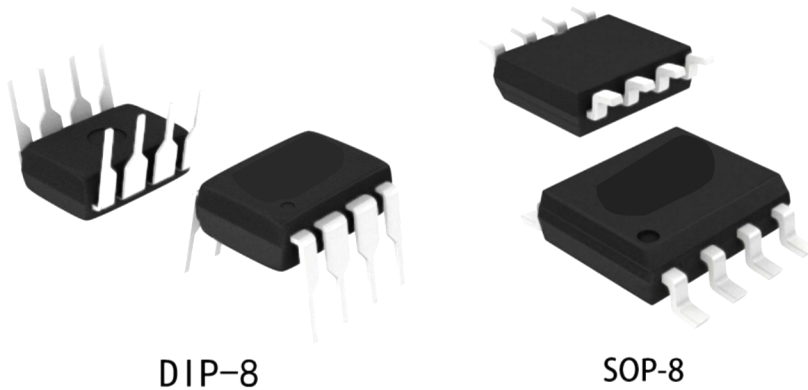


Descriptions

NE555 is a general timer circuit, which is an analog integrated circuit that combines analog signal with logic function and can generate accurate time delay and oscillation. This timing circuit can be used in many aspects such as electronic control, electronic detection and electronic alarm. For example, it can constitute a precise timer, pulse generator, time delay generator, pulse width modulation, phase modulation and sawtooth voltage generator, etc. In the microcomputer peripheral equipment, it can be used to constitute a clock generator to generate the required clock pulse. It is available in SOP8 or DIP8 package.



DIP-8

SOP-8

Feature

- Applied Advanced BiMOS Technology
- Low quiescent current : 2.7mA (TYP.)
- The chip disables the input end to power down the IC
- The quiescent current is small when the power is off, the typical value is 65 uA.
- Can drive a variety of resistance of the speaker 8Ω above
- Make the output power rate exceed 250mW when using 32Ω negative load
- Distortion is small by 0.5 % TYP.
- In the speech frequency band gain can be adjusted from 0dB to 46dB
- Few outer component

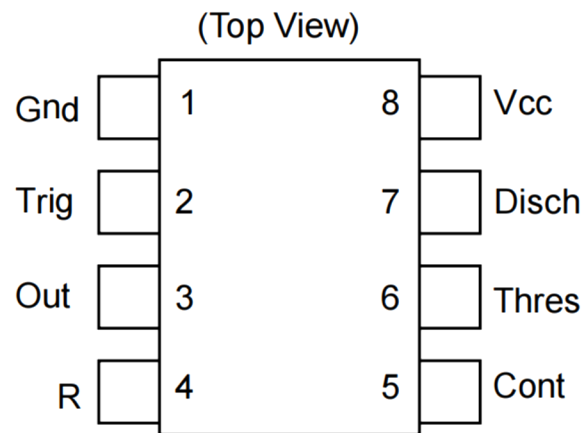
Applications

- Active Filter
- Pulse Generation
- Precision Timing
- Time Delay Generation
- Pulse Width Modulation

Ordering Information

Product Model	Package Type	Marking	Packing	Packing Qty
XBLW NE555N	DIP-8	NE555N	Tube	2000Pcs/Box
XBLW NE555DTR	SOP-8	NE555	Tape	2500Pcs/Reel

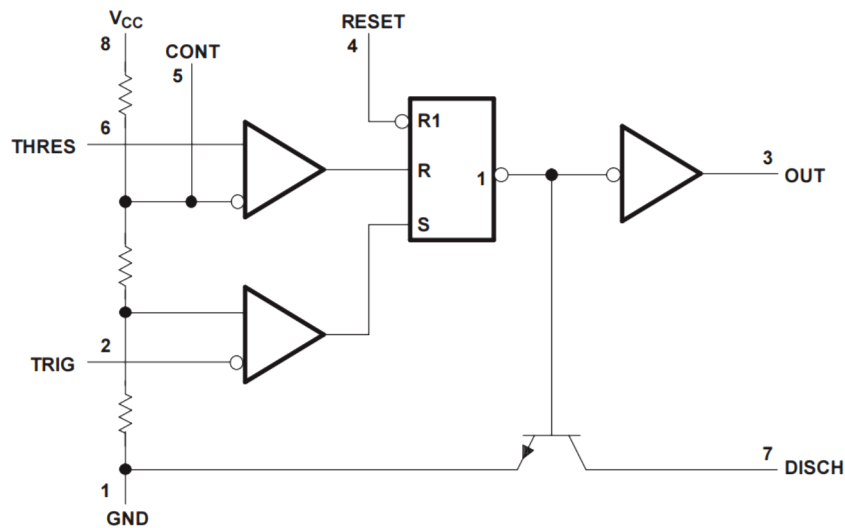
Pin Configurations



Pin Description

No.	Symbol	Function	No.	Symbol	Function
1	Gnd	Ground	5	Cont	Trigger Control
2	Trig	Trigger	6	Thres	Threshold Control
3	Out	Output	7	Dis	Discharge Current
4	R	Reset	8	Vcc	Power Supply

