

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 resetting, if desired.

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

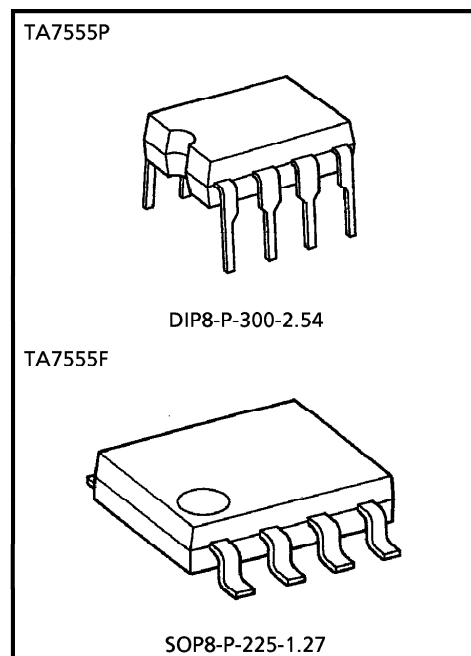
In the astable mode of operation, the frequency and duty cycle are accurately and independently controlled with two external resistors and one capacitor.

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.

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

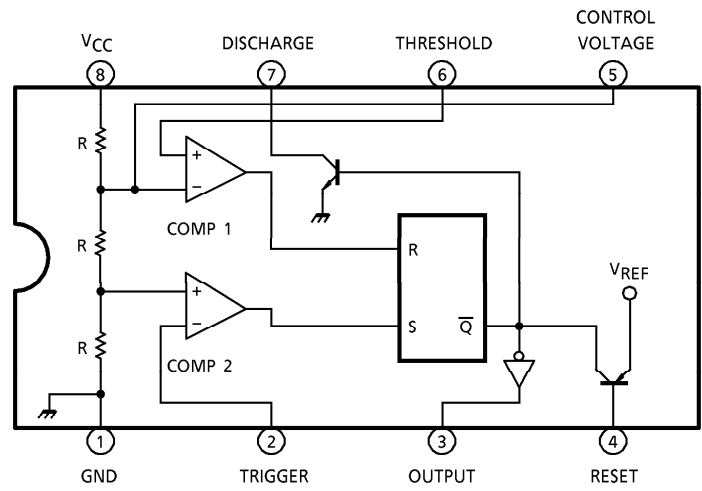


Weight DIP8-P-300-2.54 : 0.5g (Typ.)
SOP8-P-225-1.27 : 0.1g (Typ.)

961001EBA2

- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The products described in this document are subject to foreign exchange and foreign trade control laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

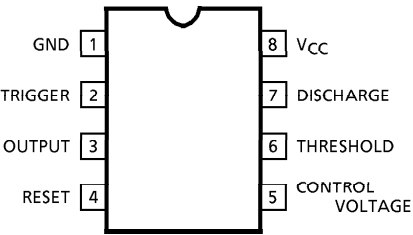
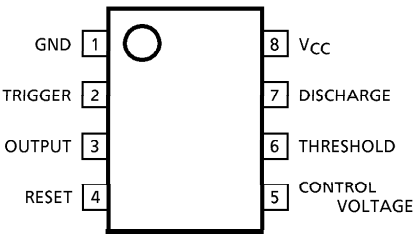
BLOCK DIAGRAM



PIN CONNECTION (TOP VIEW)

TA7555F

TA7555P



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

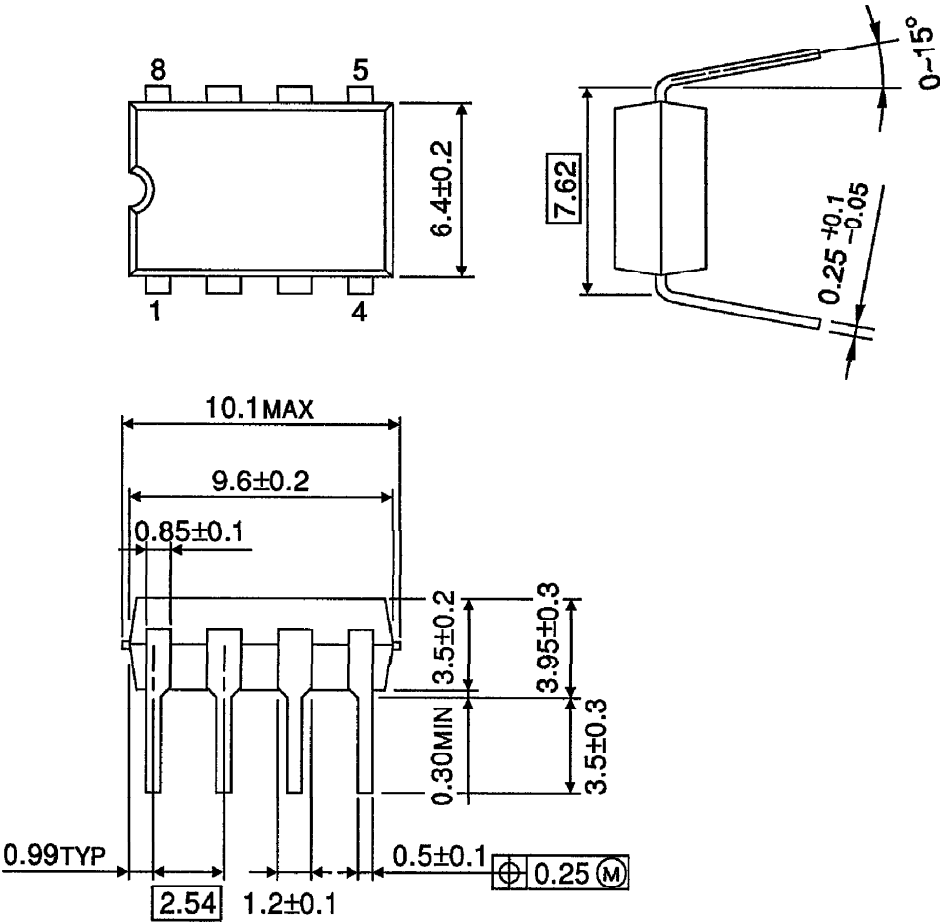
CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage	TA7555P	V _{CC}	18	V
	TA7555F		15	
Power Dissipation	TA7555P	P _D	600	mW
	TA7555F		240	
Operating Temperature		T _{opr}	− 30~75	°C
Storage Temperature		T _{stg}	− 55~125	°C

