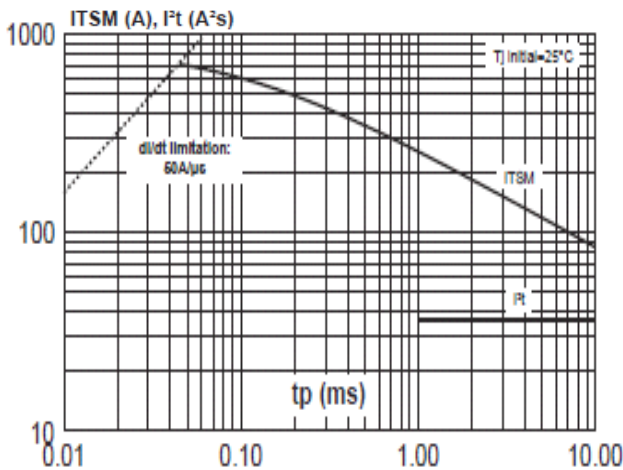


Fig.3 Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms, and corresponding value of I^2t .

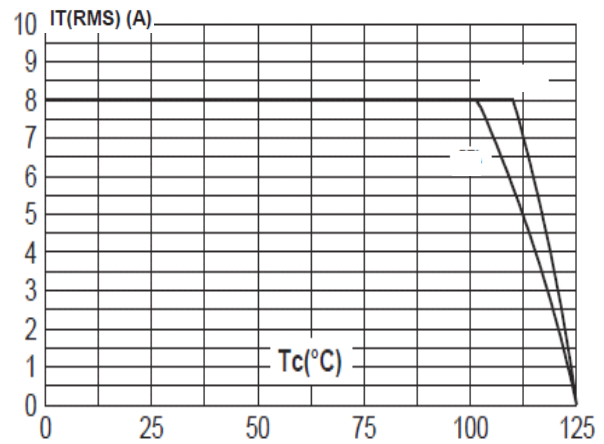


Fig.4 Maximum permissible rms current $I_{T(RMS)}$, versus lead temperature T_{lead} .

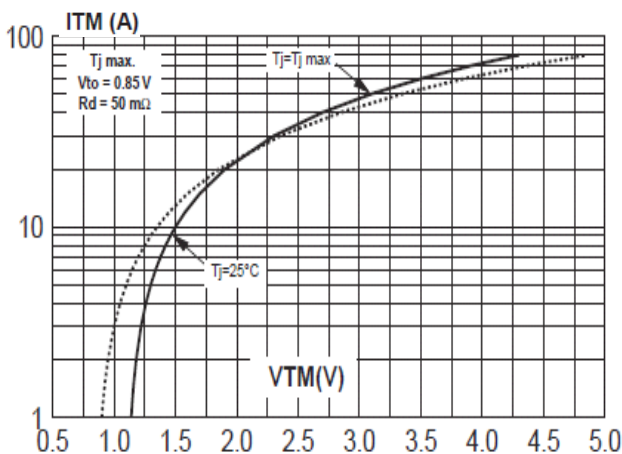


Fig.5 Typical and maximum on-state characteristic.

