

Sensitive Gate Triac

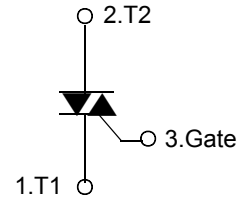
Features

- ◆ Repetitive Peak Off-State Voltage : 600V
- ◆ R.M.S On-State Current ($I_{T(RMS)} = 4 \text{ A}$)

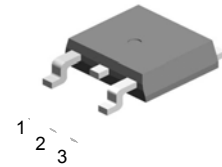
General Description

This device 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.

Symbol



TO-252



Absolute Maximum Ratings ($T_j = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage	Since wave, 50 to 60Hz	600	V
$I_{T(RMS)}$	R.M.S On-State Current	$T_j = 125^\circ\text{C}$, Full Sine wave	4.0	A
I_{TSM}	Surge On-State Current	One Cycle, 50Hz/60Hz, Peak, Non-Repetitive	25/27	A
I_t^2	I_t^2	$t_p = 10\text{ms}$	3.1	A^2s
$P_{G(AV)}$	Average Gate Power Dissipation	$T_j = 125^\circ\text{C}$	0.5	W
P_{GM}	Peak Gate Power Dissipation	$T_j = 125^\circ\text{C}$	5	W
I_{GM}	Peak Gate Current	$T_j = 125^\circ\text{C}$	2	A
T_j	Operating Junction Temperature		- 40 ~ 125	$^\circ\text{C}$
T_{STG}	Storage Temperature		- 40 ~ 150	$^\circ\text{C}$



Electrical Characteristics

Symbol	Items		Conditions	Ratings			Unit
				Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current		$V_D = V_{DRM}$, Single Phase, Half Wave $T_j = 125\text{ }^\circ\text{C}$	---	---	2.0	mA
V_{TM}	Peak On-State Voltage		$I_{TM} = 5.5\text{A}$, $t_p=380\mu\text{s}$	--	--	1.7	V
I_{GT1}^+	I	Gate Trigger Current	$V_D = 12\text{V}$, $R_L=30\ \Omega$	—	—	5	mA
I_{GT1}^-	II			—	-	5	
I_{GT3}^-	III			—	-	5	
I_{GT4}^+	IV			!!!	!!	10	
V_{GT1}^+	I	Gate Trigger Voltage	$V_D = 12\text{V}$, $R_L=30\ \Omega$	---	---	1.5	V
V_{GT1}^-	II			---	---	1.5	
V_{GT3}^-	III			—	—	1.5	
V_{GT4}^+	IV			---	---	1.5	
V_{GD}	Non-Trigger Gate Voltage		$T_j = 125\text{ }^\circ\text{C}$, $V_D=V_{DRM}$ $R_L=3.3\text{k}\Omega$	0.25	---	—	V
dv/dt	Critical Rate of Rise Off-State Voltage		$T_j = 125\text{ }^\circ\text{C}$, $V_D=2/3 V_{DRM}$	20	—	—	V/ μs
I_H	Holding Current		$I_t=0.1\text{A}$	---	---	10	mA



