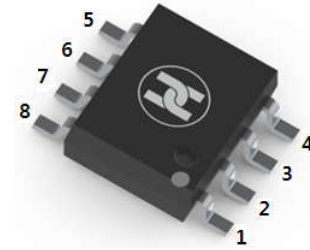


CMOS GENERAL PURPOSE TIMER

FEATURES

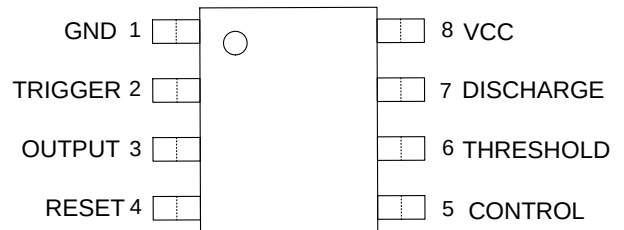
- Exact equivalent in most cases for SE/NE555
- Low Supply Current
- High speed operation – 500KHz guaranteed
- Wide operation supply voltage range - 2V to 18V
- Timing from microseconds through hours
- Operates in both astable and monostable modes
- Adjustable duty cycle
- High output source/sink driver can drive TTL/CMOS



SOP-8

MECHANICAL DATA

- Case: SOP-8
- Case material: Molded plastic. UL flammability
- Classification rating: 94V-0
- Terminal: Tin plated, solderable per MIL-STD-750, method 2026
- Weight: 0.3grams (approximate)



MAXIMUM RATINGS($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Power supply voltage	V_{CC}	18	Vdc
Input voltage	V_I	V_{CC}	Vdc
Output current	I_o	± 220	mA
Power dissipation $T_A = 25^{\circ}\text{C}$	P_D	400	mW
Operating ambient temperature range	T_A	$-20 \sim +70$	$^{\circ}\text{C}$
Maximum operating junction temperature	$T_{J(max)}$	150	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	$-65 \sim +150$	$^{\circ}\text{C}$
Lead temperature 1,6 mm (1/16 in) from case for 10 s	JG package	260	$^{\circ}\text{C}$

CMOS GENERAL PURPOSE TIMER
ELECTRICAL CHARACTERISTICS ($V_{CC}=5.0V_{dc}$, $0^{\circ}C \leq T_A \leq +70^{\circ}C$, unless otherwise specified)

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_{CC}		4.5	—	15	V
Supply current	I_{CC}	$V_{CC}=5V$, $R_L=\infty$, $V_O=V_{OL}$	—	3	6	mA
		$V_{CC}=5V$, $R_L=\infty$, $V_O=V_{OH}$	—	1.5	5	mA
		$V_{CC}=15V$, $R_L=\infty$, $V_O=V_{OL}$	—	8	15	mA
		$V_{CC}=15V$, $R_L=\infty$, $V_O=V_{OH}$	—	6	13	mA
CONT voltage (open circuit)	V_{CL}	$V_{CC}=15V$	—	10.0	11	V
		$V_{CC}=5V$	—	3.3	4	V
THRES voltage level	V_{TH}	$V_{CC}=15V$	—	10.0	11.2	V
		$V_{CC}=5V$	—	3.3	4.2	V
THRES current ⁽¹⁾	I_{TH}^{*note1}	$V_{CC}=15V$, $V_{TH}=0V$	—	—	250	nA
TRIG voltage level	V_{TRIG}	$V_{CC}=15V$	—	5.0	5.6	V
		$V_{CC}=5V$	—	1.6	2.2	V
TRIG current	I_{TRIG}	$V_{CC}=15V$, $V_{TRIG}=0V$,	—	—	2	uA
Reset terminal high voltage	V_{RESETH}	$V_{CC}=5V$	1.5	—	V_{CC}	V
Low voltage at reset end	V_{RESETL}	$V_{CC}=5V$	GND	—	0.5	V
RESET current	I_{RESET}	$V_{RESET}=0.4V$, $V_{CC}=15V$	—	0.13	0.4	mA
		$V_{RESET}=0V$, $V_{CC}=15V$	—	0.3	1.5	mA
Low-level output voltage	V_{OL}	$V_{CC}=15V$, $I_L=-5mA$	—	0.02	0.25	V
		$V_{CC}=15V$, $I_L=-50mA$	—	0.04	0.75	
		$V_{CC}=15V$, $I_L=-100mA$	—	2.0	2.5	
		$V_{CC}=15V$, $I_L=-200mA$	—	2.8	—	
		$V_{CC}=5V$, $I_L=-5mA$	—	0.08	0.35	
		$V_{CC}=5V$, $I_L=-8mA$	—	0.15	0.4	
High-level output voltage	V_{OH}	$V_{CC}=15V$, $I_L=-100mA$	12.75	13.3	—	V
		$V_{CC}=15V$, $I_L=-200mA$	—	12.2	—	
		$V_{CC}=5V$, $I_L=-100mA$	2.75	3.3	—	
DISCH switch off-state current	$I_{dis(off)}$	$V_O=V_{OH}$, $V_{dis}=10V$	—	—	100	nA
Saturation Voltage	$V_{dis(sat)}$	$V_O=V_{OL}$, $V_{CC}=15V$, $I_{dis}=15mA$	—	140	480	mV
		$V_{CC}=5V$, $I_{dis}=4.5mA$	—	100	200	mV
Output-pulse rise time	t_R	$CL=15pF$,	—	80	300	ns
Output-pulse fall time	t_F	$CL=15pF$	—	50	300	ns
Temperature coefficient timing interval	αT_s^{*note2}	$RA=2k\Omega$	$V_{CC}=15V$,	—	1	%
	T_v	100k Ω	(4.5V~15V)	—	0.1	%/V
	T_t	$C=0.1\mu F$	$V_{CC}=15V$, $0\sim 60^{\circ}C$	—	150	ppm $^{\circ}C$
Supply-voltage sensitivity timing interval	T_{sf}^{*note2}	$RA, RB=1k\Omega$	$V_{CC}=15V$,	—	1	%
	T_v	100k Ω	4.5V~15V)	—	0.1	%/V
	T_t	$C=0.1\mu F$	$V_{CC}=15V$, $0\sim 60^{\circ}C$	—	150	ppm $^{\circ}C$

