

AN1555, AN1555S, AN1555N, AN1555NS

Precision Timer

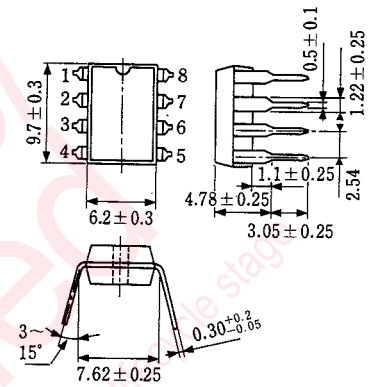
Outline

The AN1555, the AN1555S, the AN1555N, and the AN1555NS are integrated circuits designed for generating an accurate and stable timing pulse and timer time. They are widely applicable for a monostable or unstable multivibrator, etc.

Features

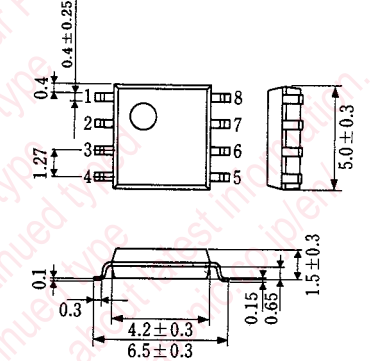
- Timing control microseconds to hours
- Max. frequency in oscillation mode 100kHz
- High stability vs. ambient temperature and supply voltage
- TTL compatible output
- 200mA sink or source output current capability
- Reset Voltage: AN1555/S=0.7V typ.
AN1555N/S=1.4V typ.

AN1555, AN1555N Unit : mm



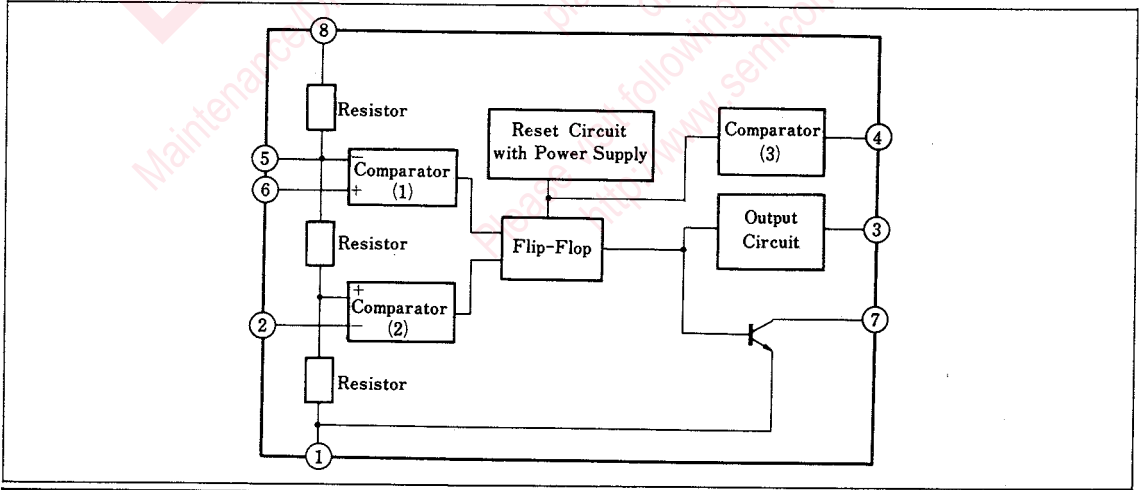
8-Lead DIL Plastic Package

AN1555S, AN1555NS



8-Lead PANAFLET Package(SO-8D)

Block Diagram



■ Pin

Pin No.	Pin Name
1	GND
2	Trigger
3	Output
4	Reset
5	Control Voltage
6	Threshold
7	Discharge
8	V _{CC}

■ Absolute Maximum Ratings (Ta = 25°C)

