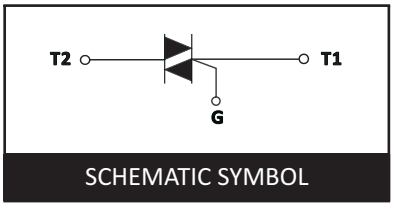
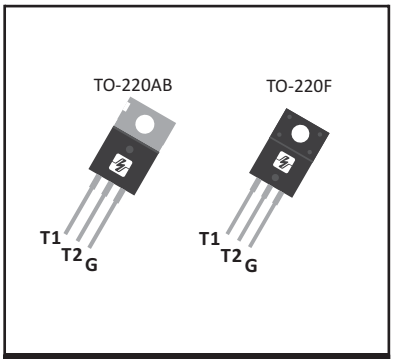
12A SERIES
BI-DIRECTIONAL TRIODE THYRISTOR



SCHEMATIC SYMBOL



PACKAGE

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($I_{T(RMS)}$=12A)
- 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°C UNLESS OTHERWISE SPECIFIED)

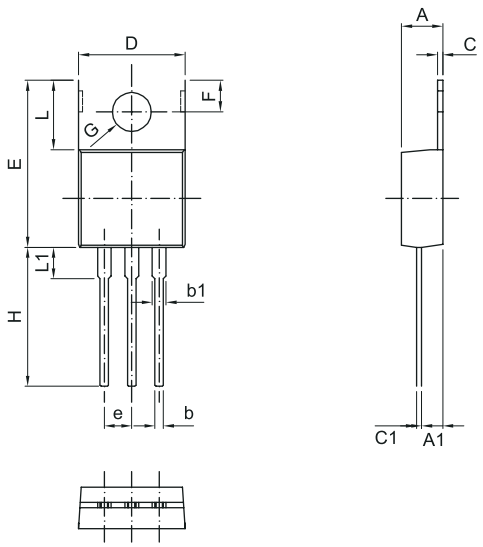
Symbol	Parameter	Condition	Ratings	Units
V_{DRM}	Repetitive Peak Off-State Voltage		600/800	V
V_{RRM}	Repetitive Peak Reverse Voltage		600/800	V
$I_{T(RMS)}$	R.M.S On-State Current	All Conduction Angle	12	A
I_{TSM}	Surge On-State Current	F=50Hz, tp=20ms	120	A
I^2t	I^2t for Fusing	tp= 10ms	55	A^2S
dI/dt	Repetitive rate of rise of on-state current after triggering	I_G=2I_{GT} F=100Hz tr≤100nS	78	A/uS
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	°C
T_{STG}	Storage Temperature		-40~150	°C

ELECTRICAL CHARACTERISTICS (TC = 25 °C UNLESS OTHERWISE NOTED)

Symbol	Items	Conditions		Ratings					Unit
				SW	CW	BW	C	B	
I_{DRM}	Repetitive Peak Off-State Current	$V_D = V_{DRM}$	T_C = 25 °C	≤5					uA
			T_C = 125 °C	≤1000					
V_{TM}	Peak On-State Voltage	I_{TM} = 14A		≤1.55					V
I_{GT}	Gate Trigger Current	V_D = 12V	Ⅰ Ⅱ Ⅲ	≤10	≤25	≤50	≤25	≤50	mA
			Ⅳ	-	-	-	≤50	≤100	
V_{GT}	Gate Trigger Voltage	V_D=12V		≤1.3					V
V_{GD}	Non-Trigger Gate Voltage	V_D =2/3V_{DRM}, T_J = 125°C		≥0.2					V
dv/dt	Critical Rate of Rise Off-State Voltage	V_D = 2/3V_{DRM}, T_J = 125°C		≥40	≥200	≥1000	≥200	≥400	V/uS
I_H	Holding Current	I_T =0.1A		≤15	≤35	≤50	≤25	≤50	mA
I_L	Latching current	I_G=1.2I_{GT}	Ⅰ Ⅲ	≤25	≤50	≤70	≤40	≤50	mA
			Ⅱ	≤30	≤60	≤80	≤80	≤100	
			Ⅳ	-	-	-	≤40	≤50	

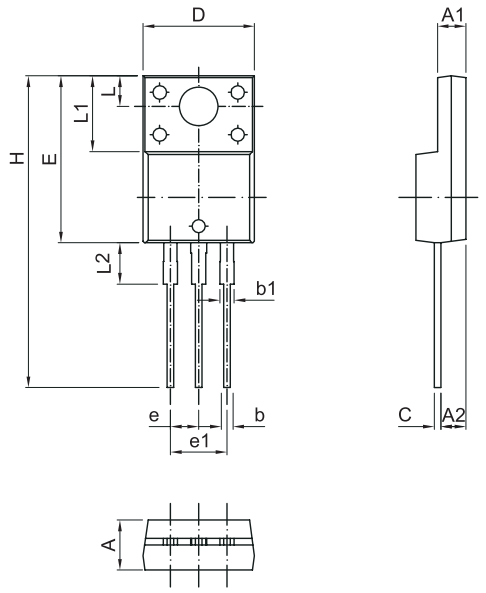
PACKAGE MECHANICAL DATA

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

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