

T2300, T2301, T2302 Series

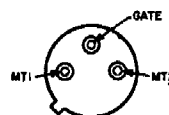
2.5-A Sensitive-Gate Silicon Triacs

Modified TO-205 Package for AC Power Switching

Features:

- 800V, 125 Deg. C T_J Operating
- High dv/dt and di/dt Capability
- Low Switching Losses
- High Pulse Current Capability
- Low Forward and Reverse Leakage
- Sipos Oxide Glass Multilayer Passivation System
- Advanced Unisurface Construction
- Precise Ion Implanted Diffusion Source

TERMINAL DESIGNATIONS



Modified TO-205

MAXIMUM RATINGS, Absolute-Maximum Values:

	3 mA Gate	T2300F	T2300A	T2300B	T2300D	T2300M	T2300N	
	4 mA Gate	T2301F	T2301A	T2301B	T2301D	T2301M	T2301N	
	10 mA Gate	T2302F	T2302A	T2302B	T2302D	T2302M	T2302N	
V_{DRM}^{Δ} : $T_J = -40$ to 125°C	50	100	200	400	600	800		V
$I_T(\text{RMS})$: $T_C = 95^{\circ}\text{C}$				2.5				A
For other conditions				See Figs. 3,4,5				
I_{TSM} : For one cycle of applied principal voltage								
60 Hz (sinusoidal)				25				A
50 Hz (sinusoidal)				21				A
More than one cycle of applied principal voltage				See Figs. 6,7				
di/dt : $V_D = V_{DRM}$, $I_G = 50$ mA, $t_r = 0.1$ μs				100				A/ μs
I^2t [At T_C shown for $I_T(\text{RMS})$]:								
$t = 20$ ms				4.3				A ² s
$= 2.5$ ms				2				A ² s
$= 0.5$ ms				1				A ² s
I_{GTM}^{Δ} : For 1 μs max.				1				A
P_{GM} : Peak (For 1 μs max., $I_{GTM} \leq 1$ A(peak)				10				W
$P_{G(AVG)}$:								
$T_C = 60^{\circ}\text{C}$				0.15				W
$T_A = 25^{\circ}\text{C}$				0.05				W
T_{stg}^{Δ}				-40 to 150				$^{\circ}\text{C}$
T_C^{Δ}				-40 to 125				$^{\circ}\text{C}$
T_J^{Δ} :								
During soldering for 10 s maximum at distance $\geq 1/16$ in. (1.58 mm) from seating plane				225				$^{\circ}\text{C}$

Δ For either polarity of main terminal 2 voltage (V_{MT2}) with reference to main terminal 1.

Δ For either polarity of gate voltage (V_G) with reference to main terminal 1.

Δ For temperature measurement reference point, see Dimensional Outlines.

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T2300, T2301, T2302 Series

ELECTRICAL CHARACTERISTICS

At Maximum Ratings Unless Otherwise Specified and at Indicated Case Temperature (T_C)

CHARACTERISTIC	LIMITS			UNITS
	FOR ALL TYPES Except as Specified			
	Min.	Typ.	Max.	
I _{DROM} [▲] : Gate open, T _J = 125°C, V _{DROM} = Max. rated value	—	0.2	0.75	mA
V _{TM} [▲] : i _T =10 A(peak), T _C =25°C	—	1.7	2.2	V
I _{HO} [▲] : Gate open, Initial principal current=150 mA (dc), v _D =12 V, T _C =25°C (T2300, T2301/series) (T2302/series)	(See Figs. 9 & 10) — —	2 7	5 15	mA
dv/dt (Commutating) [▲] : v _D =V _{DROM} , I _{T(RMS)} =2.5 A, commutating di/dt=1.33 A/ms, gate unenergized, T _C =70°C (See Fig. 14)	0.5	—	—	V/μs
dv/dt (Off-state) [▲] : v _D =V _{DROM} , exponential voltage rise, gate open, T _O =115°C(T2300, T2301 series) T _O =125°C(T2302 series)	3 6	5 10	— —	V/μs
I _{GT} [▲] : v _D =12 V dc, R _L =30 Ω, T _C =25°C (See Figs. 11 & 12)				
Mode I ⁺ V _{MT2} positive T2300 series T2301 series T2302 series III ⁻ negative T2300 series T2301 series T2302 series I ⁻ positive T2300 series T2301 series T2302 series III ⁺ negative T2300 series T2301 series T2302 series	V _G positive negative negative positive positive	— —		

[▲] For either polarity of main terminal 2 voltage (V_{MT2}) with reference to main terminal 1.

• For either polarity of gate voltage (V_G) with reference to main terminal 1.