Block Diagram



Absolute Maximum Ratings

$T_{amb}=25^{\circ}\text{C}$, unless otherwise specified.

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	18	V
Power Dissipation (DIP)	PD	600	mW
Ambient Temperature	T_{amb}	0~70	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-65~150	$^{\circ}\text{C}$

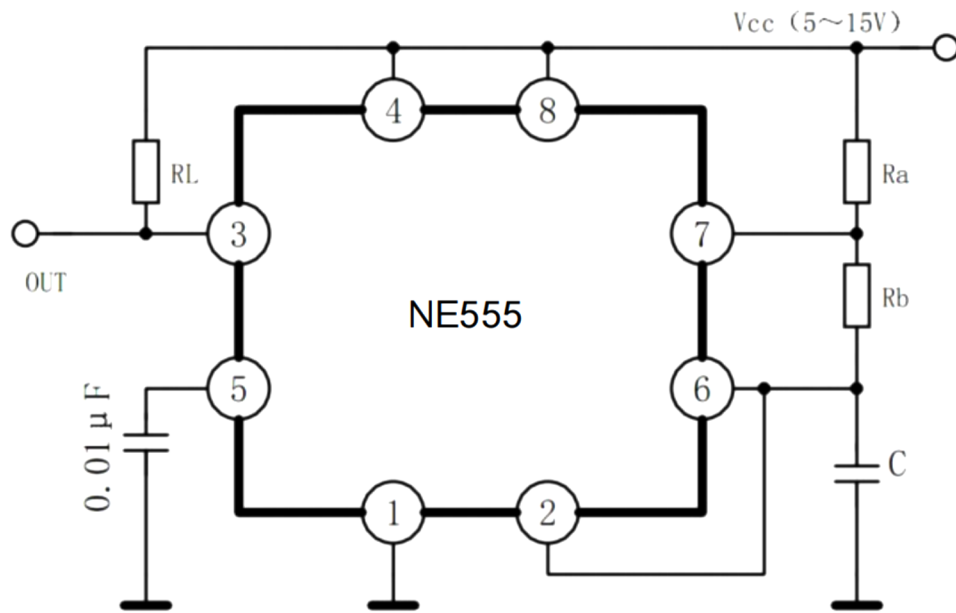
Recommended Operating Conditions

Parameter	Symbols	Value	Unit
Supply voltage	V_{CC}	4.5~15	V
Input voltage	V_i	VCC	V
Output current	I_o	± 200	mA
Operating free-air temperature	T_A	0~70	$^{\circ}\text{C}$

