AN1555N, AN1555NS

General-use Precision Timers

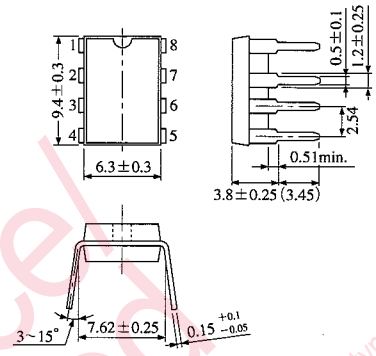
■ Overview

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

■ Features

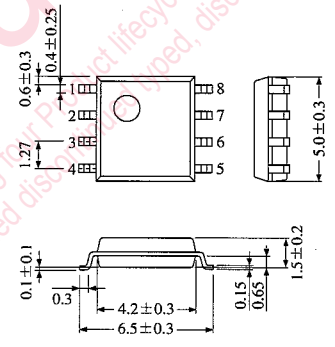
- Timing control microseconds to hours
- Max frequency in oscillation mode 100kHz
- High stability vs. ambient temperature and supply voltage
- TTL compatible output
- 200mA sink or source output current capability
- Reset voltage : 1.4V typ

AN1555N Unit : mm



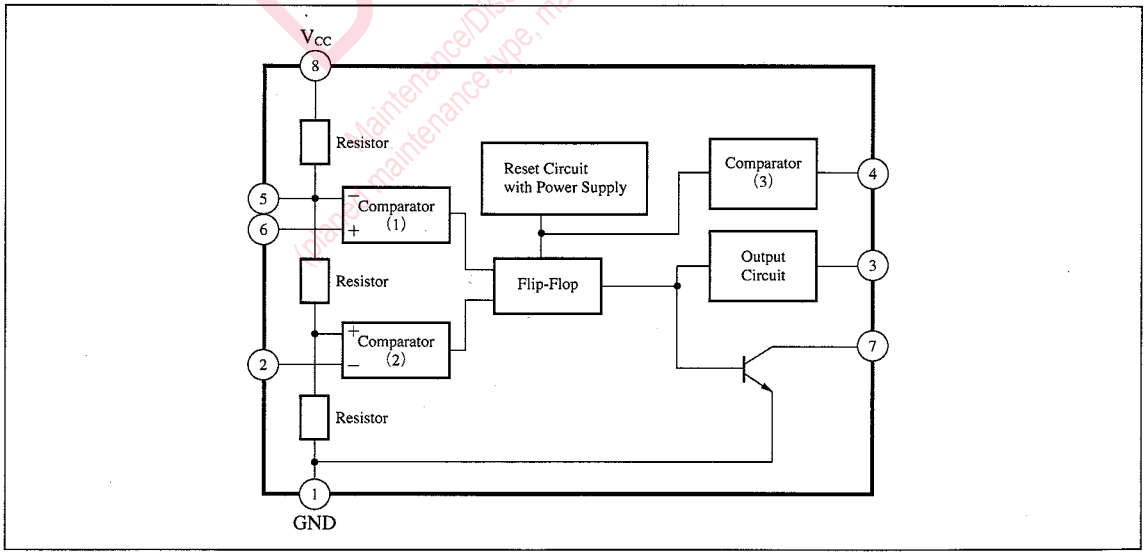
8-pin DIL Plastic Package (DIP008-P-0300B)

AN1555NS Unit : mm



8-pin PANAFLAT Plastic Package (SOP008-P-0225A)

■ Block Diagram



■ Pin Descriptions

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℃)

Parameter		Symbol	Rating	Unit
Supply voltage		V_{CC}	18	V
Power dissipation	AN1555N	P_D	625	mW
	AN1555NS		361	
Operating ambient temperature		T_{opr}	−20 to +75	℃
Storage temperature		T_{stg}	−55 to +125	℃

