

DUAL TIMER

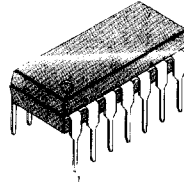
The NE556 series dual monolithic timing circuits are a highly stable controller capable of producing accurate time delays or oscillation.

The NE556 is a dual NE555. Timing is provided an external resistor and capacitor for each timing function.

The two timers operate independently of each other, sharing only V_{cc} and ground.

The circuits may be triggered and reset on falling waveforms. The output structures may sink or source 200mA.

14 DIP



FEATURES

- Replaces Two NE555 Timers
- Operates In Both Astable And Monostable Modes
- High Output Current
- TTL Compatible
- Timing From Microsecond To Hours
- Adjustable Duty Cycle
- Temperature Stability Of 0.005% Per °C

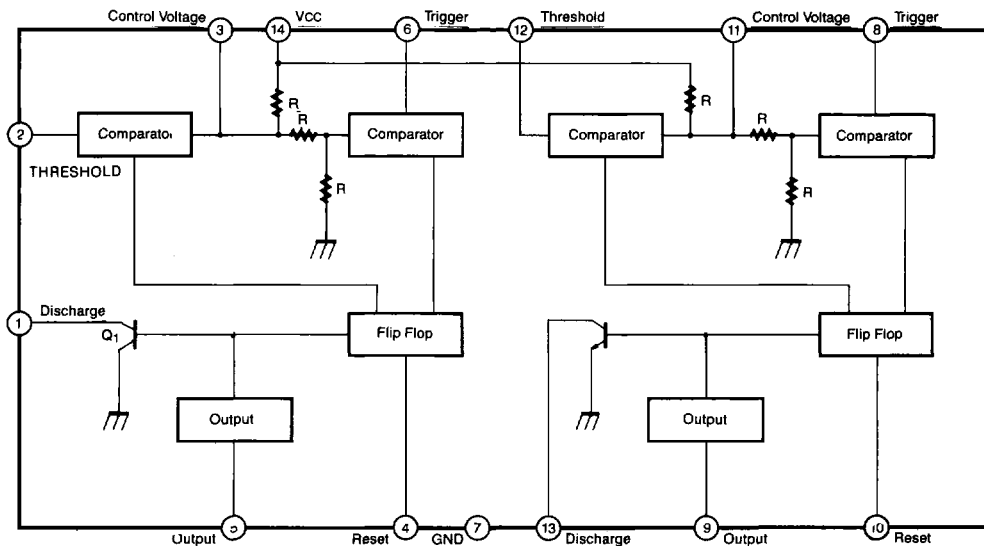
APPLICATIONS

- Precision Timing
- Pulse Shaping
- Pulse Width Modulation
- Frequency Division
- Traffic Light Control
- Sequential Timing
- Pulse Generator
- Time Delay Generator
- Touch Tone Encoder
- Tone Burst Generator

ORDERING INFORMATION

Device	Package	Operating Temperature
NE556CN	14 DIP	0 ~ +70°C

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	V _{CC}	16	V
Lead Temperature (soldering 10 sec)	T _{lead}	300	°C
Power Dissipation	P _D	600	mW
Operating Temperature Range	T _{opr}	0 ~ +70	°C
Storage Temperature Range	T _{stg}	-65 ~ +150	°C

ELECTRICAL CHARACTERISTICS

(Ta = 25°C, V_{CC} = 5 to 15V, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage	V _{CC}		4.5		16	V
*1 Supply Current (Two timers) (low state)	I _{CC}	V _{CC} = 5V, R _L = ∞ V _{CC} = 15V, R _L = ∞		5 16	12 30	mA mA
*2 Timing Error (monostable) Initial Accuracy Drift with Temperature Drift with Supply Voltage	MT ₁	R _A = 2KΩ to 100KΩ C = 0.1μF T = 1.1R _C		0.75 50 0.1		% ppm/°C %/V
Control Voltage	V _C	V _{CC} = 15V	9.0	10.0	11.0	V
		V _{CC} = 5V	2.6	3.33	4.0	V
Threshold Voltage	V _{TH}	V _{CC} = 15V	8.8	10.0	11.2	V
		V _{CC} = 5V	2.4	3.33	4.2	V
*3 Threshold Current	I _{TH}			30	250	nA
Trigger Voltage	V _{TR}	V _{CC} = 15V	4.5	5.0	5.6	V
		V _{CC} = 5V	1.1	1.6	2.2	V
Trigger Current	I _{TR}	V _T = 0V		0.01	2.0	μA
*5 Reset Voltage	V _{RE}		0.4	0.6	1.0	V
Reset Current	I _{RE}			0.03	0.6	mA
Output Voltage Low	V _{OL}	V _{CC} = 15V				
		I _{sink} = 10mA		0.1	0.25	V
		I _{sink} = 50mA		0.4	0.75	V
		I _{sink} = 100mA		2.0	3.2	V
		I _{sink} = 200mA		2.5		V
		V _{CC} = 5V				
I _{sink} = 8mA		0.25	0.35	V		
I _{sink} = 5mA		0.15	0.25	V		

ELECTRICAL CHARACTERISTICS(Ta = 25°C, V_{CC} = 5 to 15V, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage (high)	V _{OH}	V _{CC} = 15V I _{source} = 200mA	12.75	12.5		V
		I _{source} = 100mA		13.3		V
		V _{CC} = 5V I _{source} = 100mA	2.75	3.3	V	
Rise Time of Output	T _r			100	300	nsec
Fall Time of Output	T _f			100	300	nsec
Discharge Leakage Current	I _D			10	100	nA
*4 Matching Characteristics	M _{CH}			1.0	2.0	%
Initial Accuracy				10		ppm/°C
Drift with Temperature				0.2	0.5	%/V
Drift with Supply Voltage						
*2 Timing Error (astable)	MT ₂	R _A , R _B = 1kΩ to 100kΩ C = 0.1 μF V _{CC} = 15V		2.25		%
Initial Accuracy				150		ppm/°C
Drift with Temperature				0.3		%/V
Drift with Supply Voltage						

Notes:

- *1. Supply current when output is high is typically 1.0mA less at V_{CC} = 5V.
- *2. Tested at V_{CC} = 5V and V_{CC} = 15V
- *3. This will determine the maximum value of R_A + R_B for 15V operation.
The maximum total R = 20MΩ, and for 5V operation the maximum total R = 6.6MΩ.
- *4. Matching characteristics refer to the difference between performance characteristics of each timer section in the monostable mode.
- *5. As reset voltage lowers, timing is inhibited and then the output goes low.