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

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	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	V
				I _{sink} = 50mA	—	0.4	
				I _{sink} = 100mA	—	2	
				I _{sink} = 200mA	—	2.5	
			V _{CC} = 5V	I _{sink} = 5mA	—	0.25	
				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

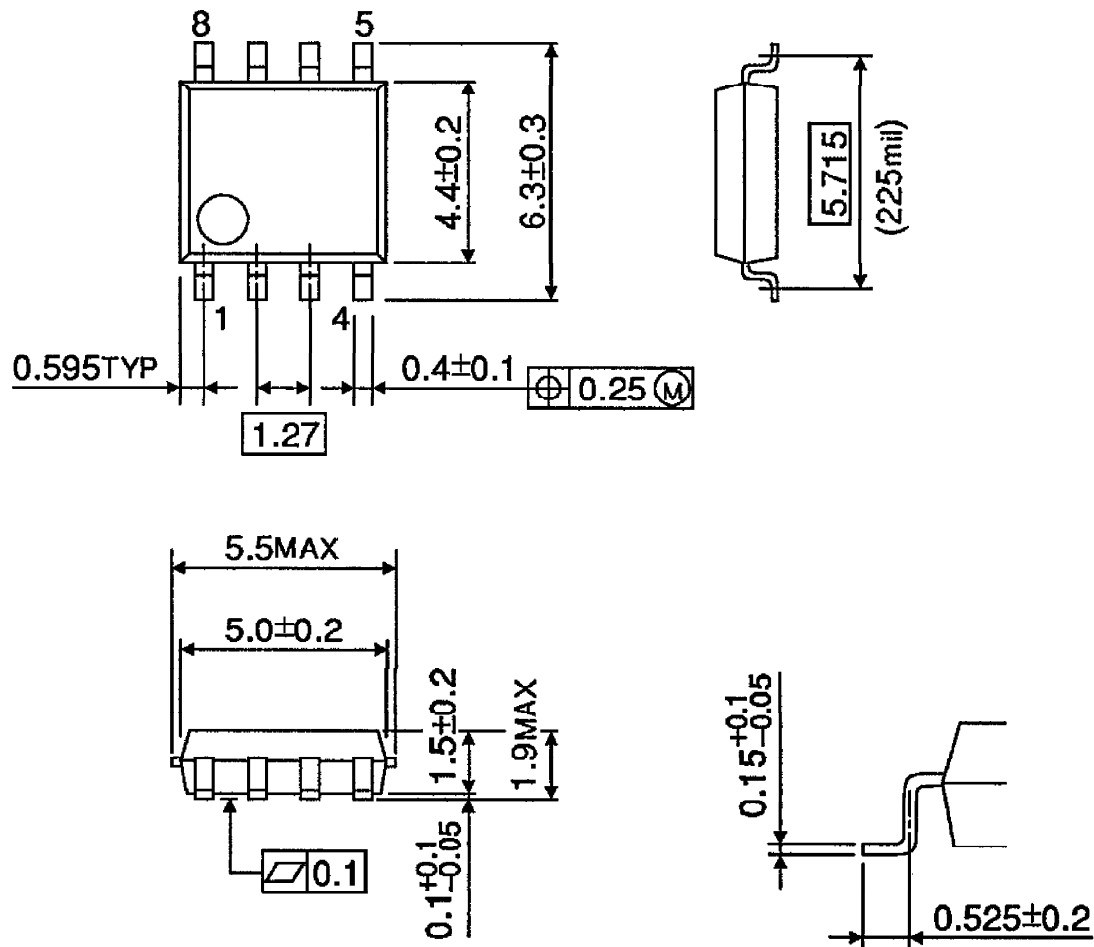
Unit : mm



Weight : 0.5g (Typ.)

OUTLINE DRAWING
SOP8-P-225-1.27

Unit : mm



Weight : 0.1g (Typ.)