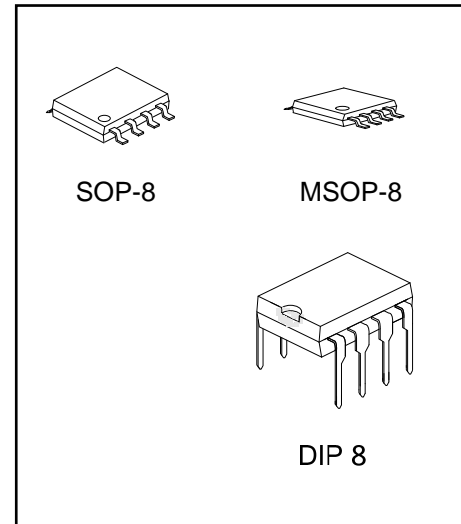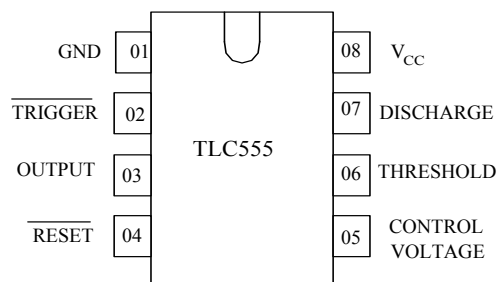# CMOS general purpose timer

The TLC555 is CMOS RC timers providing significantly improved performance over the standard SE/NE555 and 355 timers, while at the same time being direct replacements for those devices in most applications. Improved parameters include low supply current, wide operating supply voltage range, low THRESHOLD, TRIGGER and RESET currents, no crowbarring of the supply current during output transitions, higher frequency performance and no requirement to decouple CONTROL VOLTAGE for stable operation.

Specifically, the TLC555 is stable controller capable of producing accurate time delays of frequencies.

SOP-8   MSOP-8

DIP 8

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

PIN ASSIGNMENT

GND	01	08	V_{CC}
$\overline{\text{TRIGGER}}$	02	07	DISCHARGE
OUTPUT	03	06	THRESHOLD
$\overline{\text{RESET}}$	04	05	CONTROL VOLTAGE

TLC555

TRUTH TABLE

THRESHOLD	$\overline{\text{TRIGGER}}$	$\overline{\text{RESET}}$	OUTPUT	DISCHARGE
X	X	L	L	ON
$> 2/3 \cdot V_{CC}$	$> 1/3 \cdot V_{CC}$	H	L	ON
$< 2/3 \cdot V_{CC}$	$> 1/3 \cdot V_{CC}$	H	STABLE	STABLE
X	$< 1/3 \cdot V_{CC}$	H	H	OFF

MAXIMUM RATINGS AND RECOMMENDED OPERATING CONDITIONS

Parameter, unit	Symbol	Recommended operating conditions		Maximum ratings	
		Value		Value	
		min	max	min	max
Supply Voltage, V	V_{CC}	2.0	18.0	0	18.0
Output Current, mA	I_O	-	20	-	100
Input Voltage, V	$V_{TH}, V_{TRIG}, V_{RST}$	-	-	-0.3	$V_{CC}+0.3$
Power Dissipation, mW	P_D	-	-	-	200
Operating Temperature,°C	T_{OPR}	-20	70	-20	85
Storage Temperature, °C	T_{STG}	-	-	-65	150
Lead Temperature, 1 mm from Case for 10 Seconds, °C	T_{SOLDER}	-	-		260

DC ELECTRICAL CHARACTERISTICS (Voltages Referenced to GND)

Parameter, units	Symbol	Test Conditions		Value		Tempe-rature, °C
		I_{OL}, I_{OH}	V_{CC}, B	min	max	
Threshold Voltage, V	V_{TH}		5.0	0.65 V_{CC}	0.70 V_{CC}	25±10
				0.60 V_{CC}	0.80 V_{CC}	-20, 70
Trigger voltage, V	V_{TRIG}		5.0	0.31 V_{CC}	0.36 V_{CC}	25±10
				0.28 V_{CC}	0.40 V_{CC}	-20, 70
Reset voltage, V	V_{RST}		2.0	0.4	1.0	25±10
			18.0			
			2.0	0.2	1.5	-20, 70
			18.0			
Control Voltage Lead, V	V_{CV}			0.65 V_{CC}	0.69 V_{CC}	25±10
				0.60 V_{CC}	0.80 V_{CC}	-20, 70
Output voltage Low, V	V_{OL}	I_{OL} = 3.2 mA	5.0		0.4	25±10
		I_{OL} = 20 mA	15.0		1.0	
		I_{OL} = 3.2 mA	5.0		0.6	-20, 70
		I_{OL} = 20 mA	15.0		1.5	
Output voltage High, V	V_{OH}	I_{OH} = -0.8 mA	5.0	4.0		25±10
			15.0	14.3		
			5.0	3.5		-20, 70
			15.0	14.0		
Supply Current, μA	I_{CC}		2.0		200	25±10
			18.0		300	
			2.0		400	-20, 70
			18.0		600	

