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NTE955M
NTE955S
NTE955SM
Integrated Circuit
Timing Circuit

Description:

The NTE955 series timing circuit is a highly stable controller capable of producing accurate time delays, or oscillation. Additional terminals are provided for triggering or resetting if desired. In time delay mode of operation, the time is precisely controlled by one external resistor and capacitor. For astable operation as an oscillator, the free running frequency and the duty cycle are both accurately controlled with two external resistors and one capacitor. The circuit may be triggered and reset on falling waveforms, and the output structure can source or sink up to 200mA or drive TTL circuits.

Features:

- Direct Replacement for 555 Timers
- Timing from Microseconds through Hours
- Operates in Both Astable and Monostable Modes
- Adjustable Duty Cycle
- High Current Output Can Source or Sink 200mA
- Output and Supply TTL Compatible TTL
- Temperature Stability of 0.005% per °C
- Normally “ON” or Normally “OFF” Output
- Available in Three Types:
  - NTE955M – 8–Lead DIP
  - NTE955S – 8–Lead SIP
  - NTE955SM – SOIC–8 (Surface Mount)

Applications:

- Precision Timing
- Pulse Generation
- Sequential Timing
- Time Delay Generation
- Pulse Width Modulation
- Pulse Position Modulation
- Linear Ramp Generator

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

Power Supply Voltage. V_{CC} 18V
Discharge Current (Pin7), I_7 . . . . . 200mA
Power Dissipation, P_D 625mW
Derate Above 25°C . . . . . 5mW/°C
Operating Temperature Range, T_A . . . . . 0° to +70°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C
Lead Temperature (During Soldering, 10sec), T_L . . . . . +260°C

Electrical Characteristics: (T_A = +25°C, V_{CC} = 5V to 15V unless otherwise specified)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Operating Supply Voltage Range	V_{CC}			4.5	–	16	V
Supply Current	I_{CC}	R_L = ∞, Low State, Note 2	V_{CC} = 5V	–	3.0	6.0	mA
			V_{CC} = 15V	–	10	15	mA
Timing Error		R = 1kΩ to 100kΩ, Note 3					
Initial Accuracy C = 0.1µF				–	1.0	–	%
Drift with Temperature				–	50	–	ppm/°C
Drift with Supply Voltage				–	0.1	–	%/V
Threshold Voltage	V_{TH}			–	0.667	–	x V_{CC}
Trigger Voltage	V_T	V_{CC} = 5V		–	1.67	–	V
		V_{CC} = 15V		–	5.0	–	V
Reset Voltage	V_R			0.4	0.7	1.0	V
Reset Current	I_R			–	0.1	–	mA
Threshold Current	I_{TH}	Note 4		–	0.1	0.25	µA
Discharge Leakage Current (Pin7)	I_{dis}			–	–	100	nA
Control Voltage Level	V_{CL}	V_{CC} = 5V		2.6	3.33	4.0	V
		V_{CC} = 15V		9.0	10	11	V
Output Voltage Low	V_{OL}	V_{CC} = 5V	I_{SINK} = 5mA	–	0.25	0.35	V
		V_{CC} = 15V	I_{SINK} = 10mA	–	0.1	0.25	V
			I_{SINK} = 50mA	–	0.4	0.75	V
			I_{SINK} = 100mA	–	2.0	2.5	V
			I_{SINK} = 200mA	–	2.5	–	V
Output Voltage High	V_{OH}	V_{CC} = 5V		2.75	3.3	–	V
		V_{CC} = 15V	I_{SOURCE} = 100mA	12.75	13.3	–	V
			I_{SOURCE} = 200mA	–	12.5	–	V
Rise Time of Output	t_{OLH}			–	100	–	ns
Fall Time of Output	t_{OHL}			–	100	–	ns

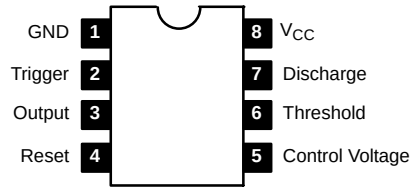
Note 2. Supply current when output is high is typically 1mA less.

Note 3. Tested at V_{CC} = 5V and V_{CC} = 15V. Monostable mode.

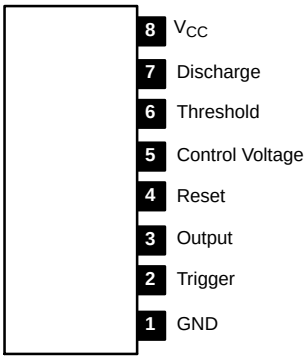
Note 4. This will determine the maximum value of $R_A = R_B$ for 15V operation. The maximum total R = 20MΩ.

Pin Connection Diagram

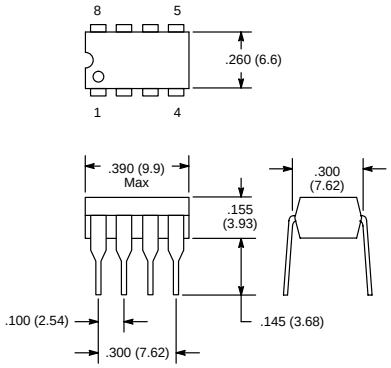
NTE955M, NTE955SM



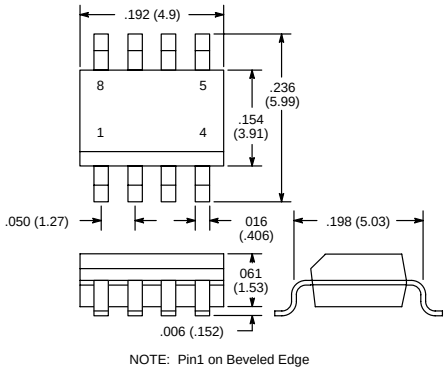
NTE955S
(Front View)



NTE955M



NTE955SM



NOTE: Pin1 on Beveled Edge

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