

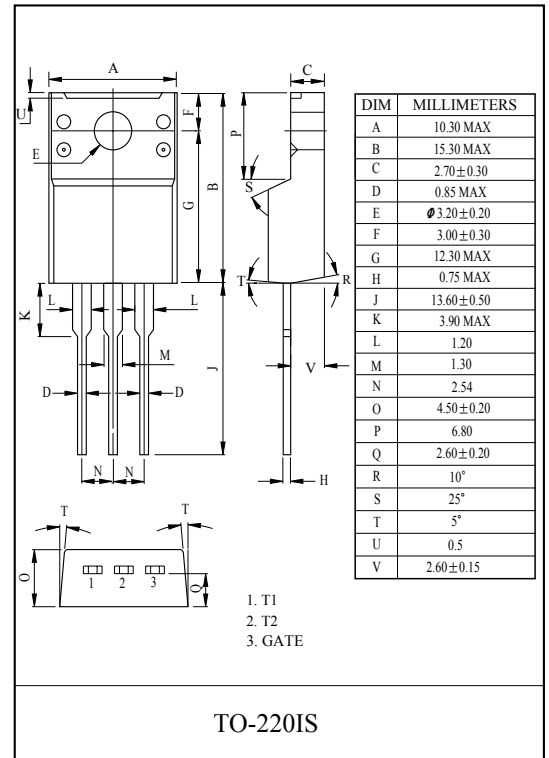
AC POWER CONTROL APPLICATION.

FEATURES

- Repetitive Peak Off-state Voltage : $V_{DRM}=600V$.
- R.M.S On-State Current : $I_{T(RMS)}=12A$.
- High Commutaing (dv/dt)
- Isolation Voltage : $V_{ISOL}=1500V$ AC
(UL Recognized : E166398)

APPLICATIONS

- Switching Mode Power Supply
- Speed Control of Small Motors
- Solid State Relay
- Light Dimmer
- Washing Machine
- Temperature Control of Heater



MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Non-Repetitive Peak Off-state Voltage	V_{DSM}	700	V
Repetitive Peak Off-state Voltage	V_{DRM}	600	V
R.M.S On-state Current (Full Sine Waveform Tc=77°C)	$I_{T(RMS)}$	12	A
Peak One Cycle Surge On-state Current (Non-Repetitive)	I_{TSM}	120 (50Hz 1 Cycle) 132 (60Hz 1 Cycle)	A
I ² t Limit Value (1mS ≤ t ≤ 10mS)	I^2t	72	A ² S
Peak Gate Power Dissipation	P_{GM}	5	W
Average Gate Power Dissipation	$P_{G(AV)}$	0.5	W
Peak Gate Voltage	V_{GM}	10	V
Peak Gate Current	I_{GM}	2	A
Junction Temperature	T_j	-40 ~ 125	°C
Storage Temperature Range	T_{stg}	-40 ~ 125	°C
Isolation Voltage (Ac, t=1min.)	V_{ISOL}	1500	V

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ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT		
Repetitive Peak Off-state Current	I_{DRM}	$V_{DRM}=\text{Rated}$	-	-	20	μA		
Gate Trigger Voltage	I II III IV	V_{GT}	$V_D=12\text{V},$ $R_L=20\Omega$	T ₂ (+), Gate(+)	-	-	1.5	V
				T ₂ (+), Gate(-)	-	-	1.5	
				T ₂ (-), Gate(-)	-	-	1.5	
				T ₂ (-), Gate(+)	-	-	-	
Gate Trigger Current	I II III IV	I_{GT}	$V_D=12\text{V},$ $R_L=20\Omega$	T ₂ (+), Gate(+)	-	-	30	mA
				T ₂ (+), Gate(-)	-	-	30	
				T ₂ (-), Gate(-)	-	-	30	
				T ₂ (-), Gate(+)	-	-	-	
Peak On-State Voltage	V_{TM}	$I_{TM}=17\text{A}$	-	-	1.5	V		
Gate Non-Trigger Voltage	V_{GD}	$V_D=\text{Rated}, T_c=125^\circ\text{C}$	0.2	-	-	V		
Holding Current	I_H	$V_D=12\text{V}, I_{TM}=1\text{A}$	-	-	50	mA		
Critical Rate of Rise of Off-state Voltage	d_v/d_t	$T_j=125^\circ\text{C}, V_{DRM}=\text{Rated}$ Exponential Rise	-	300	-	V/ μS		
Critical Rate of Rise of Off-state Voltage at commutation	$(d_v/d_t)C$	$T_j=125^\circ\text{C},$ $(di/dt)C=-6.5\text{A/mS}, V_D=2/3V_{DRM}$	10	-	-	V/ μS		
Thermal Resistance	$R_{th(j-c)}$	Junction to Case, AC	-	-	3.0	$^\circ\text{C/W}$		

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