CMOS GENERAL PURPOSE TIMER

TYPICAL CHARACTERISTICS

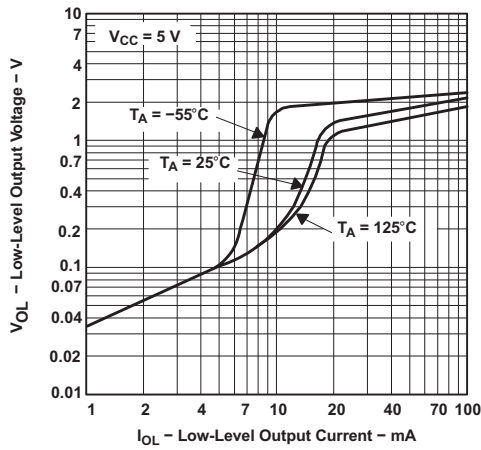


Figure 1. Low-Level Output Voltage vs Low-Level Output Current

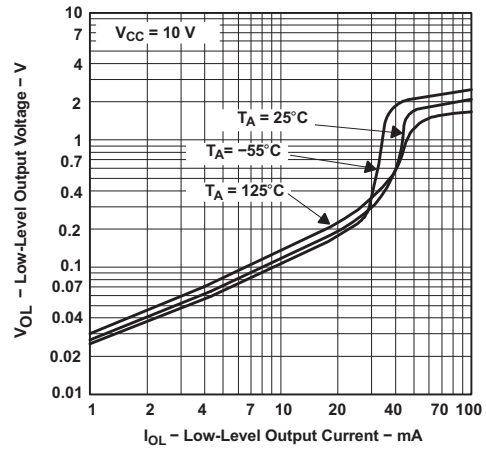


Figure 2. Low-Level Output Voltage vs Low-Level Output Current

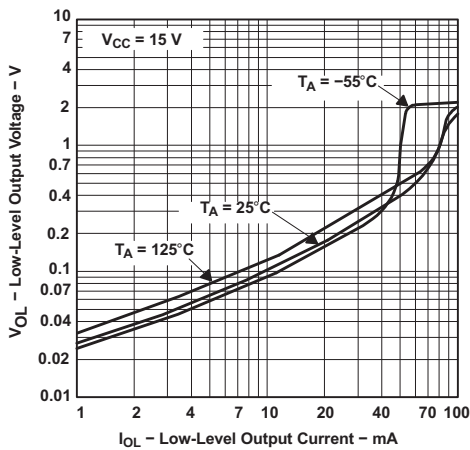


Figure 3. Low-Level Output Voltage vs Low-Level Output Current