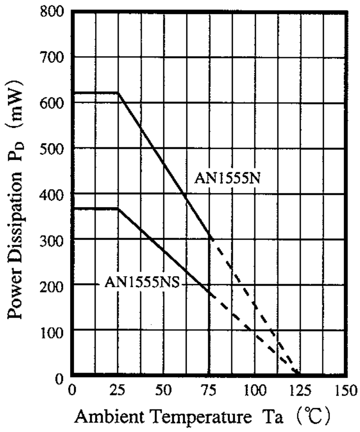
■ Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	min	typ	max	Unit
Circuit current	I_{tot}	V_{CC}=5V, R_L=∞, Output : L	—	5	7	mA
		V_{CC}=15V, R_L=∞, Output : L	—	8	12	mA
Threshold voltage	V_t	V_{CC}=5 to 15V	—	$\frac{2}{3}V_{CC}$	—	V
Threshold current	I_t	V_{CC}=5 to 15V	—	0.03	0.3	μA
Trigger voltage	$V_{(Trigger)}$	V_{CC}=5 to 15V	—	$\frac{1}{3}V_{CC}$	—	V
Trigger current	$I_{(Trigger)}$	V_{CC}=5 to 15V	—	0.1	0.5	μA
Reset voltage	$V_{(Reset)}$	V_{CC}=5 to 15V	—	1.4	2.0	V
Reset current	$I_{(Reset)}$	V_{CC}=5 to 15V	—	0.05	0.2	μA
Control voltage	$V_{(Cont.)}$	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}	V_{CC}=5V, I_{SINK} : 5mA	—	0.05	0.2	V
		V_{CC}=5V, I_{SINK} : 8mA	—	0.08	0.25	V
		V_{CC}=15V, I_{SINK} : 10mA	—	0.05	0.2	V
		V_{CC}=15V, I_{SINK} : 50mA	—	0.2	0.5	V
		V_{CC}=15V, I_{SINK} : 100mA	—	0.5	2	V
		V_{CC}=15V, I_{SINK} : 200mA	—	2.5	—	V
Output voltage "H" level	V_{OH}	V_{CC}=5V, I_{source} : 100mA	2.8	3.3	—	V
		V_{CC}=15V, I_{source} : 100mA	12.8	13.3	—	V
Initial time interval error	Δt_E	Unstable oscillation R_A, R_B=1 to 100kΩ C=0.1μF	—	1.0	—	%
Time interval temperature regulation	Δt_T		—	50	—	ppm/℃
Time interval supply voltage regulation	Δt_V		—	0.1	—	%/V
Rise time	t_r	V_{CC}=5 to 15V	—	100	—	ns
Fall time	t_f		—	100	—	ns

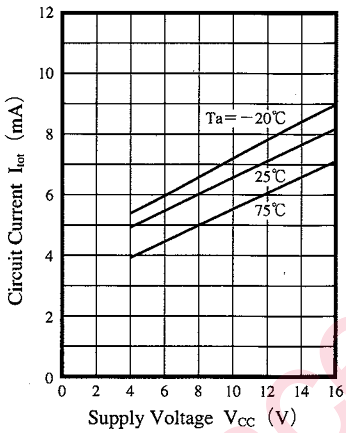
Note) Operating Supply Voltage Range : $V_{CC(opr)}$ =4.5 to 16V

