ELECTRONICS, INC.
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NTE308P
Integrated Thyristor/Rectifier (ITR)
TV Horizontal Deflection & Commutating Switch

Absolute Maximum Ratings:

Repetitive Peak Forward Off–State Voltage (T_C = +85°C, Note 1), V_{DRM} 750V
Repetitive Peak Reverse Voltage (T_C = +85°C, Note 1), V_{RRM} 700V
Mean On–State Current (T_C = +60°C, 50Hz Sine Wave, Conduction Angle of 180°), I_O, $I_{T(AV)}$
Rectifier 3.0A
SCR 5.0A
RMS On–State Current (T_C = +60°C, 50Hz Sine Wave, Conduction Angle of 180°), $I_{F(RMS)}$, $I_{T(RMS)}$
Rectifier 4.5A
SCR 8.0A
Surge Current (T_C = +85°C, One Full Cycle), I_{TSM}, I_{FSM}
60Hz Sinusoidal 80A
50Hz Sinusoidal 70A
Rate of Change of On–State Current (V_D = 700V, I_{GT} = 50mA, t_r = 0.1µs), di/dt 200A/µs
Peak Forward Gate Power (Negative Gate Bias = –10V, 10µs max, Note 2), P_{GM} 25W
Peak Reverse Gate Power (Negative Gate Bias = –10V, 10µs max, Note 2), P_{RGM} 25W
Operating Case Temperature Range, T_C . . . . . –40° to +85°C
Storage Temperature Range, T_{stg} . . . . . –40° to +150°C
Maximum Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 2.5°C/W
Lead Temperature (During Soldering, 1/8” from case, 10sec max), T_L . . . . . +225°C

Note 1. These values do not apply if there is a positive gate signal. Gate must be open or negatively biased.

Note 2. Any product of gate current and gate voltage which results in a gate power less than the maximum is permitted, provided that the maximum reverse gate bias (as specified) is not exceeded.

Electrical Characteristics: (T_C = +25°C “Maximum Ratings” unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Peak Forward Blocking Current	I_{DRM}	V_D = 700V, T_C = +85°C	–	0.5	1.5	mA
Instantaneuos Voltage Rectifier	V_F	I_F = 10A	–	1.35	2.0	V
SCR	V_T	I_T = 30A	–	1.75	3.0	V
Gate Trigger Current, Continuous DC	I_{GT}	Anode Voltage = 12V, R_L = 30Ω	–	15	45	mA
Gate Trigger Voltage, Continuous DC	V_{GT}	Anode Voltage = 12V, R_L = 30Ω	–	1.8	4.0	V

Electrical Characteristics (Cont'd): (T_C = +25°C "Maximum Ratings" unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Rate of Rise of Off–State Voltage	dv/dt	V_D = 700V, V_G = –2.5V, T_C = +85°C	1000	–	–	V/μs
Reverse Recovery Time (Rectifier Only)	t_{rr}	I_{FM} = 10A, $-di_F/dt$ = –10A/μs, t_p = 3μs	0.5	0.7	–	μs
Circuit Commutated Turn–Off Time	t_q	Minimum Negative Gate Bias = –2.5V, dv/dt = 400V/μs, T_C = +80°C, Note 3	–	–	4.2	μs

Note 3. Turn–off time increases with temperature; therefore, case temperature must not exceed the level indicated.