TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA7555P, TA7555F

TIMER APPLICATIONS

The TA7555P monolithic circuit is a highly stable device as producing accurate time delay or timing pulse. Additional terminals are provided for triggering or reseting, if desired.

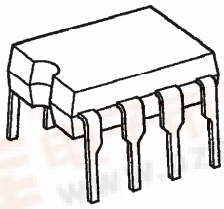
In the time delay or monostable mode of operation, the time is precisely controlled by one external resistor and capacitor.

In the astable mode of operation, the frequency and duty cycle are accurately and independently controlled with two external resistors and one capacitor.

The circuit of the TA7555P may be triggered and reset on falling waveforms, and the output structure can source and sink up to 200mA or drive TTL circuit.

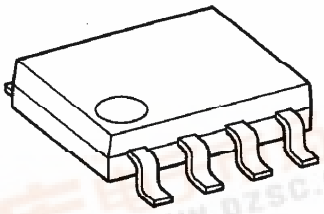
Operation is specified for supplies of 5 to 15V.

TA7555P



DIP8-P-300-2.54

TA7555F



SOP8-P-225-1.27

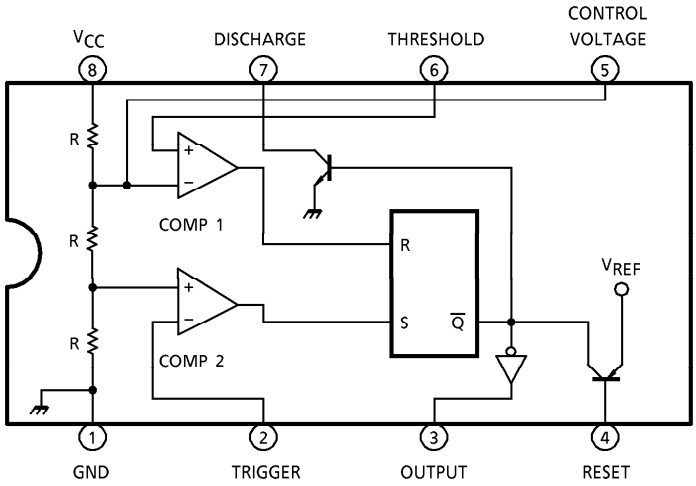
Weight DIP8-P-300-2.54 : 0.5g (Typ.)
SOP8-P-225-1.27 : 0.1g (Typ.)

FEATURES

- Timing from microseconds through hours
- Operates in both astable and monostable modes
- Adjustable duty cycle
- Output can source or sink 200mA
- Output TTL compatible
- Temperature stability of 0.005% / °C (Typ.)
- Normally ON or normally OFF output
- Direct replacement for SE555 / NE555

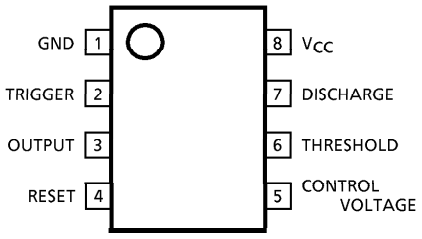
961001EBA2

BLOCK DIAGRAM

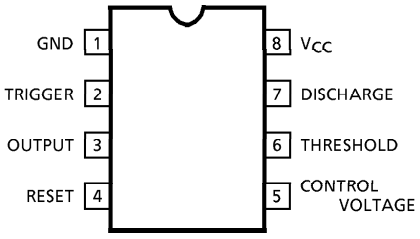


PIN CONNECTION (TOP VIEW)