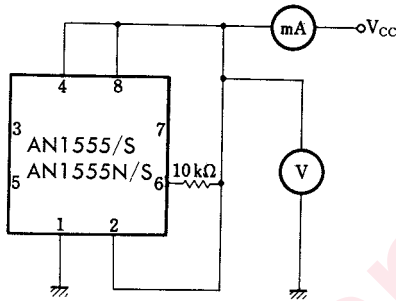
Item	Symbol	Rating	Unit
Supply Voltage	V _{CC}	+18	V
Power Dissipation	AN1555, AN1555N	625	mW
	AN1555S, AN1555NS	361	
Operating Ambient Temperature	T _{opr}	-20 ~ +75	°C
Storage Temperature	T _{stg}	-55 ~ +125	°C

■ Electrical Characteristics (Ta = 25°C)

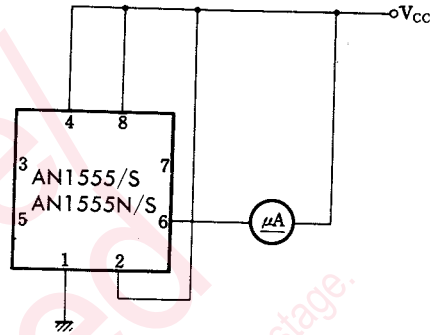
Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit Current	I _{tot}	1	V _{CC} = 5V, R _L = ∞, Output : L		5	7	mA
			V _{CC} = 15V, R _L = ∞, Output : L		9	12	mA
Threshold Voltage	V _t	2	V _{CC} = 5~15V		$\frac{2}{3}V_{CC}$		V
Threshold Current	I _t	3	V _{CC} = 5~15V			0.25	μA
Trigger Voltage	V _(Trigger)	4	V _{CC} = 5~15V		$\frac{1}{3}V_{CC}$		V
Trigger Current	I _(Trigger)	5	V _{CC} = 5~15V			0.4	μA
Reset Voltage	V _(Reset)	6	V _{CC} = 5~15V		0.7	0.9	V
					1.4	2.0	
Reset Current	I _(Reset)	6	V _{CC} = 5~15V			0.4	μA
Control Voltage	V _(Cont.)	7	V _{CC} = 5V	2.6	3.33	4.0	V
			V _{CC} = 15V	9.0	10.0	11.0	V
Output Voltage "L" Level	V _{OL}	8	V _{CC} = 5V, I _{SINK} : 5mA		0.03	0.06	V
			V _{CC} = 5V, I _{SINK} : 8mA		0.05	0.08	V
			V _{CC} = 15V, I _{SINK} : 10mA		0.05	0.15	V
			V _{CC} = 15V, I _{SINK} : 50mA		0.15	0.3	V
			V _{CC} = 15V, I _{SINK} : 100mA		0.35	0.9	V
			V _{CC} = 15V, I _{SINK} : 200mA		2.5		V
Output Voltage "H" Level	V _{OH}	9	V _{CC} = 5V, I _{SOURCE} : 100mA	2.75	3.4		V
			V _{CC} = 15V, I _{SOURCE} : 100mA	12.75	13.5		V
Initial Time Interval Error	Δt _E	10	Astable oscillation R _A , R _B = 1~100kΩ C = 0.1μF		1.0		%
Time Interval Temperature Regulation	Δt _T	10			100		ppm/°C
Time Interval Supply Voltage Regulation	Δt _V	10			0.1		%/V
Rise Time	t _r	10	V _{CC} = 5~15V		100		ns
Fall Time	t _f	10			100		ns

Note : Operating Supply Voltage Range : V_{CC(opr)} = 4.5~16V

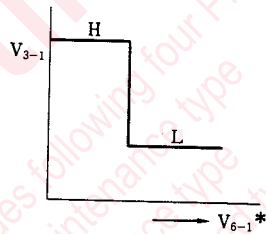
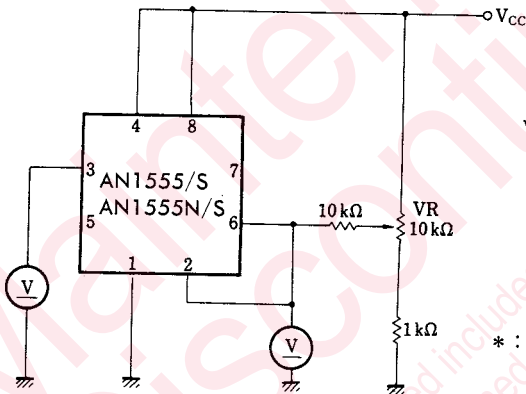
Test Circuit 1 (I_{tot})



