

**TOSHIBA**

**TA7330P/F**

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA7330P, TA7330F

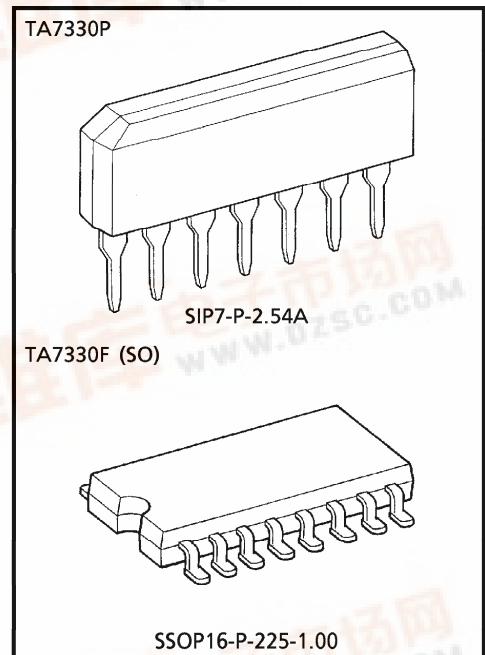
## PREAMPLIFIER WITH ALC CIRCUIT FOR MINI / MICRO CASSETTE TAPE RECORDER

The TA7330P and TA7330F are preamplifier for 3V or 4.5V battery use.

It consists of low noise preamplifier and ALC (Automatic Level Control) circuit, and is suitable for mini / micro cassette tape recorder applications.

### FEATURES

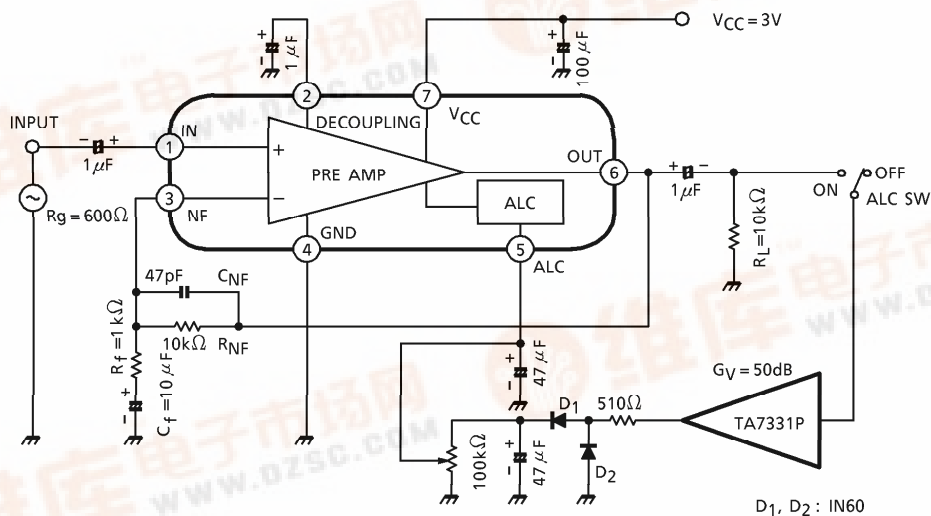
- Low supply voltage use :  $V_{CC(opr)} = 2 \sim 5V$  ( $T_a = 25^\circ C$ )
- Low noise :  $V_{ni} = 1 \mu V_{rms}$  (Typ.)
- Wide ALC range :  $W_{ALC} = 40dB$  (Typ.)
- Low quiescent current :  $I_{CCQ} = 0.75mA$  (Typ.) ( $V_{CC} = 3V, T_a = 25^\circ C$ )
- TA7330F (SO) is standard model of flat package.



Weight  
 SIP7-P-2.54A : 0.72g (Typ.)  
 SSOP16-P-225-1.00 : 0.14g (Typ.)