■ Characteristics Curve

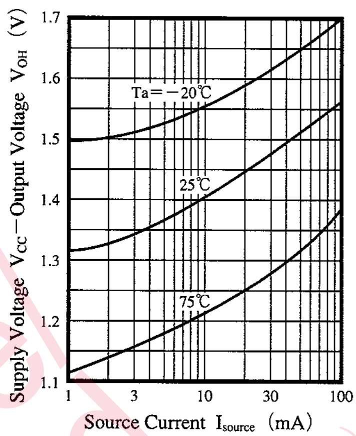
P_D — Ta



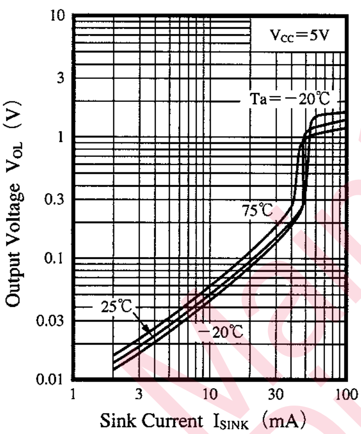
I_{tot} — V_{CC}



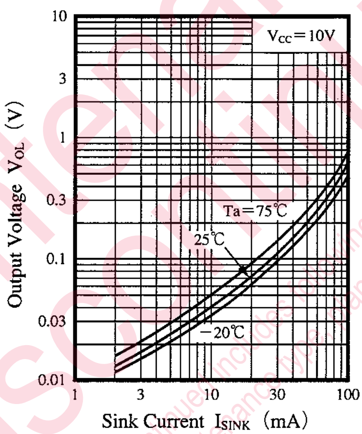
V_{OH} — I_{source}



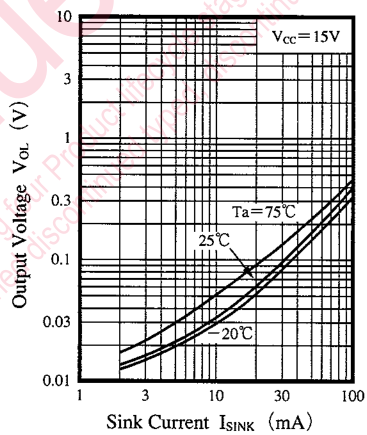
V_{OL} — I_{SINK}



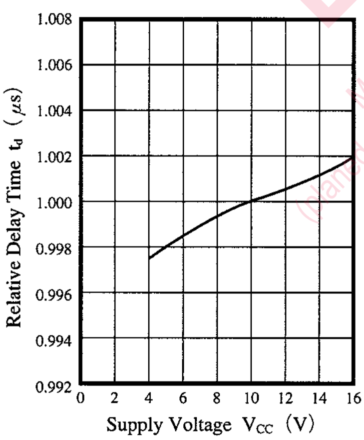
V_{OL} — I_{SINK}



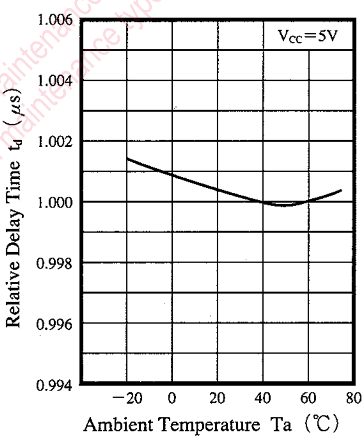
V_{OL} — I_{SINK}



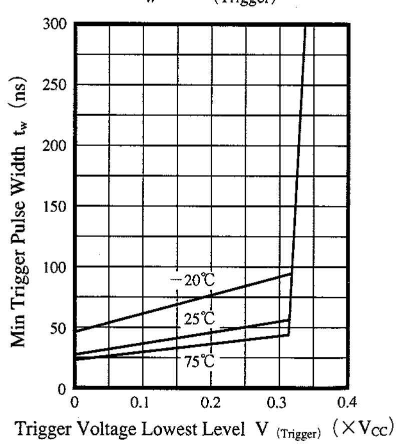
t_d — V_{CC}



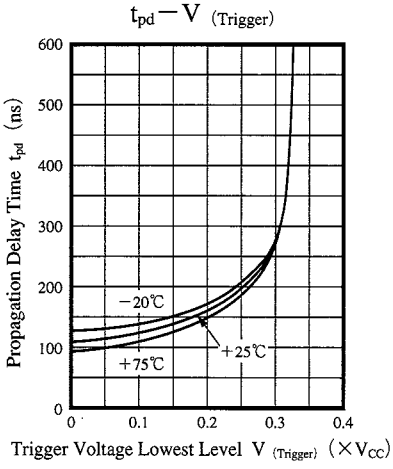
t_d — Ta



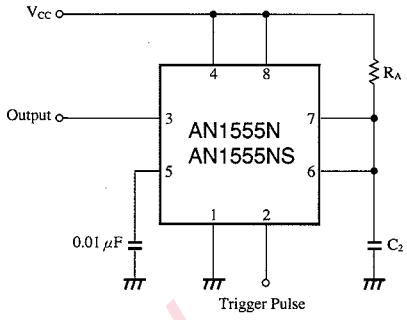
t_w — V (Trigger)



Others



■ Application Circuit



- Parts and measuring apparatus
- R_A : Metal film resistor
- C_2 : Polyester capacitor
- Output : Universal counter load 1kΩ

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