Electrical Characteristics $T_{amb}=25^{\circ}C$, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Supply Voltage	V_{CC}		4.5		16	V
THRES Current	I_{TH}			0.1	0.25	μA
TRIG Voltage Level	V_{TR}	$V_{CC}=15V$		5		V
		$V_{CC}=5V$		1.67		
TRIG Current	I_{TR}			0.5	2	μA
Reset Voltage Level	V_R		0.4	0.5	1	V
Reset Current	I_R			0.1	0.4	mA
CONT Voltage	V_{CON}	$V_{CC}=15V$	9	10	11	V
		$V_{CC}=5V$	2.6	3.33	4	
Leakage Current Pin7	$I_7(I_{EAK})$	Output High		20	100	nA
Leakage Saturation Voltage Fall Pin 7	$V_7(SAT)$	Output Low $V_{CC}=15V$ $I_7=15mA$		180		mV
		Output Low $V_{CC}=4.5V$ $I_7=4.5mA$		80	200	
High-Level Output Voltage	V_{OH}	$V_{CC}=15V$ $I_s=200mA$		12.5		V
		$V_{CC}=15V$ $I_s=100mA$	12.75	13.3		
		$V_{CC}=5V$ $I_s=100mA$	2.75	3.3		
Low-Level Output Voltage	V_{OL}	$V_{CC}=15V$ $I_{SINK}=10mA$		0.1	0.25	V
		$V_{CC}=15V$ $I_{SINK}=50mA$		0.4	0.75	
		$V_{CC}=15V$ $I_{SINK}=100mA$		2	2.5	
		$V_{CC}=15V$ $I_{SINK}=200mA$		2.5		
		$V_{CC}=5V$ $I_{SINK}=5mA$		0.25	0.35	
Output Rise Time	t_r			100		ns
Output Fall Time	t_f			100		
Initial Accuracy	Δt_E	Monostable $R_A, R_B=1\sim 100K$ $C=0.1\mu F$ $V_{CC}=5V(15V)$		1		%
Drift With Temperature	Δt_T			50		ppm/ $^{\circ}C$
Drift With Supply Voltage	Δt_V			0.1		%/V
Accuracy Over Temperature	Δt_{OPr}			1.5		%
Initial Accuracy	Δt_{E1}	Astable $R_A, R_B=1\sim 100K$ $C=0.1\mu F$ $V_{CC}=5V(15V)$		2.25		%
Drift With Temperature Ratio	Δt_{T1}			150		ppm/ $^{\circ}C$
Drift With Supply Voltage	Δt_{V1}			0.3		%/V
Accuracy Over Temperature	Δt_{OPr1}			3		%
Supply Current	I_{CC}	$V_{CC}=5V$, $R_L=\infty$		3	6	mA
		$V_{CC}=5V$, $R_L=\infty$		10	15	
THRES Voltage Level	V_{TH}			$0.667 \cdot V_{CC}$		