### TEST CIRCUIT / BLOCK DIAGRAM

TA7330P

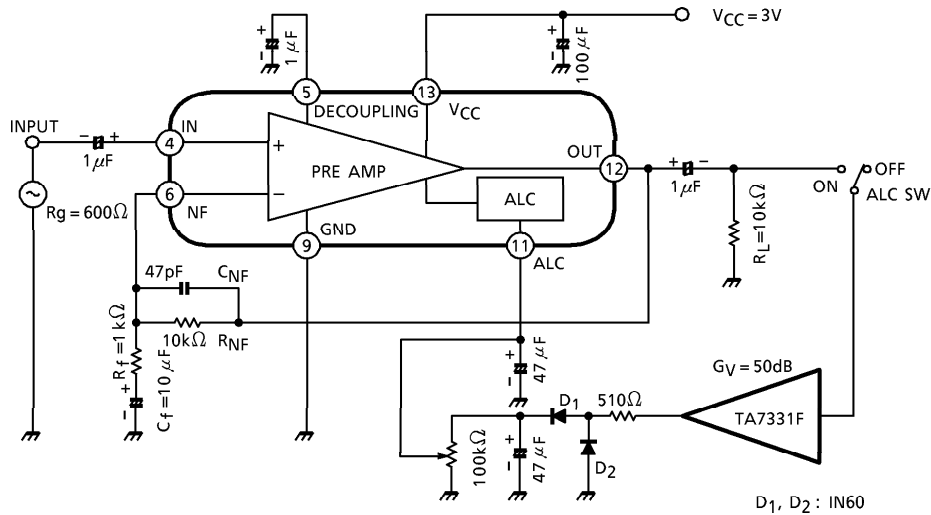


961001EBA2

● 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.



TA7330F



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	8	V
Operating Supply Voltage	V <sub>CC</sub>	5	V
Power Dissipation	TA7330P	P <sub>D</sub> (Note)	mW
	TA7330F		
Operating Temperature	T <sub>opr</sub>	– 25~75	°C
		– 25~60	
Storage Temperature	T <sub>stg</sub>	– 55~150	°C

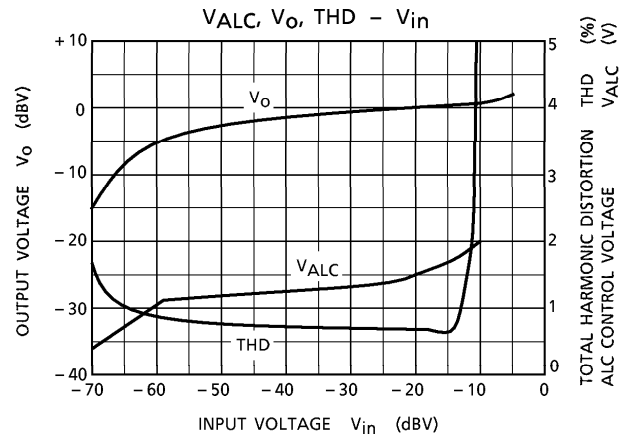
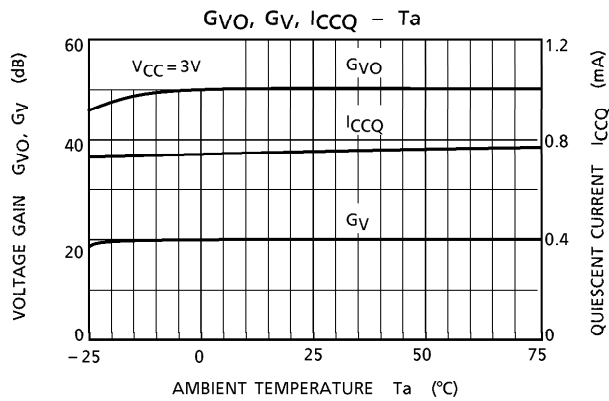
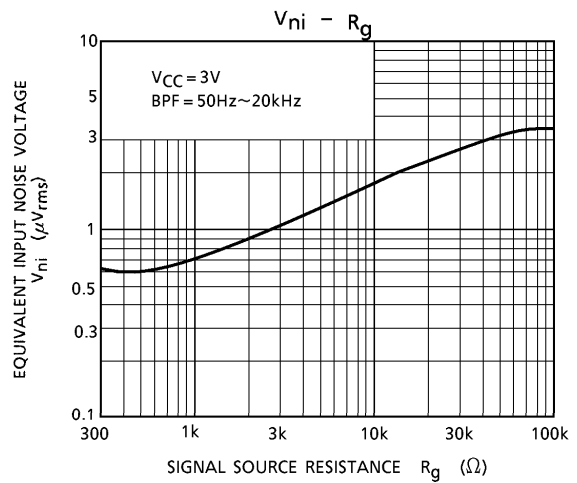
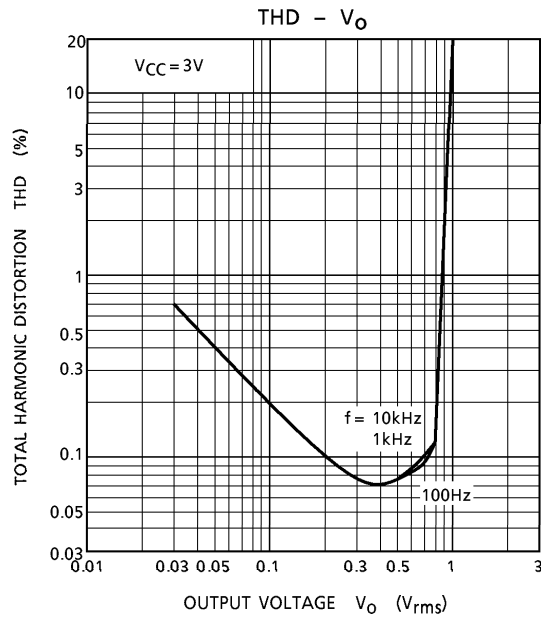
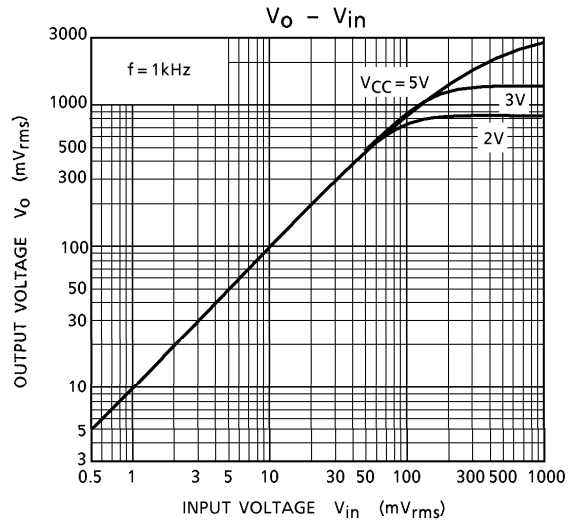
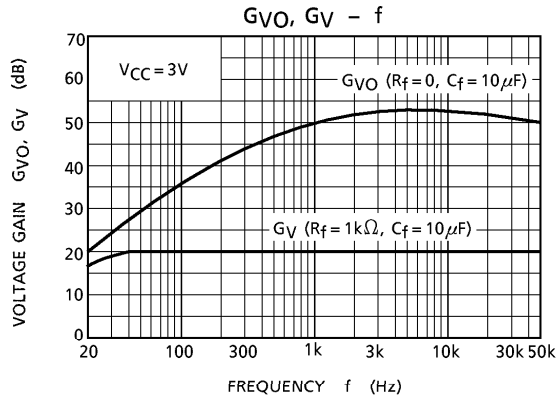
(Note) Derated above Ta = 25°C in the proportion of 3.2mW/°C for the TA7330P and 2.8mW/°C for the TA7330F.