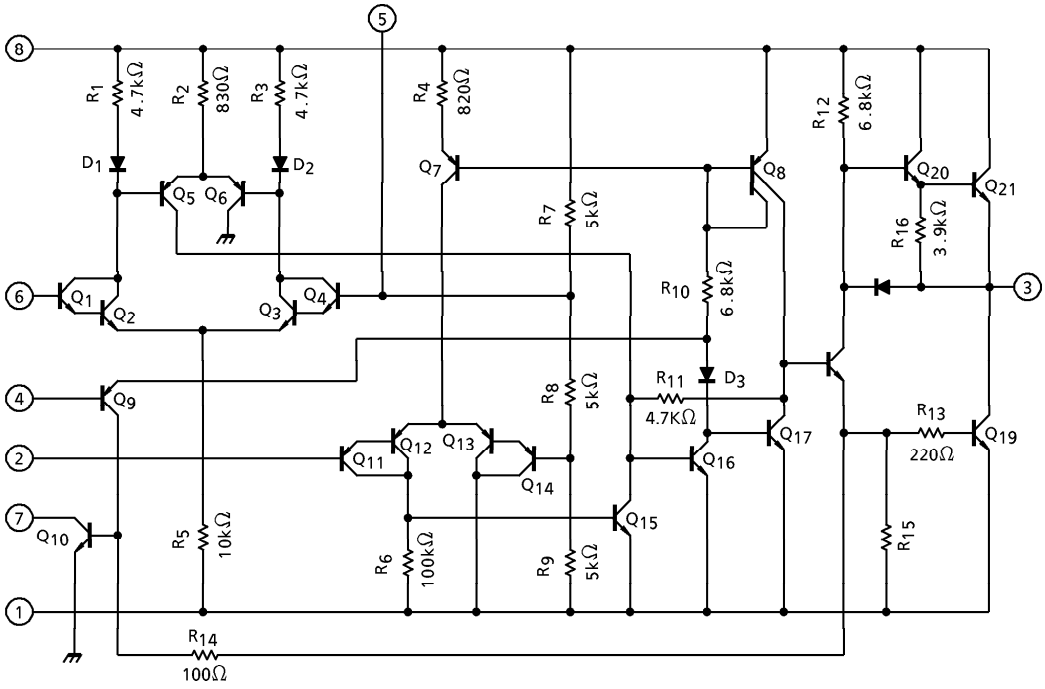
TA7555F



TA7555P



EQUIVALENT CIRCUIT



APPLICATIONS
- DC-DC CONVERTER
- LINEAR RAMP GENERATOR
- PULSE GENERATOR
- PRECISION TIMING
- SEQUENTIAL TIMING
- TIMING DELAY GENERATION
- PULSE WIDTH MODULATION
- PULSE

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage	TA7555P	V_{CC}	18	V
	TA7555F		15	
Power Dissipation	TA7555P	P_D	600	mW
	TA7555F		240	
Operating Temperature		T_{opr}	−30~75	°C
Storage Temperature		T_{stg}	−55~125	°C

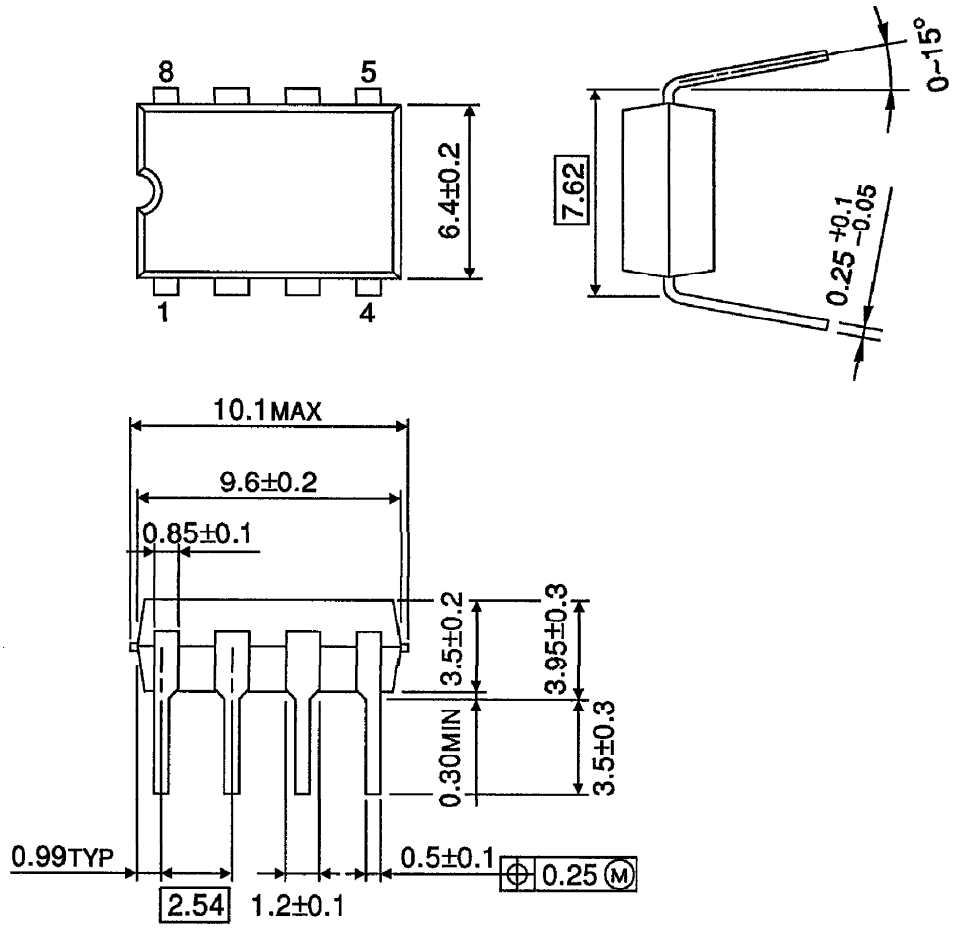
ELECTRICAL CHARACTERISTICS (Ta = 25°C, V_{CC} = 5~15V)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{CC}	—	—		4.5	—	16	V
Supply Current	I_{CC}	—	V_{CC} = 5V, R_L = ∞, Low state		—	3	6	mA
			V_{CC} = 15V, R_L = ∞, Low state		—	10	15	
Control Voltage	V_{CT}	—	V_{CC} = 5V		2.6	3.33	4	V
			V_{CC} = 15V		9	10	11	
Threshold Voltage	V_{TH}	—	—		—	(2 / 3) V_{CC}	—	V
Threshold Current	I_{TH}	—	V_{CC} = 5V, 15V		—	0.1	0.25	μA
Trigger Voltage	V_{TG}	—	V_{CC} = 5V		—	1.67	—	V
			V_{CC} = 15V		—	5	—	
Trigger Current	I_{TG}	—	—		—	0.5	—	μA
Reset Voltage	V_{RT}	—	—		0.4	0.7	1.0	V
Reset Current	I_{RT}	—	—		—	0.1	—	mA
Initial Accuracy	—	—	Monostable mode R_A, R_B = 1kΩ~100kΩ C = 0.1μF, V_{CC} = 15V		—	1	—	%
Drift with Temperature					—	50	—	ppm / °C
Drift with Supply Voltage					—	0.1	—	% / V
Output Voltage ("L" Level)	V_{OL}	—	V_{CC} = 15V	I_{sink} = 10mA	—	0.1	0.25	V
				I_{sink} = 50mA	—	0.4	0.75	
				I_{sink} = 100mA	—	2	2.5	
				I_{sink} = 200mA	—	2.5	—	
			V_{CC} = 5V	I_{sink} = 5mA	—	0.25	0.35	
				I_{sink} = 8mA	—	—	—	
Output Voltage ("H" Level)	V_{OH}	—	V_{CC} = 15V	I_{source} = 100mA	12.75	13.3	—	V
				I_{source} = 200mA	—	12.5	—	
			V_{CC} = 5V	I_{source} = 100mA	2.75	3.3	—	
Rise Time	t_r	—	—		—	100	—	ns
Fall Time	t_f	—			—	100	—	ns

