

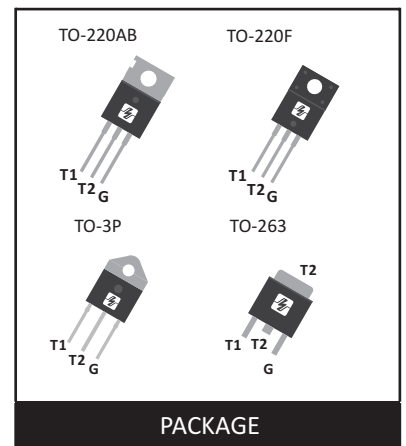
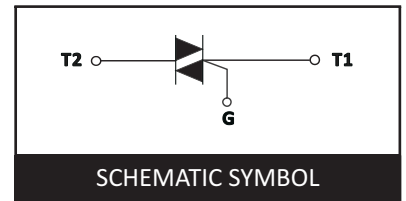
25A SERIES BI-DIRECTIONAL TRIODE THYRISTOR

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/800V
- R.M.S On-State Current ($I_{T(RMS)}=25A$)
- Low on-state voltage: $V_{TM}=1.55(Max.)@ I_{TM}$
- Low reverse and forward blocking current:
- High Commutation dV/dt .



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

Symbol	Parameter	Condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage		600/800	V
V_{RRM}	Repetitive Peak Reverse Voltage		600/800	V
$I_{T(RMS)}$	R.M.S On-State Current	All Conduction Angle	25	A
I_{TSM}	Surge OnState Current	F=50Hz, $t_p=20ms$	250	A
I^2t	I^2t for Fusing	$t_p=10ms$	340	A ² S
dI/dt	Repetitive rate of rise of on-state current after triggering	$I_G=2I_{GT}$ F=100Hz $t_r \leq 100ns$	50	A/ μ S
P_{GM}	Forward Peak Gate Power Dissipation		5.0	W
$P_{G(AV)}$	Forward Average Gate Power Dissipation		1.0	W
I_{GM}	Peak Gate Current		4.0	A
T_J	Operating Junction Temperature		-40~125	$^{\circ}C$
T_{STG}	Storage Temperature		-40~150	$^{\circ}C$

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

Symbol	Items	Conditions	Ratings		Unit	
			CW	BW		
I_{DRM}	Repetitive Peak Off-State Current	$V_D = V_{DRM}$	$T_C = 25\text{ }^\circ\text{C}$	≤ 5		μA
			$T_C = 125\text{ }^\circ\text{C}$	≤ 3000		
V_{TM}	Peak On-State Voltage	$I_{TM} = 35\text{A}$		≤ 1.55		V
I_{GT}	Gate Trigger Current	$V_D = 12\text{V}$	I II III	≤ 50	≤ 50	mA
			IV	-	≤ 100	
V_{GT}	Gate Trigger Voltage	$V_D = 12\text{V}$		≤ 1.3		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	$V_{DRM}, V_D = 2/3V, T_J = 125\text{ }^\circ\text{C}$		≥ 200	≥ 1000	V/ μS
I_H	Holding Current	$I_T = 0.1\text{A}$		≤ 50	≤ 75	mA
I_L	Latching current	$I_G = 1.2I_{GT}$	I III	≤ 70	≤ 80	mA
			II	≤ 80	≤ 100	
			IV	-	-	

PACKAGE MECHANICAL DATA
TO-220AB

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.56	4.83	0.140	0.190
A1	2.03	2.92	0.080	0.115
b	0.38	1.02	0.015	0.040
b1	1.14	1.78	0.045	0.070
C	0.51	1.40	0.020	0.055
C1	0.36	0.61	0.014	0.024
D	9.65	10.67	0.380	0.420
E	14.22	16.51	0.560	0.650
e	2.54BSC		0.10BSC	
F	2.54	3.05	0.100	0.120
G	3.53	3.90	0.139	0.154
H	12.70	14.73	0.500	0.580
L	5.84	6.86	0.230	0.270
L1	-	6.35	-	0.250

TO-220F

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
A1	2.60	2.80	0.102	0.110
A2	2.45	2.55	0.096	0.100
b	0.50	0.75	0.020	0.030
b1	1.10	1.40	0.043	0.055
C	0.50	0.70	0.020	0.028
D	9.70	10.30	0.382	0.406
E	14.70	15.30	0.579	0.602
e	2.54TYP		0.10TYP	
e1	4.88	5.28	0.192	0.208
H	27.40	28.60	1.079	1.126
L	2.50	3.00	0.098	0.118
L1	6.70	6.90	0.264	0.272
L2	3.60	3.80	0.142	0.150

TO-263

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.47	4.67	0.176	0.184
A1	0	0.15	0	0.006
B	1.12	1.42	0.044	0.056
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.31	0.53	0.012	0.021
c1	1.17	1.37	0.046	0.054
D	10.01	10.31	0.394	0.406
E	8.5	8.9	0.335	0.350
e	2.54Typ		0.10Typ	
e1	4.98	5.18	0.196	0.204
L	14.94	15.5	0.588	0.610
L1	4.95	5.45	0.195	0.215
L2	2.34	2.74	0.092	0.108
F	0°	8°	0°	8°
V	5.60Ref.		0.22 Ref.	

TO-3P

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.40	4.60	0.173	0.181
B	1.45	1.55	0.057	0.061
C	14.35	15.60	0.565	0.614
D	0.50	0.75	0.020	0.028
E	2.70	2.90	0.106	0.114
F	15.80	16.50	0.622	0.650
G	20.40	21.10	0.815	0.831
H	15.10	15.50	0.594	0.610
J	5.40	5.65	0.213	0.222
K	1.20	1.40	0.047	0.055
L	1.35	1.50	0.053	0.059
P	2.80	3.00	0.110	0.118
R	4.60TYP		0.181TYP	

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