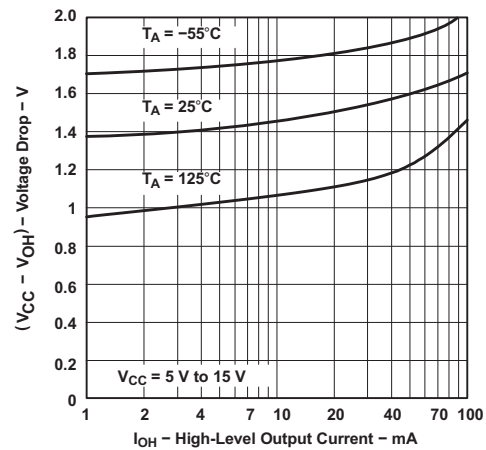


Figure 4. Drop Between Supply Voltage and Output vs High-Level Output Current

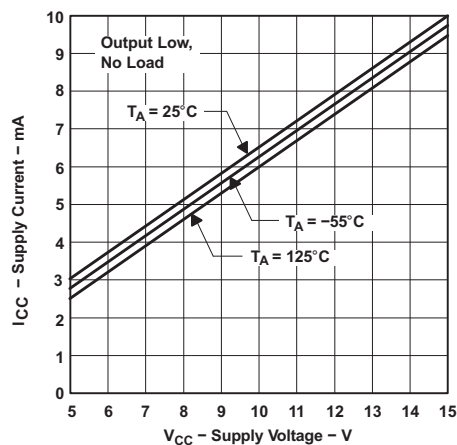


Figure 5. Supply Current vs Supply Voltage

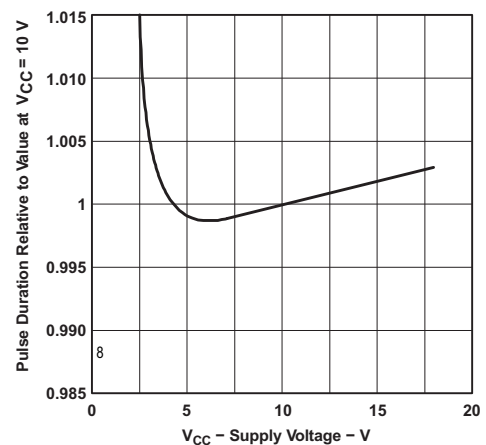
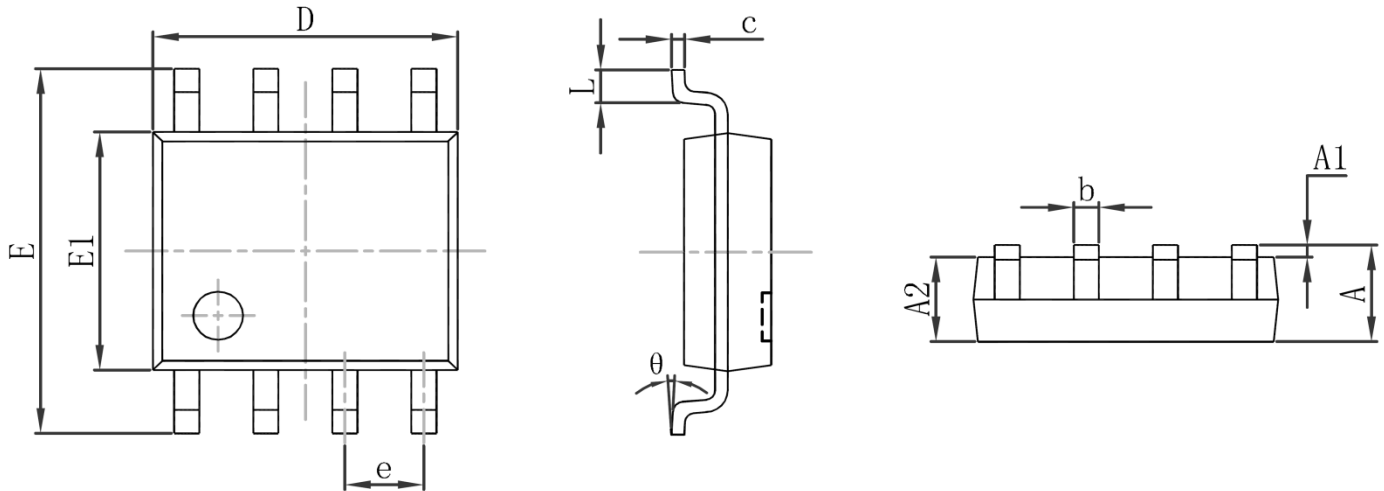


Figure 6. Normalized Output Pulse Duration (Monostable Operation) vs Supply Voltage