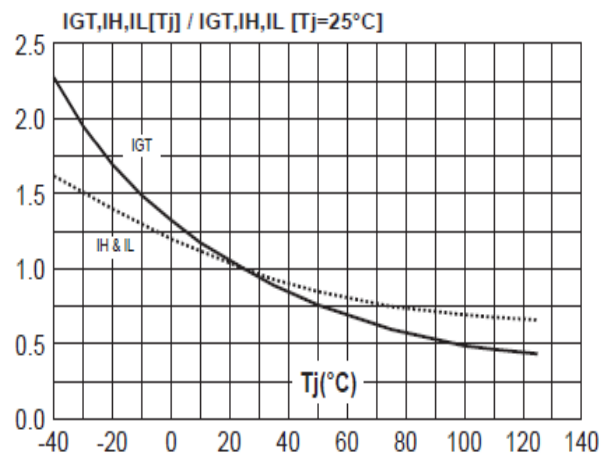


Fig.6 Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

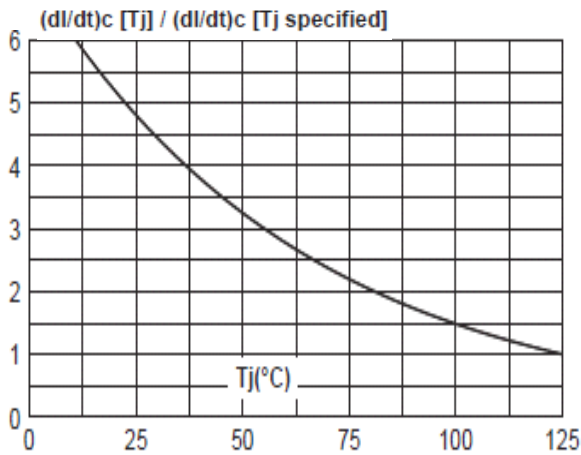


Fig.7 : Relative variation of critical rate of decrease of main current versus junction temperature.

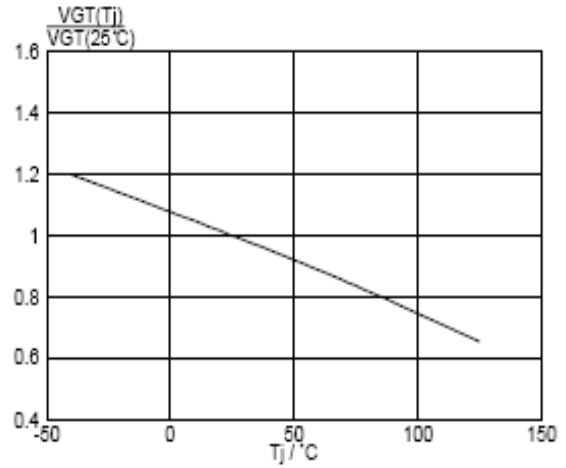


Fig.8 . Normalised gate trigger voltage $V_{GT}(Tj)/V_{GT}(25^{\circ}C)$, versus junction temperature Tj .

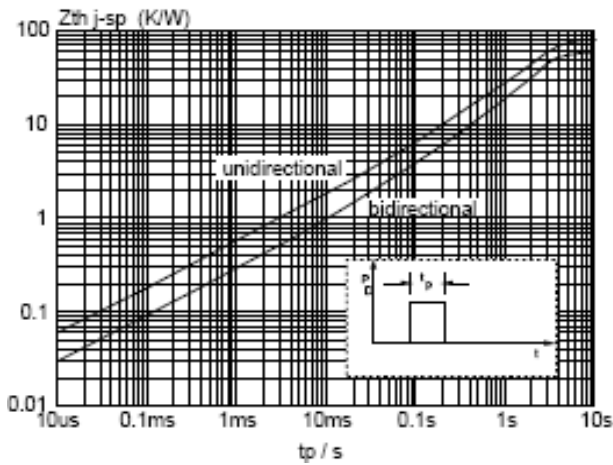


Fig.9 Transient thermal impedance $Z_{thj-lead}$, versus pulse width t_p .

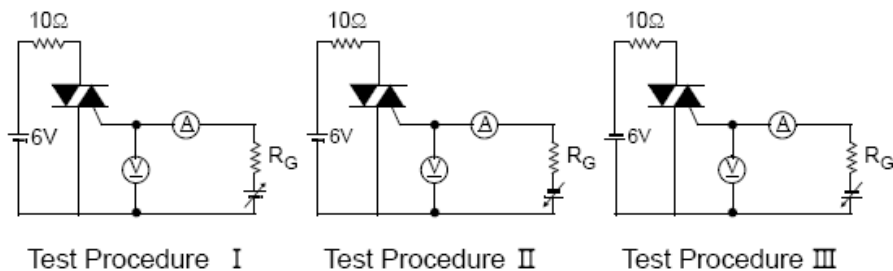


Fig.10 Gate Trigger Characteristics Test Circuit

TO-220 Package Dimension

