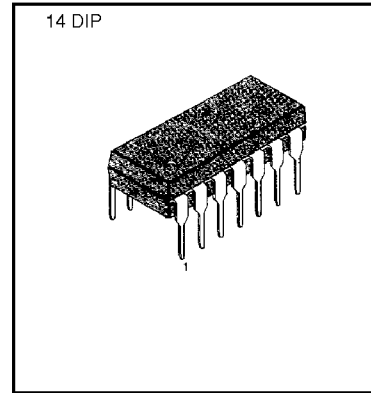


DUAL TIMER

The LM556/I series dual monolithic timing circuits are a highly stable controller capable of producing accurate time delays or oscillation. The LM556 is a dual LM555. 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 wave forms. The output structures may sink or source 200mA.

FEATURES

- Replaces Two LM555C 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



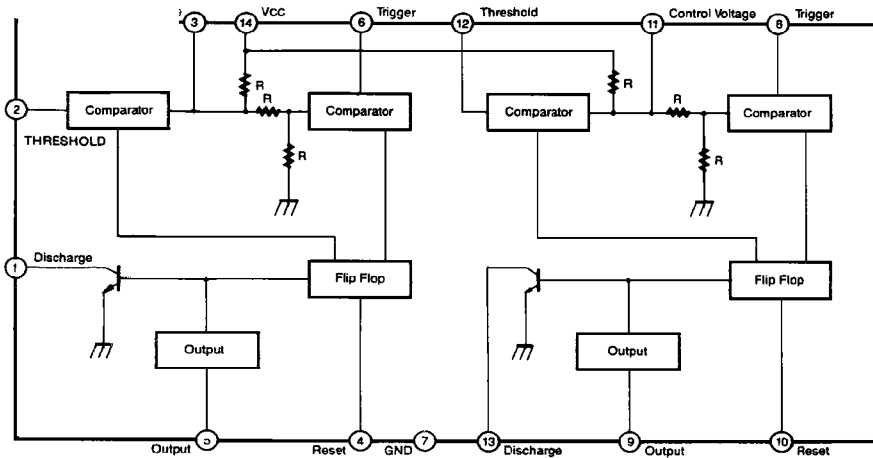
ORDERING INFORMATION

Device	Package	Operating Temperature
LM556CN	14 DIP	0 ~ + 70°C
LM556ICN	14 DIP	-40 ~ + 85°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

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Characteristic	Symbol	Value	Unit
Supply Voltage	V_{CC}	16	V
Lead Temperature (soldering 10sec)	T_{LEAD}	300	$^\circ\text{C}$
Power Dissipation	P_D	600	mW
Operating Temperature Range LM556	T_{OPR}	0 ~ + 70	$^\circ\text{C}$
LM556I		- 40 ~ + 85	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	- 65 ~ + 150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$, $V_{CC} = 5 \sim 15\text{V}$, 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}	$V_{CC} = 5\text{V}$, $R_L = \infty$		5	12	mA
		$V_{CC} = 15\text{V}$, $R_L = \infty$		16	30	mA
*2 Timing Error (monostable) Initial Accuracy	ACCUR $\Delta t/\Delta T$ Drift with Temperature Drift with Supply Voltage	$R_A = 2\text{k}\Omega$ to $100\text{k}\Omega$ $C = 0.1\mu\text{F}$ $T = 1.1\text{RC}$		0.75		%
				50		ppm/ $^\circ\text{C}$
				0.1		%/V
Control Voltage	V_C	$V_{CC} = 15\text{V}$	9.0	10.0	11.0	V
		$V_{CC} = 5\text{V}$	2.6	3.33	4.0	V
Threshold Voltage	V_{TH}	$V_{CC} = 15\text{V}$	8.8	10.0	11.2	V
		$V_{CC} = 5\text{V}$	2.4	3.33	4.2	V
*3 Threshold Voltage	I_{TH}			30	250	nA
Trigger Voltage	V_{TR}	$V_{CC} = 15\text{V}$	4.5	5.0	5.6	V
		$V_{CC} = 5\text{V}$	1.1	1.6	2.2	V
Trigger Current	I_{TR}	$V_{TH} = 0\text{V}$		0.01	2.0	μA
*5 Reset Voltage	V_{RST}		0.4	0.6	1.0	V
Reset Current	I_{RST}			0.03	0.6	mA
Low Output Voltage	V_{OL}	$V_{CC} = 15\text{V}$				
		$I_{SINK} = 10\text{mA}$		0.1	0.25	V
		$I_{SINK} = 50\text{mA}$		0.4	0.75	V
		$I_{SINK} = 100\text{mA}$		2.0	3.2	V
		$I_{SINK} = 200\text{mA}$		2.5		V
		$V_{CC} = 5\text{V}$				
	$I_{SINK} = 8\text{mA}$		0.25	0.35	V	
	$I_{SINK} = 5\text{mA}$		0.15	0.25	V	

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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
High Output Voltage	V _{OH}	V _{CC} = 15V I _{SOURCE} = 200mA		12.5		V
		I _{SOURCE} = 100mA	12.75	13.3		V
		V _{CC} = 5V I _{SOURCE} = 100mA	2.75	3.3		V
Rise Time of Output	t _R			100	300	ns
Fall Time of Output	t _F			100	300	ns
Discharge Leakage Current	I _{LKG}			10	100	nA
*4 Matching Characteristics						
Initial Accuracy	ACCUR			1.0	2.0	%
Drift with Temperature	Δt/ΔT			10		ppm/°C
Drift with Supply Voltage	Δt/ΔV _{CC}			0.2	0.5	%/V
*2 Timing Error (astable)						
Initial Accuracy	ACCUR	R _A , R _B = 1kΩ to 100kΩ C = 0.1μF		2.25		%
Drift with Temperature	Δt/ΔT	V _{CC} = 15V		150		ppm/°C
Drift with Supply Voltage				0.3		%/V

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.

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
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