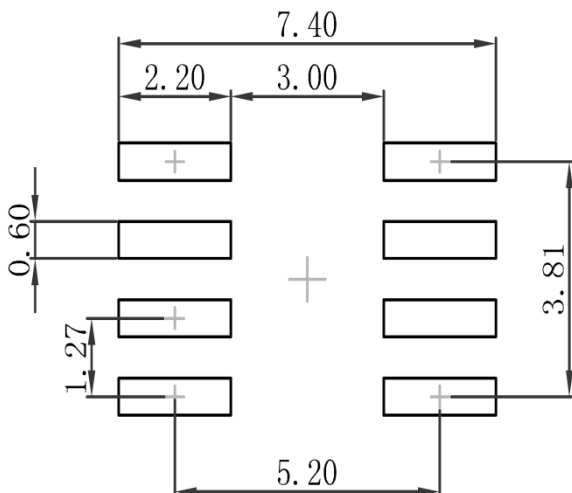
CMOS GENERAL PURPOSE TIMER

SOP-8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270(BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

SOP-8 Suggested Pad Layout



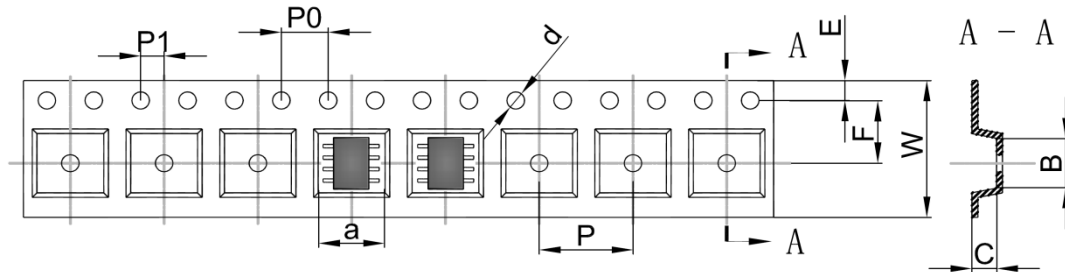
Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

CMOS GENERAL PURPOSE TIMER

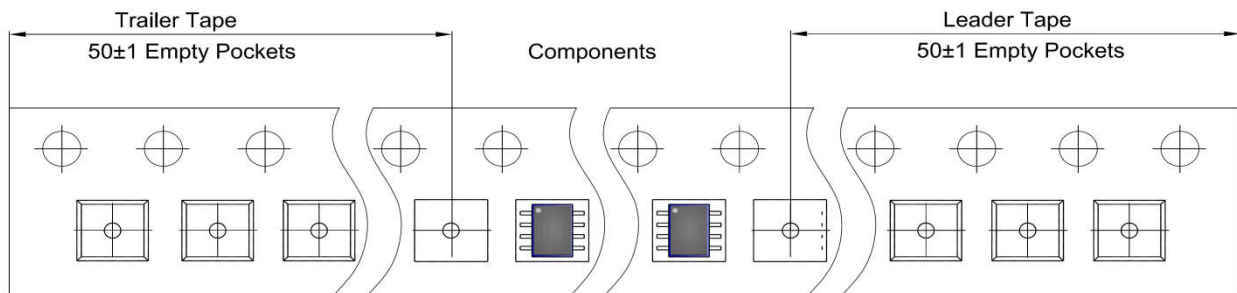
SOP-8 Tape and Reel

SOP-8 Embossed Carrier Tape

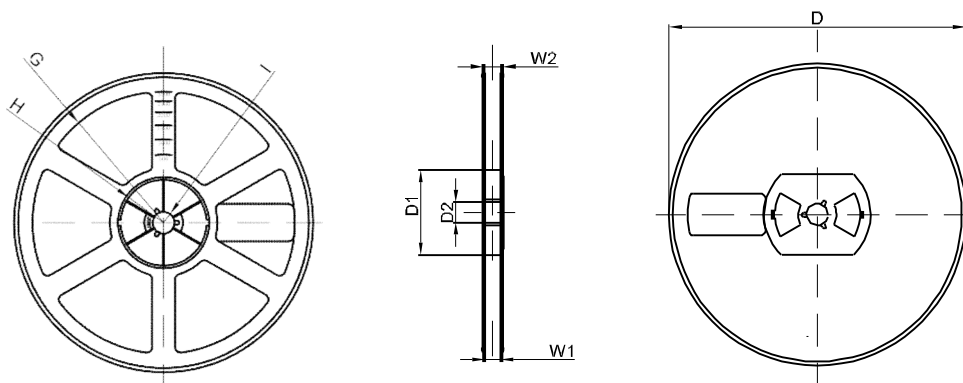


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOP-8	6.40	5.40	2.10	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOP-8 Tape Leader and Trailer



SOP-8 Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330.00	100.00	13.00	R151.00	R56.00	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1