



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

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 processing 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 Temperature 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: ($T_A = +25^\circ\text{C}$ 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 $+75^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$

Electrical Characteristics: ($T_A = +25$, $V_{CC} = +5\text{V}$, $+15\text{V}$ unless otherwise specified)

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Monostable Timing Accuracy	$T_{ERR (M)}$	$R_A = 1k\Omega$ to $100k\Omega$, $C = 0.1\mu F$	–	1	–	%
Monostable Timing Temperature Coefficient	$T_{DT (M)}$	$R_A = 1k\Omega$ to $10k\Omega$, $C = 0.1\mu F$	–	50	–	ppm/ $^{\circ}C$
Monostable Timing Supply Regulation	$T_{DS (M)}$	$R_A = 1k\Omega$ to $10k\Omega$, $C = 0.1\mu F$	–	0.1	–	%/V
Astable Timing Accuracy	$T_{ERR (A)}$	$R_A = R_B = 1k\Omega$ to $100k\Omega$, $C = 0.1\mu F$	–	2.5	–	%
Astable Timing Temperature Coefficient	$T_{DT (A)}$	$R_A = R_B = 1k\Omega$ to $10k\Omega$, $C = 0.1\mu F$	–	150	–	ppm/ $^{\circ}C$
Astable Timing Supply Regulation	$T_{DS (A)}$	$R_A = R_B = 1k\Omega$ to $100k\Omega$, $C = 0.1\mu F$	–	0.3	–	%/V
Threshold Voltage	V_{TH}		–	2/3	–	$\times V_{CC}$
Threshold Current	I_{TH}		–	0.1	0.25	μA
Trigger Voltage	V_T		–	1/3	–	$\times V_{CC}$
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}	$V_{CC} = 15V, I_{source} = 100mA$	12.7 5	13.3 0	–	V
	V_{OH3}	$V_{CC} = 15V, I_{source} = 200mA$	–	12.5 0	–	V
Output Rise Time	t_r		–	100	–	ns
Output Fall Time	t_f		–	100	–	ns

Pin Connection Diagram
(Front View)

