Electrical characteristics

(T_{amb}=25°C, Ucc= +3V to +15V Unless Noted)

Parameter	Test conditions	Limits			Unit
		Min	Typ	Max	
Rise Time of Output (t_r)[4]	R_L=10MΩ, C_L=10pF, V^+=5 V		40		ns
Fall Time of Output (t_f)[4]	R_L=10MΩ, C_L=10pF, V^+=5 V		40		ns
Guaranteed Max Osc Freq (f_{max})[4]	Astable Operation	500			kHz

Note 1: *Due to the SCR structure inherent in the CMOS process used to fabricate these devices, connecting any terminal to a voltage greater than V^+ +0.3 V or less than V^- -0.3 V may cause destructive latchup. For this reason it is recommended that no inputs from external sources not operating from the same power supply be applied to the device before its power supply is established. In multiple systems, the supply of the LM7555 must be turned on first.*

Note 2: *Junction temperatures should not exceed 135°C and the power dissipation must be limited to 20 mW at 125°C. Below 125°C power dissipation may be increased to 300 mW at 25°C. Derating factor is approximately 2 mW/°C*

Note 3: *The supply current value is essentially independent of the $\overline{TRIGGER}$, THRESHOLD and $\overline{RESET}$ voltage.*

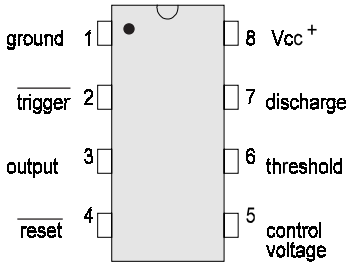
Note 4: *Parameter is not 100% tested. Majority of all units meet this specification.*

Timers

Description

The AS7555 is single general purpose RC timer capable of generating accurate time delays or frequencies. The primary feature is an extremely low supply current, making this device ideal for battery-powered systems. Additional features include low THRESHOLD, TRIGGER, and RESET current, a wide operating supply voltage range, and improved performance at high frequencies.
This CMOS low-power device offer significant performance advantages over the standard 555 bipolar timer. Low-power consumption, combined with the virtually non-existent current spike during output transistors, make this timer the optimal solution in many applications.

Pin configurations



Package: 8-lead plastic DIP

Applications

- Pulse Generator
- Precision Timing
- Time Delay Generation
- Pulse Width Modulation
- Pulse Position Modulation
- Sequential Timing
- Mising Pulse Detector

Features

- Wide Supply Voltage Range: 3-18 V
- No Crowbarring of Supply During Out put Transition
- Adjustable Duty Cycle
- Low THRESHOLD, TRIGGER and RESET Curents
- TTL Compatible
- Monolithic, Low Power CMOS Design

Absolute maximum ratings[1]

Supply Voltage ..... +18 V
Input Voltage $\overline{\text{TRIGGER}}$
Control Voltage $\overline{\text{THRESHOLD}}$ ..... <V⁺ +0.3V to ≥ -0.3V
$\overline{\text{RESET}}$
Output Current ..... 100 mA
Power Dissipation[2] ..... 200 mW
Operating Temperature Range ..... 0°C to +70°
Storage Temperature ..... -65°C to +150°
Lead Temperature (Soldering 60 Seconds) ..... +265°C

Electrical characteristics

(T_{amb}=25°C, Ucc= +3V to +15V Unless Noted)

Parameter	Test conditions	Limits			Unit
		Min	Typ	Max	
Supply voltage (V^+)	-20°C ≤ T_{amb} ≤ +85°	3		18	V
Supply Current (I^+)[3]	V^+=5 V		80	120	µA
	V^+=16.5 V		160	250	µA
Timing Error	R_A, R_B=1k to 100k, 5V ≤ V^+ ≤ 15V, C=0.1µF				
Initial Accuracy			2.0	5.0	%
Drift with Temperature[4]	V^+=5 V		50		ppm/°C
	V^+=10 V		75		
	V^+=15 V		100		
Drift with Supply Voltage[4]	V^+=5 V		1.0	3.0	%/V
Threshold Voltage (V_{TH})[4]	V^+=5 V	0.63	0.66	0.67	V^+

Electrical characteristics

(T_{amb}=25°C, Ucc= +3V to +15V Unless Noted)

Parameter	Test conditions	Limits			Unit
		Min	Typ	Max	
Trigger Voltage (V_{TRIG})[4]	V^+=5 V	0.29	0.33	0.34	V^+
Trigger Current (I_{TRIG})[4]	V^+=18 V		50		pA
	V^+=5 V		10		pA
	V^+=3 V		1		pA
Threshold Current (I_{TH})[4]	V^+=18 V		50		pA
	V^+=5 V		10		pA
	V^+=3 V		1		pA
Reset Current (I_{RST})[4]	V_{RESET}=Ground				
	V^+=18 V		100		pA
	V^+=5 V		20		pA
	V^+=3 V		2		pA
Reset Voltage (V_{RST})[4]	V^+=18 V	0.4	0.7	1.3	V
	V^+=3 V	0.4	0.7	1.3	V
Control Voltage Lead (V_{CV})	V^+=5 V	0.31		0.35	V
Output Voltage Drop (V_O)					
	Output Lo				
	V^+=16.5 V, I_{SINK}=5.0mA		0.1	0.4	V
	V^+=5 V, I_{SINK}=5.0mA		0.15	0.4	V
	Output Hi				
	V^+=16.5 V, I_{SOURCE}=5.0mA	15.0	16.2		V
	V^+=5 V, I_{SOURCE}=5.0mA	3.5	4.5		V