Fig 1. Gate Characteristics

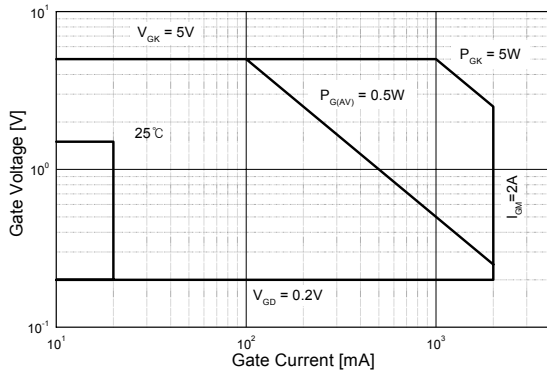


Fig 2. On-State Voltage

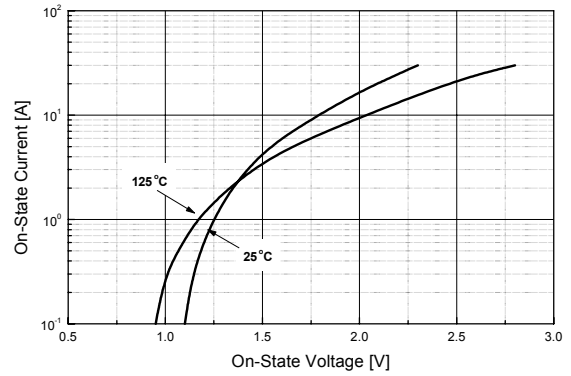


Fig 3. On State Current vs. Maximum Power Dissipation

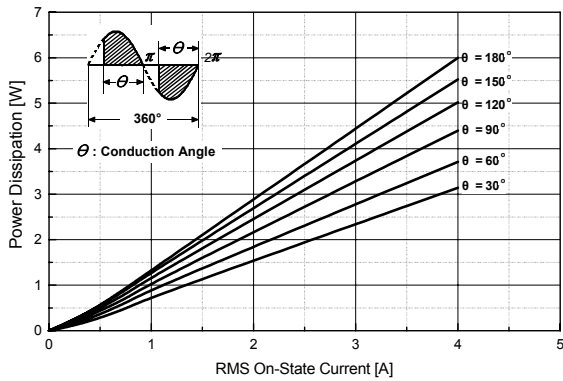


Fig 4. On State Current vs. Allowable Case Temperature

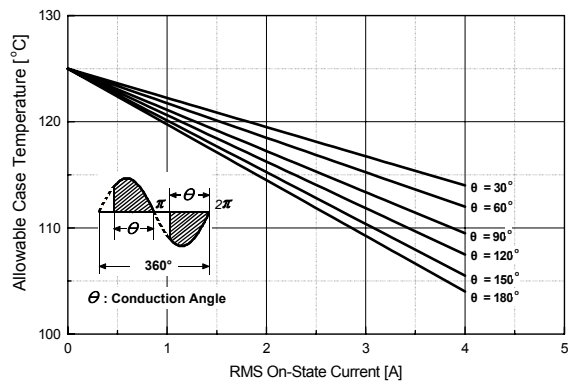


Fig 5. Surge On-State Current Rating (Non-Repetitive)

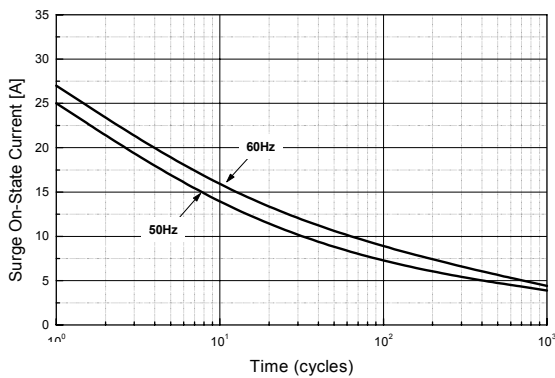


Fig 6. Gate Trigger Voltage vs. Junction Temperature

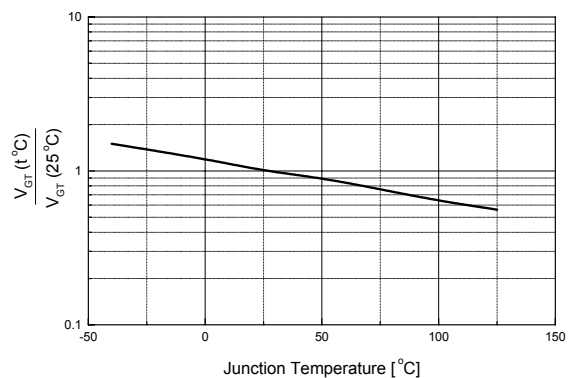




Fig 7. Gate Trigger Current vs. Junction Temperature

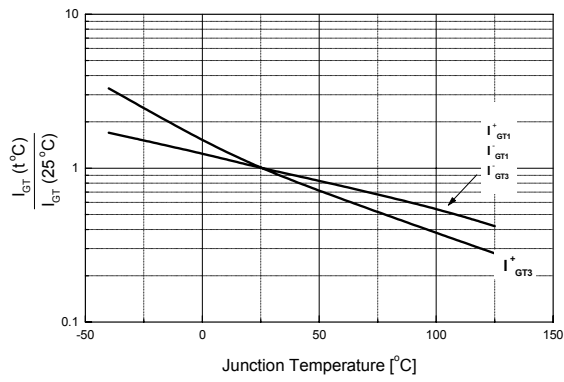
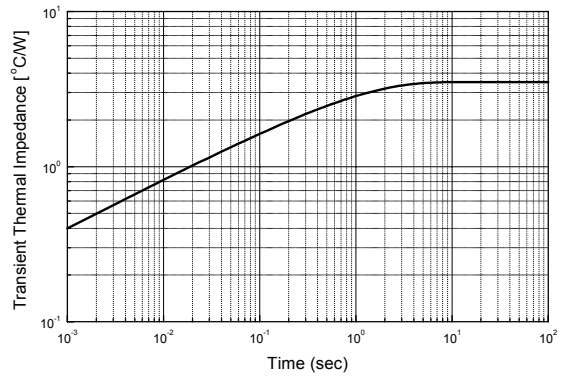


Fig 8. Transient Thermal Impedance





TD4A60S

TO-252 Package Dimension

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.20	2.40	0.087	0.094
B	1.30	1.50	0.051	0.059
b	0.55	0.65	0.022	0.026
b1	0.46	0.56	0.018	0.022
C	0.46	0.56	0.018	0.022
D	6.40	6.60	0.252	0.260
D1	5.20	5.40	0.205	0.212
E	5.40	5.60	0.212	0.220
e1	2.25	2.35	0.089	0.093
e2	4.50	4.70	0.177	0.185
L1	9.25	9.75	0.346	0.384
L2	0.95	1.45	0.037	0.057