Test Circuit 3 (I_t)

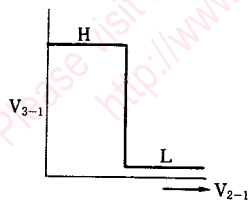
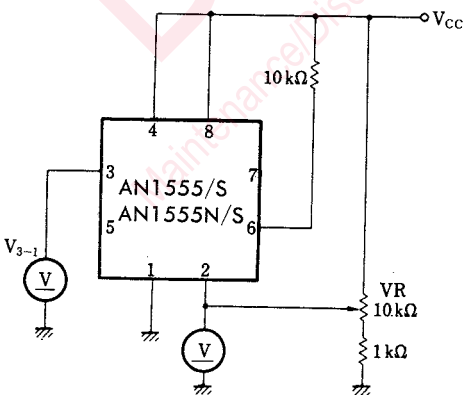


Test Circuit 2 (V_t)

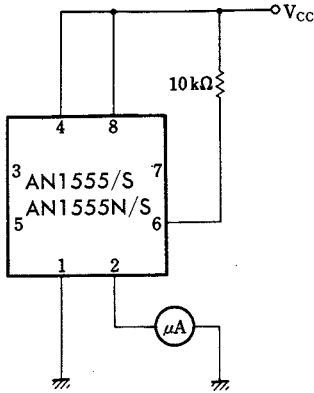


* : Voltage of V_{6-1} should be increased from 0V.

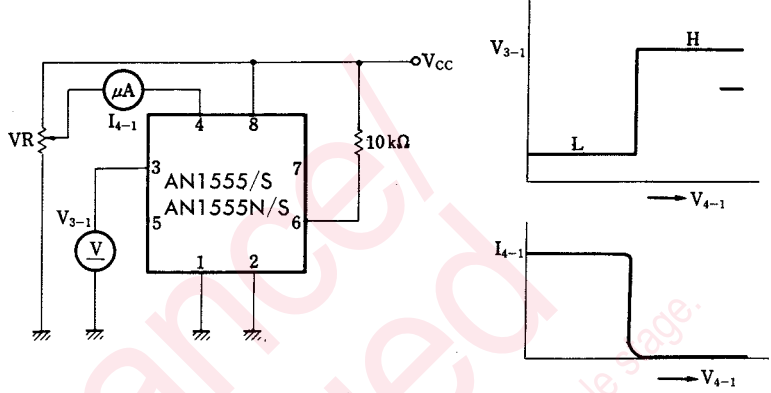
Test Circuit 4 ($V_{Trigger}$)



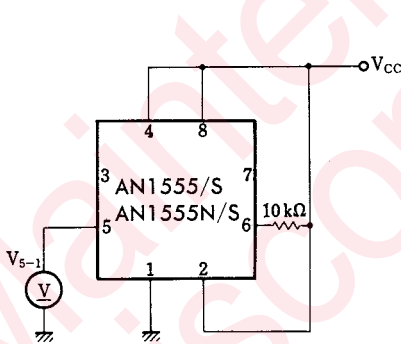
Test Circuit 5 ($I_{(Trigger)}$)



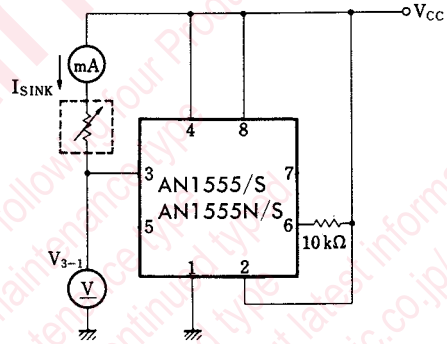
Test Circuit 6 ($V_{(Reset)}$, $I_{(Reset)}$)



