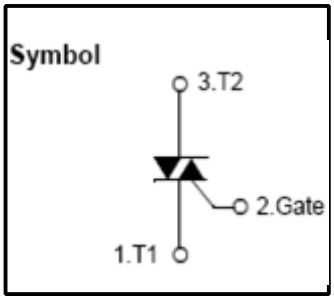
Bi-Directional Triode Thyristor

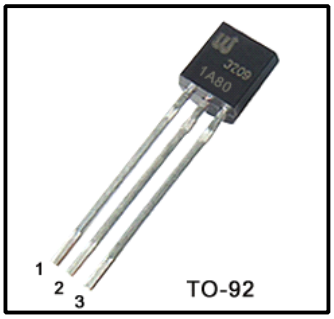
Features

- Repetitive Peak off-State Voltage:800V
- R.M.S On-State Current($I_{T(RMS)}$=1A
- Low on-state voltage: V_{TM}=1.2(typ.)@ I_{TM}
- Low reverse and forward blocking current: I_{DRM}=500uA@TC=125℃
- Low holding current: I_H=4mA (typ.)
- 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℃ unless otherwise specified)

symbol	Parameter	condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage		800	V
$I_{T(RMS)}$	R.M.S On-State Current	Tc=86℃	1	A
I_{TSM}	Surge On-State Current	Full sine wave, 20/16.7ms	12.5/13.8	A
I^2t	I^2t		1.28	A^2s
P_{GM}	Peak Gate Power Dissipation		5.0	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2.0	A
V_{GM}	Peak Gate Voltage		5	V
T_J	Operating Junction Temperature		125	℃
T_{STG}	Storage Temperature		-40~150	℃

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta Jc}$	Thermal Resistance Junction to Case	60	℃/W

Electrical Characteristics(Tc=25℃ unless otherwise noted)

Symbol	Items	conditions		Ratin			Unit
				Min	Typ	Max	
I_{DRM}	Repetitive Peak Off-State Current	$V_D=V_{DRM}$,Single Phase, Half Wave T_J=125℃		-	0.1	0.5	mA
V_{TM}	Peak On-State Voltage	I_T=35A,Inst.Measurement		-	1.2	1.5	V
I_{GT}	Gate Trigger Current	V_D=12V,R_L=100Ω	T2+G+	-	0.4	5	mA
			T2+G-	-	1.3	5	
			T2-G-	-	1.4	5	
			T2-G+	-	3.8	7	
V_{GT}	Gate Trigger Voltage	V_D=12V,R_L=100Ω	T2+G+	-	-	1.5	V
			T2+G-	-	-	1.5	
			T2-G-	-	-	1.5	
			T2-G+	-	-	1.5	
V_{GD}	Non-Trigger Gate Voltage	T_J=125℃,$V_D=V_{DRM}$,R_L=3.3KΩ		0.2	-	-	V
dv/dt	Critical Rate of Rise Off-State Voltage at Commutation	V_D=67%$V_{DRM(MAX)}$ T_J=125℃,R_{GK}=1KΩ		10	20	-	V/μs
I_H	Holding Current	V_D=12V, I_{GT}=0.1A		-	1.3	5	mA
I_L	Latching current	V_D=12V,I_GT=0.1A	T2+G+	-	1.2	5	mA
			T2+G-	-	4.0	5	
			T2-G-	-	1.0	8	
			T2-G+	-	2.5	5	
tgt	Gate controlled turn-on time	I_{TM}=1.5A,$V_{DM}=V_{DRM(MAX)}$, I_G=0.1A,dI_G/dt=5A/μs		-	2	-	μs