AC ELECTRICAL CHARACTERISTICS

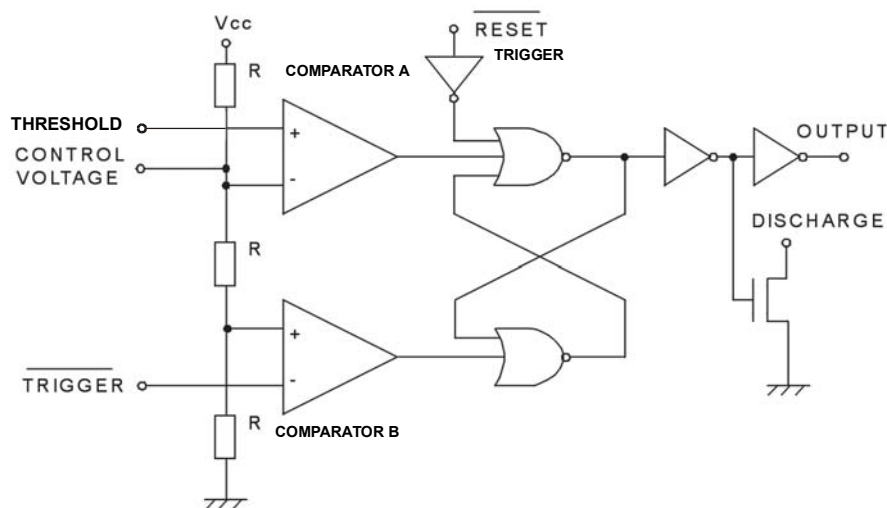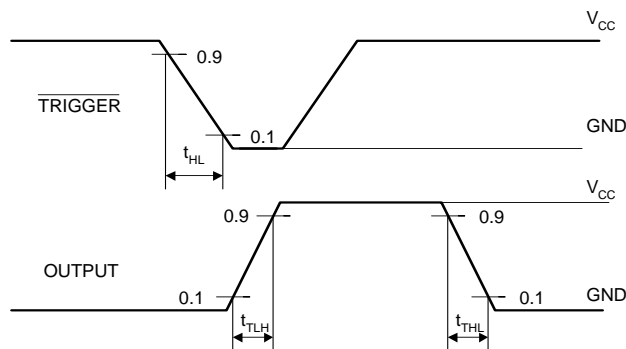| Parameter, unit	Symbol	Test Conditions		Value		Temperature, °C
		R_L, C_L	V_{CC}, V	Min	Max	
Rise (Fall) Time of Output, ns	t_{THL}, t_{TLH}	$R_L = 10\ M\Omega$, $C_L = 10\ pF$	5.0	35	75	25±10
				70	150	-20, 70
Guaranteed Max Osc Freq, kHz	f_{MAX}	Astable Operation	2.0-18.0	500		25±10
				200		-20, 70
Initial accuracy, %				5		
Drift with Temperature, %/°C	αf	$R_L = 1 - 100\ k\Omega$, $C_L = 0.1\ \mu F$	5.0		0.02	-20, 70
			10.0		0.03	
			15.0		0.06	
Drift with Supply Voltage, %/B	Δf		5.0		3	25±10
					6	-20, 70

Figura 1.   Block Diagram

Figura 2.   Switcing Waveforms

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Timers & Support Products *category:*

Click to view products by HGSEMI *manufacturer:*

Other Similar products are found below :

NLV14541BDR2G MIC1557YD5-TR Z84C3010AEG MIC1555YMU-TR NLV14541BDG MAX7375AXR365+T MIC1555YD5-TR PT8A2515TAEX PT8A2514APE S-35710M01I-E8T3U LTC6992CDCB-2#TRMPBF SY87700ALZG LM555CM LMC555CM FT8010UMX FTL11639UCX MAX809TEUR+ MAX7375AXR185+T MAX7375AXR105+T MAX3634ETM+ FTL75939UCX NA555S-13 NB7N017MMNG NJM555D 82P33731ABAG TLC555MJG MAX7375AXR405+T Z84C3006PEG SA555S-13 MAX7375AXR805T SY87701ALHG MCP130-475HI/TO S-1410G28-K8T2U4 VSC8115XYA-05-T VSC8115XYA-06-T LTC6992CS6-3#TRMPBF NLV14541BDTR2G 636058D 8406501JA S-1410H30-K8T2U4 S-35710C01I-K8T2U S-35770E01I-K8T2U S-35720C01I-K8T2U S-35720C02I-K8T2U S-35730C01I-K8T2U S-35740C01I-K8T2U ALD1502SAL ALD2502SBL ALD4501PEL ALD4501SEL