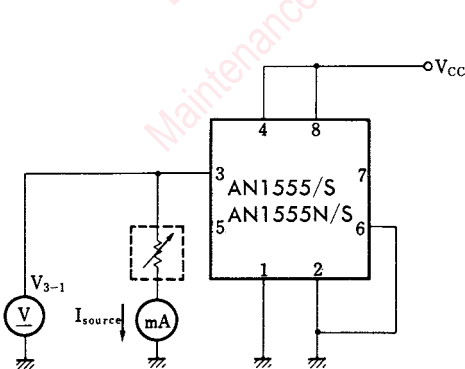
Test Circuit 7 ($V_{(Cont.)}$)



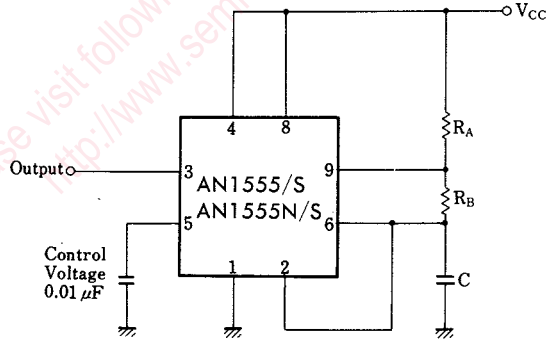
Test Circuit 8 (V_{OL})



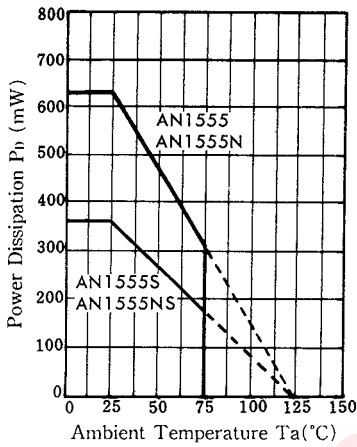
Test Circuit 9 (V_{OH})



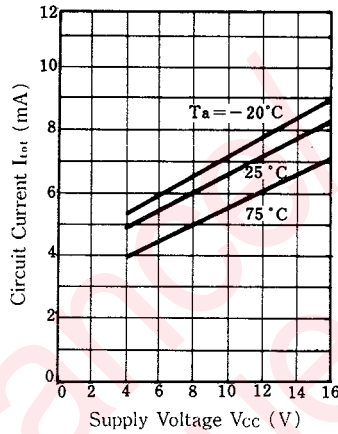
Test Circuit 10 (Δt_E , Δt_T , Δt_V , t_r , t_f)



