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NTE1609
Integrated Circuit
Instrumentation Timer

Description:

The NTE1609 is a monolithic integrated circuit in a 7–Lead SIP type package consisting of a timer developed for use in measurement instrumentation, control equipment and digital data procesing equipment. This device is designed to require few externally connected components.

Features:

- Wide Timing Range from Microseconds to Several Hours
- A Load Current of 200mA is Achievable
- Capable of Directly Driving DTL and TTL Circuits
- Good Temperatue Stability (Typically 50ppm/°C)
- Good Supply Voltage Stability (Typically 0.1%/V)

Applications:

- Delay Timers
- Monostable Multivibrators
- Astable Multivibrators
- Pulse Generators
- Dividers
- Sequence Timers

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Supply Voltage, V_{CC} 18V
Power Dissipation, P_D 500mW
Derate Above 25°C . . . . . 5.0mW/°C
Operating Temperature Range, T_{opr} . . . . . –10° to +75°C
Storage Temperature Range, T_{stg} . . . . . –55° to +125°C

Electrical Charactristics: (T_A = +25, V_{CC} = +5V, +15V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		4.5	–	16.0	V
Supply Current	I_{CC1}	V_{CC} = 5V, R_L = ∞	–	3	7	mA
	I_{CC2}	V_{CC} = 15V, R_L = ∞	–	10	15	mA

Electrical Charactristics (Cont'd): (T_A = +25, V_{CC} = +5V, +15V unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Monostable Timing Accuracy	$T_{ERR\ (M)}$	R_A = 1kΩ to 100kΩ, C = 0.1μF	–	1	–	%
Monostable Timing Temperature Coefficient	$T_{DT\ (M)}$	R_A = 1kΩ to 10kΩ, C = 0.1μF	–	50	–	ppm/°C
Monostable Timing Supply Regulation	$T_{DS\ (M)}$	R_A = 1kΩ to 10kΩ, C = 0.1μF	–	0.1	–	%/V
Astable Timing Accuracy	$T_{ERR\ (A)}$	$R_A = R_B$ = 1 kΩ to 100kΩ, C = 0.1μF	–	2.5	–	%
Astable Timing Temperature Coefficient	$T_{DT\ (A)}$	$R_A = R_B$ = 1 kΩ to 10kΩ, C = 0.1μF	–	150	–	ppm/°C
Astable Timing Supply Regulation	$T_{DS\ (A)}$	$R_A = R_B$ = 1 kΩ to 100kΩ, C = 0.1μF	–	0.3	–	%/V
Threshold Voltage	V_{TH}		–	2/3	–	x V_{CC}
Threshold Current	I_{TH}		–	0.1	0.25	μA
Trigger Voltage	V_T		–	1/3	–	x V_{CC}
Trigger Current	I_T		–	0.5	–	μA
Reset Voltage	V_R		–	0.7	1.0	V
Reset Current	I_R		–	0.1	–	mA
Control Voltage	V_{CR1}		2.60	3.33	4.00	V
	V_{CR2}		9	10	11	V
Low–Level Output Voltage	V_{OL1}	V_{CC} = 5V, I_{sink} = 5mA	–	0.25	0.35	V
	V_{OL2}	V_{CC} = 15V, I_{sink} = 10mA	–	0.10	0.25	V
	V_{OL3}	V_{CC} = 15V, I_{sink} = 50mA	–	0.40	0.75	V
	V_{OL4}	V_{CC} = 15V, I_{sink} = 100mA	–	2.0	2.5	V
	V_{OL5}	V_{CC} = 15V, I_{sink} = 200mA	–	2.5	–	V
High–Level Output Voltage	V_{OH1}	V_{CC} = 5V, I_{source} = 100mA	2.75	3.30	–	V
	V_{OH2}	V_{CC} = 15V, I_{source} = 100mA	12.75	13.30	–	V
	V_{OH3}	V_{CC} = 15V, I_{source} = 200mA	–	12.50	–	V
Output Rise Time	t_r		–	100	–	ns
Output Fall Time	t_f		–	100	–	ns

Pin Connection Diagram
(Front View)