OUTLINE DRAWING

DIP8-P-300-2.54

Unit : mm

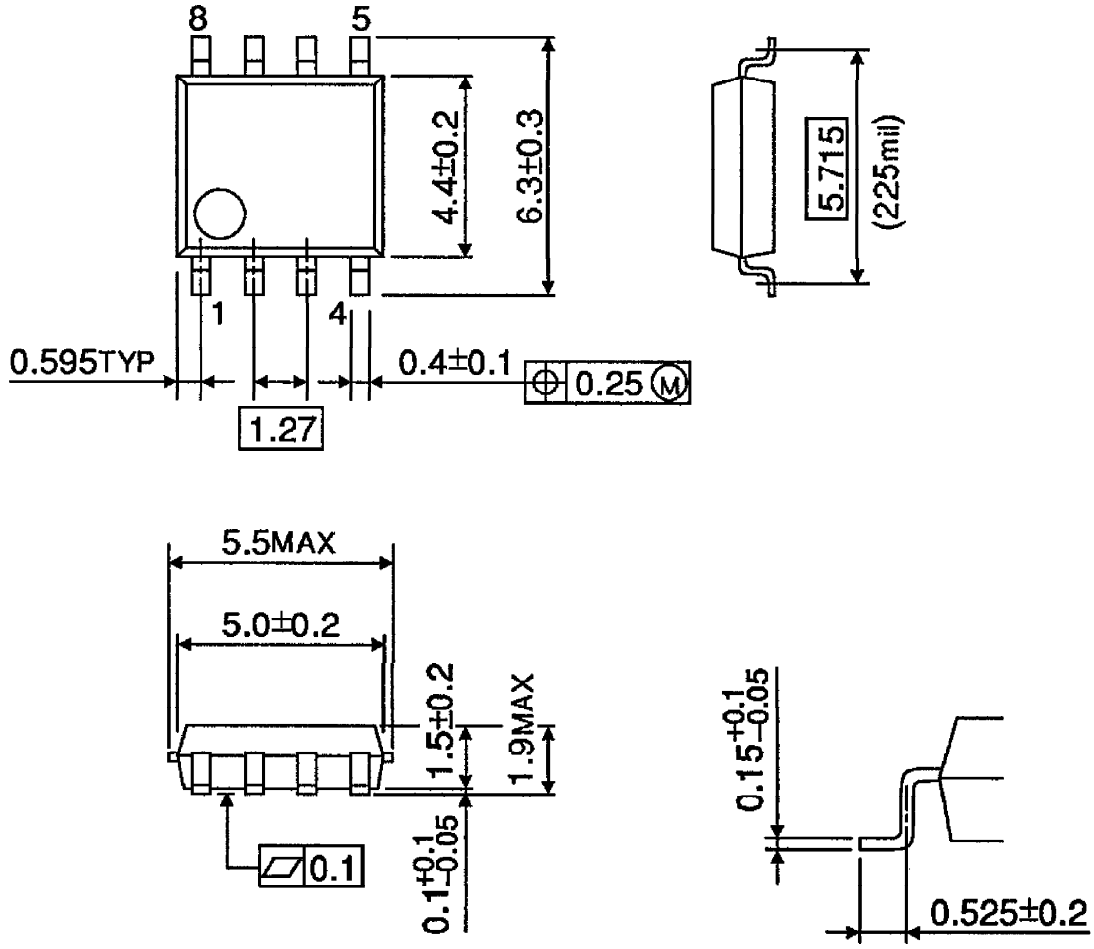


Weight : 0.5g (Typ.)

OUTLINE DRAWING

SOP8-P-225-1.27

Unit : mm



Weight : 0.1g (Typ.)