



- Note 1:** Supply current when output high typically 1 mA less $V_{cc}=5$ V.
- Note 2:** Tested at $V_{cc}=5$ V and $V_{cc}=15$ V.
- Note 3:** As reset voltage lowers, then 0,4 V timing is inhibited and than the output goes low. The maximum value of reset voltage less then 1 V.
- Note 4:** This will determine the maximum value of R_A+R_B for 15 V operation. The maximum total (R_A+R_B) is 20 M Ω .
- Note 5:** No protection against excessive pin 1, 13 current is necessary providing the package dissipation rating will not be exceeded.
- Note 6:** Matching characteristics refer to the difference between performance characteristics of each timer section.
- Note 7:** For operating at elevated temperatures the device must be derated based on a +150°C maximum junction temperature. Thermal resistance is 100°C/W.



Dual Timer

Description

The AS556CN Dual timing circuit is a highly stable controller capable of producing accurate time delays or oscillation. The AS556CN is a dual AS555CN. Timing is provided by an external resistor and capacitor for 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 200 mA.

Features

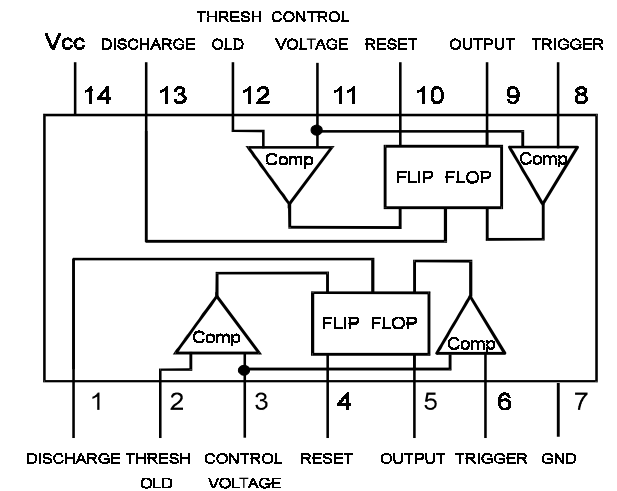
- Timing from microsecond to hours.
- Operates in both the astable and monostable modes.
- Replaces two AS555CN timers.
- Adjustable duty cycle.
- Output can source or sink 200 mA.
- Output and supply TTL compatible.
- Temperature stability of 0,005 %/°C.
- Normally on and normally off output.

Applications

- Precision timing.
- Pulse generation.
- Sequential timing.
- Time delay generation.
- Pulse width modulation.
- Pulse position modulation.
- Linear ramp generator

Connection Diagram

Package: 14-lead plastic DIP (2,50mm step, 7,5mm base)



**Absolute maximum ratings**

Supply voltage..... +16 V
 Power dissipation (Note 7) 600 mW
 Operating temperature range 0°C to +70°C
 Storage temperature range -65°C to +150°C
 Soldering (10 seconds) 260°C

Electrical characteristics

$T_{amb}=25^{\circ}\text{C}$, $V_{cc}=+5\text{V}$ to +15V unless otherwise specified

Parameter	Test conditions	Limits			Units
		Min	Typ	Max	
Supply Voltage		4,5		16,0	V
Supply Current (low state)	$V_{cc}=5\text{ V}$, no load		6,0	12,0	mA
	$V_{cc}=15\text{ V}$, no load		20,0	28,0	mA
	(Low State) (Note 1)				
Timing Error (monostable)	$R_A=100\text{ k}\Omega$				
Initial Accuracy	$C=0,1\text{ }\mu\text{F}$ (Note 2)	1,0	3,0		%
Drift with Temperature			50		ppm/°C
Accuracy over Temperature			1,5		%
Drift with Supply Voltage			0,1		%/V
Timing Error (astable)	$R_A=1\text{ k}\Omega$ to 100 kΩ				
Initial Accuracy	$C=0,1\text{ }\mu\text{F}$ (Note 2)	2,25			%
Drift with Temperature			150		ppm/°C
Accuracy over Temperature			3,0		%
Drift with Supply Voltage			0,3		%/V
Control Voltage Level and	$V_{cc}=15\text{ V}$	9,0	10,0	11,0	V
Threshold Voltage	$V_{cc}=5\text{ V}$	2,6	3,33	4,0	V
Trigger Voltage	$V_{cc}=15\text{ V}$	4,5	5,0	5,5	V
	$V_{cc}=5\text{ V}$	1,25	1,67	2,0	V
Trigger Current			0,2	2,0	μA
Reset Voltage	(Note 3)		0,7		V
Reset Current			0,1	0,6	mA

**Electrical characteristics**

$T_{amb}=25^{\circ}\text{C}$, $V_{cc}=+5\text{V}$ to +15V unless otherwise specified

Parameter	Test conditions	Limits			Units
		Min	Typ	Max	
Threshold Current	$V_{TH}=V$ -Control (Note 4)		0,03		μA
	$V_{TH}=11,2\text{V}$		0,06		μA
Pin1,13 Leakage Output High	(Note 5)		1,0	100	nA
Pin1,13 Sat					
Output Low	$V_{cc}=15\text{V}$; $I_L=15\text{mA}$		180		mV
Output Low	$V_{cc}=4,5\text{V}$; $I_L=4,5\text{mA}$		80		mV
Output Voltage Drop (low)	$V_{cc}=15\text{ V}$ $I_{sink}=10\text{mA}$		0,1		V
	$I_{sink}=50\text{mA}$		0,4		V
	$I_{sink}=100\text{mA}$		2,0	2,75	V
	$I_{sink}=200\text{mA}$		2,5		V
	$V_{cc}=5\text{ V}$ $I_{sink}=5\text{mA}$		0,1	0,25	V
Output Voltage Drop (high)	$V_{cc}=15\text{ V}$ $I_{source}=200\text{mA}$		12,5		V
	$I_{source}=100\text{mA}$	12,75	13,3		V
	$V_{cc}=5\text{ V}$ $I_{source}=100\text{mA}$	2,75	3,3		V
Rise Time of Output			100		ns
Fall Time of Output			100		ns
Matching Characteristics (Note 6)					
Initial Timing Accuracy			0,1		%
Timing Drift with Teperature			±10		ppm/°C
Drift Supply Voltage			0,2		%/V