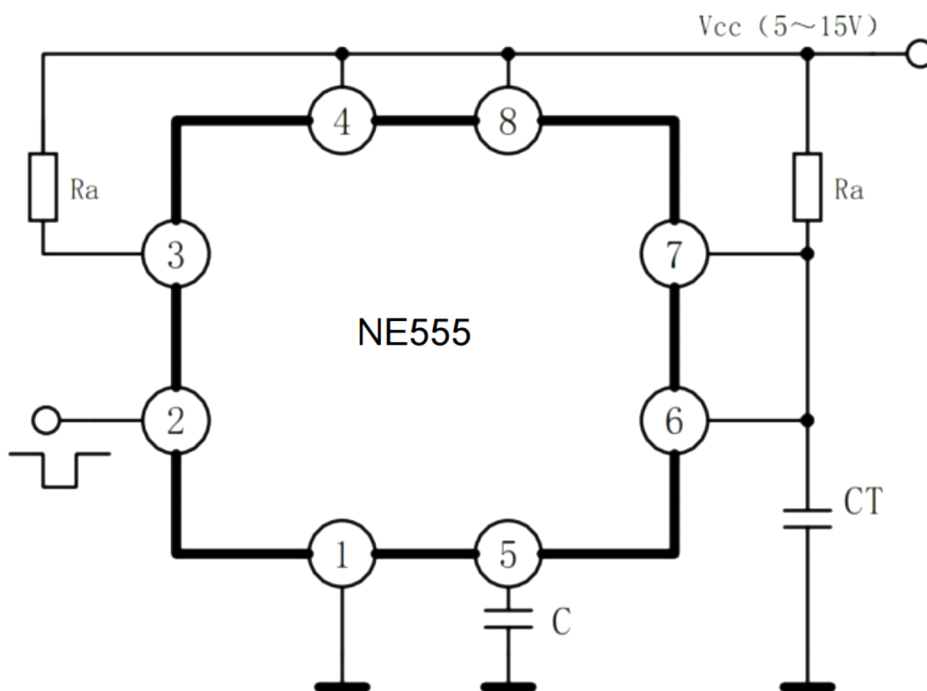
Oscillator Application Diagram



Oscillation period: $T=0.693(R_A+2R_B)C$

Duty: $D=R_B/(R_A+2R_B)$

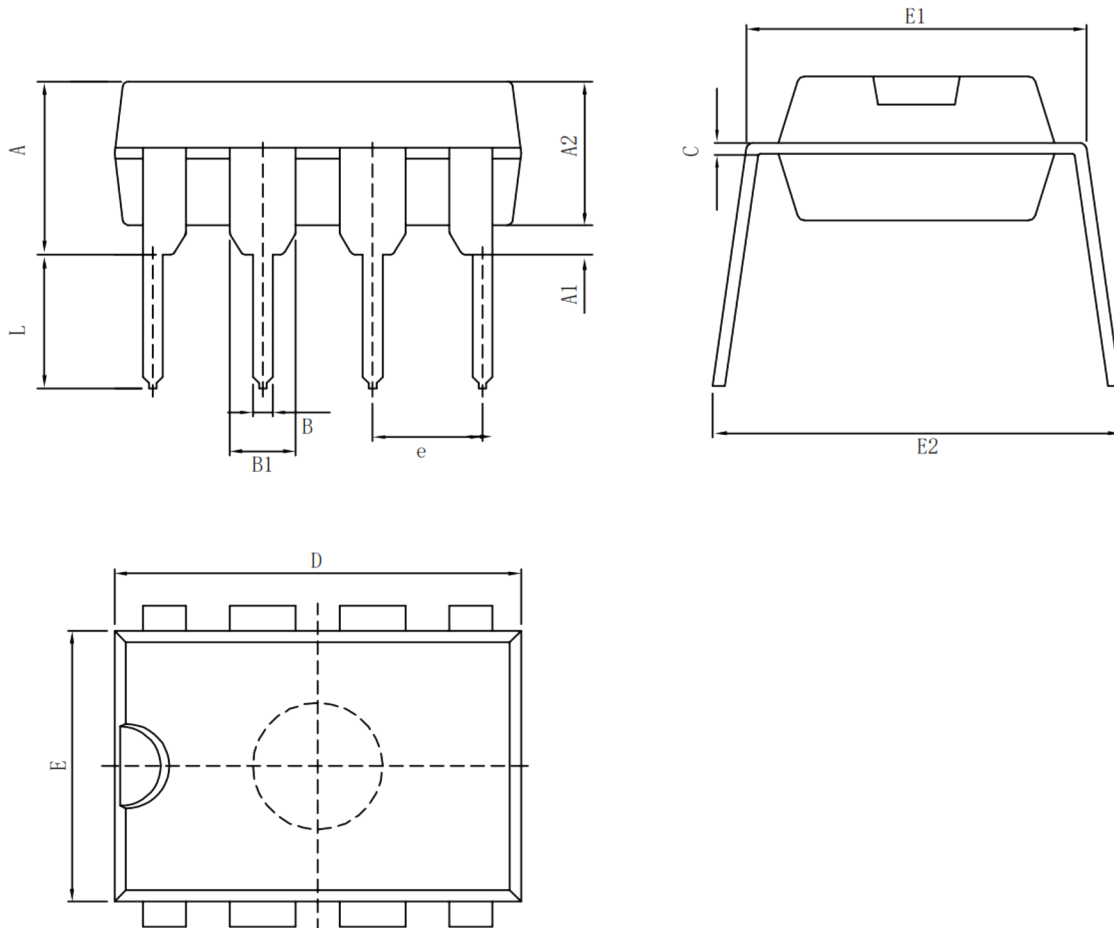
Monostable Application Circuit



Package Information

- DIP-8

Symbol	Size	Dimensions In Millimeters		Symbol	Size	Dimensions In Inches	
		Min (mm)	Max (mm)			Min (in)	Max (in)
A		3.710	4.310	A		0.146	0.170
A1		0.510		A1		0.020	
A2		3.200	3.600	A2		0.126	0.142
B		0.380	0.570	B		0.015	0.022
B1		1.524 (BSC)		B1		0.060 (BSC)	
C		0.204	0.360	C		0.008	0.014
D		9.000	9.400	D		0.354	0.370
E		6.200	6.600	E		0.244	0.260
E1		7.320	7.920	E1		0.288	0.312
e		2.540 (BSC)		e		0.100 (BSC)	
L		3.000	3.600	L		0.118	0.142
E2		8.400	9.000	E2		0.331	0.354



• SOP-8

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Inches	
	Min (mm)	Max (mm)		Min (in)	Max (in)
A	1.350	1.750	A	0.053	0.069
A1	0.100	0.250	A1	0.004	0.010
A2	1.350	1.550	A2	0.053	0.061
b	0.330	0.510	b	0.013	0.020
c	0.170	0.250	c	0.006	0.010
D	4.700	5.100	D	0.185	0.200
E	3.800	4.000	E	0.150	0.157
E1	5.800	6.200	E1	0.228	0.224
e	1.270 (BSC)		e	0.050 (BSC)	
L	0.400	1.270	L	0.016	0.050
θ	0°	8°	θ	0°	8°