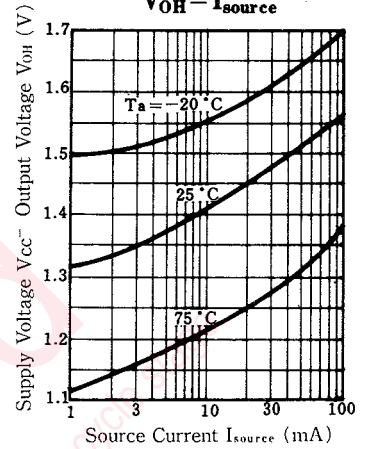
$P_D - T_a$



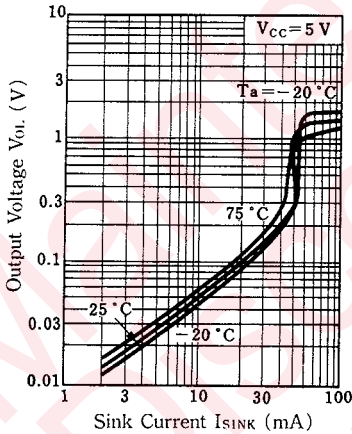
$I_{tot} - V_{CC}$



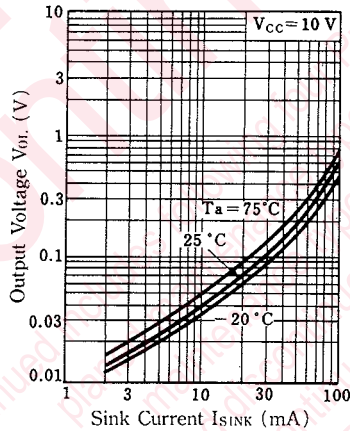
$V_{OH} - I_{source}$



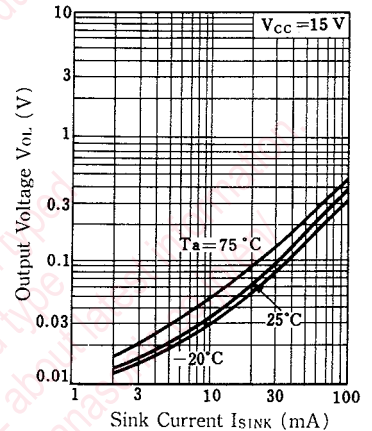
$V_{OL} - I_{SINK}$



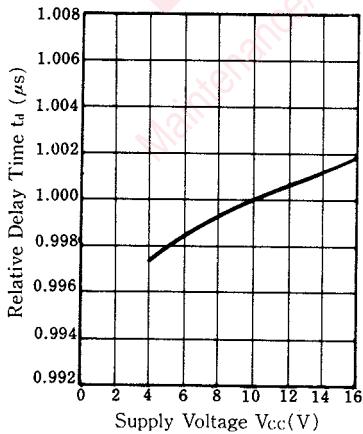
$V_{OL} - I_{SINK}$



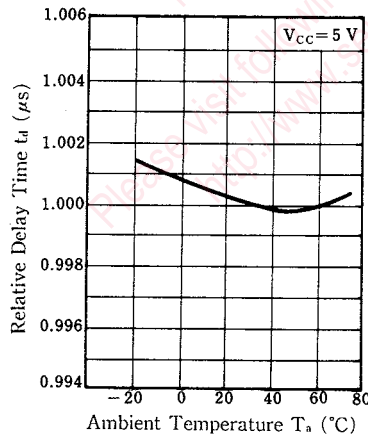
$V_{OL} - I_{SINK}$



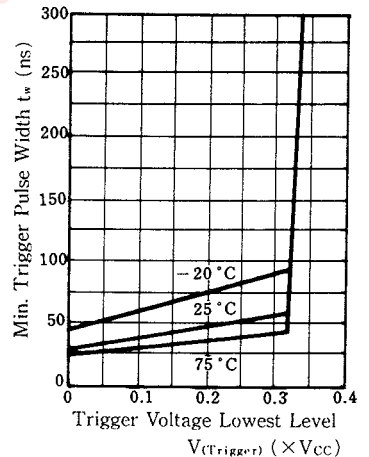
$t_d - V_{CC}$

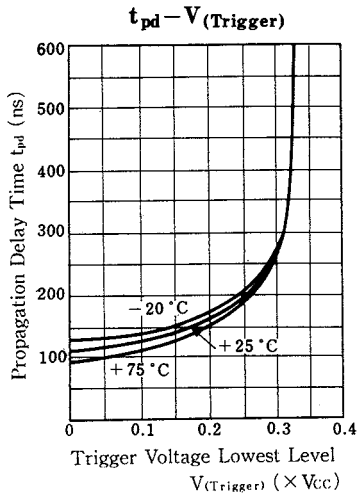


$t_d - T_a$

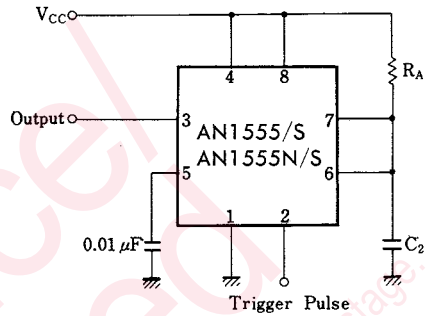


$t_w - V(Trigger)$





■ Application Circuit



- Parts and Measuring Apparatus
- Parts and Measuring Apparatus
- R_A : Metal Film Resistor
- C_2 : Polyester Capacitor
- Output : Universal Counter Load $1k \Omega$

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 maintenance type
 planned discontinued type
 discontinued type
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