

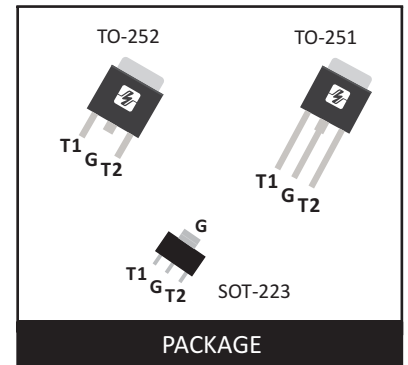
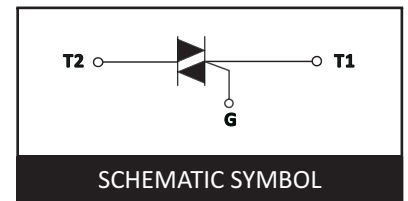
## LOGIC LEVEL BI-DIRECTIONAL TRIODE THYRISTOR

### DESCRIPTION

General purpose switching and phase control applications .These devices are intended to be interfaced directly to microcontrollers , logic integrated circuits and other low power gate trigger circuits such as fan speed and temperature modulation control , lighting control and static switching relay.

### FEATURES

- Repetitive Peak off-State Voltage: 600V
- R.M.S On-State Current( $I_{T(RMS)}=4.0A$ )
- Low on-state voltage:  $V_{TM}=1.7(\text{typ.})@ I_{TM}$
- Low reverse and forward blocking current:
- High Commutation  $dV/dt$ .



### ABSOLUTE MAXIMUM RATINGS ( $T_J = 25^{\circ}\text{C}$ UNLESS OTHERWISE SPECIFIED )

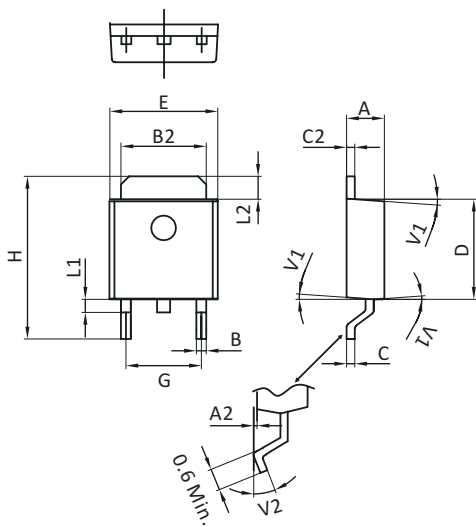
Symbol	Parameter	Condition	Ratings	Units
$V_{DRM}$	Repetitive Peak Off-State Voltage		600	V
$V_{RRM}$	Repetitive Peak Reverse Voltage		600	V
$I_{T(RMS)}$	R.M.S On-State Current	All Conduction Angle	4.0	A
$I_{TSM}$	Surge OnState Current	$F=50\text{Hz}, t_p=20\text{ms}$	25	A
$I^2t$	$I^2t$ for Fusing	$t_p=10\text{ms}$	3.10	$A^2S$
$dI/dt$	Repetitive rate of rise of on-state current after triggering	$I_T=6A$ $I_G=0.2A$ $dI_G/dt=0.2A/\mu S$	I II III IV	50 50 50 10 A/ $\mu S$
$P_{GM}$	Forward Peak Gate Power Dissipation		5.0	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation		0.5	W
$I_{GM}$	Peak Gate Current		2.0	A
$T_J$	Operating Junction Temperature		-40~125	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature		-40~150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** (  $T_C = 25\text{ }^\circ\text{C}$  UNLESS OTHERWISE NOTED )

Symbol	Items	Conditions	Ratings			Unit	
			Min.	Typ.	Max.		
$I_{DRM}$	Repetitive Peak Off-State Current	$V_D = V_{DRM}$	$T_C = 25\text{ }^\circ\text{C}$	—	—	10	uA
			$T_C = 125\text{ }^\circ\text{C}$	—	—	500	
$V_{TM}$	Peak On-State Voltage	$I_{TM} = 2.0\text{A}$	—	—	1.7	V	
$I_{GT}$	Gate Trigger Current	$V_D = 12\text{V}$	I II III	—	—	10	mA
			IV	—	—	25	
$V_{GT}$	Gate Trigger Voltage	$V_D = 12\text{V}$	—	—	1.5	V	
$V_{GD}$	Non-Trigger Gate Voltage	$V_D = 2/3V_{DRM}, T_J = 125\text{ }^\circ\text{C}$	0.2	—	—	V	
dv/dt	Critical Rate of Rise Off-State Voltage	$V_D = 2/3V_{DRM}, T_J = 125\text{ }^\circ\text{C}$	5.0	—	—	V/uS	
$I_H$	Holding Current	$I_T = 0.1\text{A}$	—	—	15	mA	
$I_L$	Latching current	$I_G = 1.2I_{GT}$	I III IV	—	—	15	mA
			II	—	—	20	

**PACKAGE MECHANICAL DATA**
**TO-252(DPAK)**

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.086	0.095
A2	0.03	0.23	0.001	0.009
B	0.55	0.65	0.021	0.026
B2	5.10	5.40	0.200	0.212
C	0.45	0.62	0.017	0.024
C2	0.48	0.62	0.019	0.024
D	6.00	6.20	0.236	0.244
E	6.40	6.70	0.252	0.264
G	4.40	4.70	0.173	0.185
H	9.35	10.10	0.368	0.397
L1	0.80TYP		0.031TYP	
L2	1.37	1.50	0.05	0.06
V1	4° TYP		4° TYP	
V2	0°	8°	0°	8°



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Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.086	0.095
A2	0.03	0.23	0.001	0.009
B	0.55	0.65	0.021	0.026
B2	5.10	5.40	0.200	0.212
C	0.45	0.62	0.017	0.024
C2	0.48	0.62	0.019	0.024
D	6.00	6.20	0.236	0.244
E	6.40	6.70	0.252	0.264
G	4.40	4.70	0.173	0.185
H	9.35	10.10	0.368	0.397
L1	0.80TYP		0.031TYP	
L2	1.37	1.50	0.05	0.06
V1	4° TYP		4° TYP	
V2	0°	8°	0°	8°

**SOT-223**

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.5 TYP	1.70	0.059TYP	0.067
A1	-	0.10	-	0.004
b	0.60	0.82	0.024	0.032
b1	2.90	3.10	0.114	0.122
C	0.24	0.35	0.009	0.014
D	6.15	6.65	0.242	0.262
E	3.30	3.70	0.130	0.146
e	2.3 TYP		0.091TYP	
e1	4.50	4.70	0.177	0.185
H	6.70	7.30	0.264	0.287
L	0.80	1.15	0.031	0.045
F	0°	10°	0°	10°

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