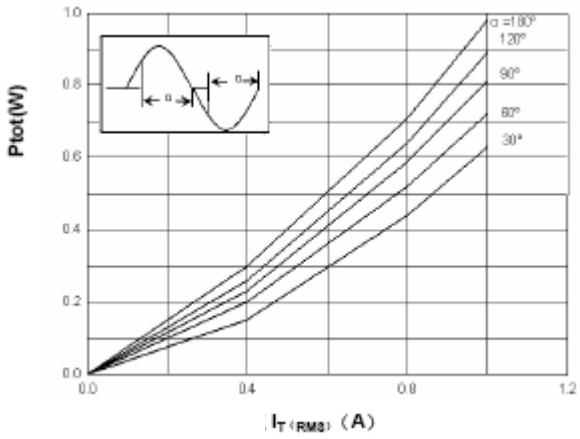


Fig1. P_{tot} - $I_{T(RMS)}$

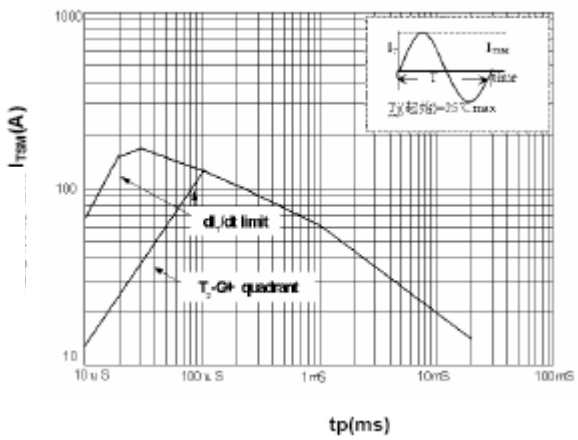


Fig.2 I_{TSM} - tP

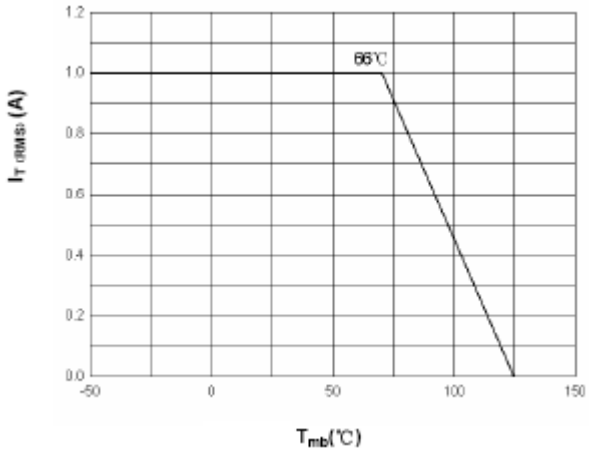


Fig.3 $I_{T(RMS)}$ - T_{mb}

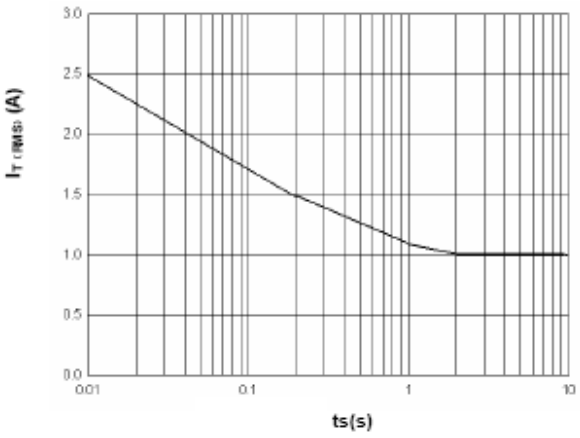


Fig.4 $I_{T(RMS)}$ - ts

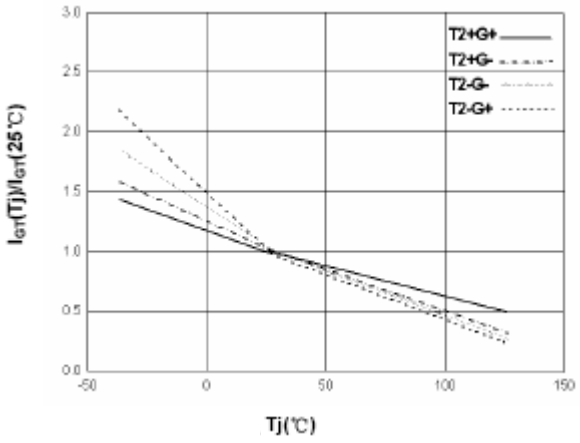


Fig.5 $I_{GT}(Tj)/I_{GT}(25℃)$ -Tj

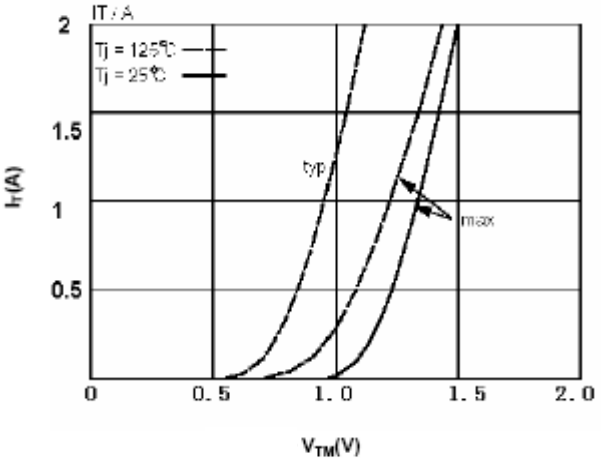


Fig.6 V_{TM} -I_T

TO-92 Package Dimension

Unit:mm