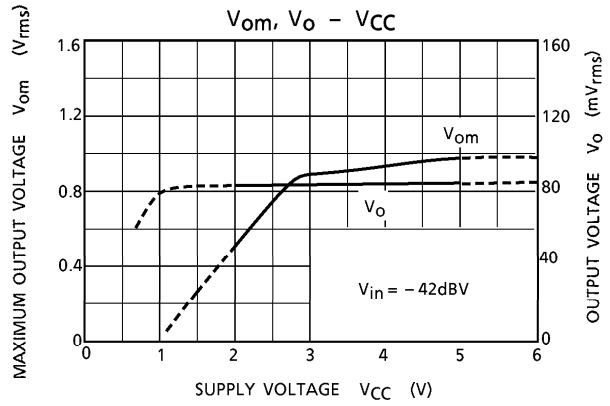
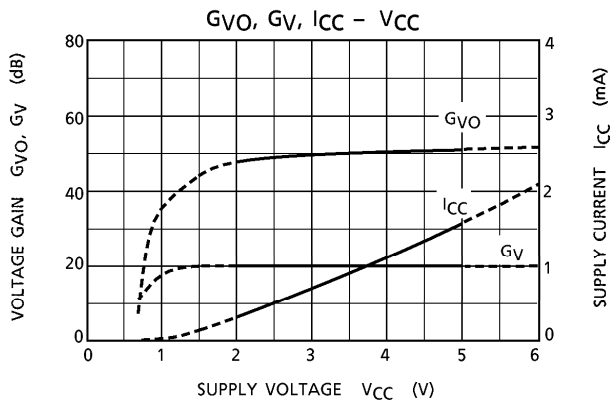
ELECTRICAL CHARACTERISTICS (Unless otherwise specified, V<sub>CC</sub> = 3V, Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I <sub>CCQ</sub> (1)	—		—	0.75	1	mA
	I <sub>CCQ</sub> (2)	—	V <sub>CC</sub> = 4.5V	—	1.38	1.8	
Open Loop Voltage Gain	G <sub>VO</sub>	—	f = 1kHz	40	50	—	dB
Closed Loop Voltage Gain	G <sub>V</sub>	—	f = 1kHz, R <sub>NF</sub> = 10kΩ R <sub>f</sub> = 1kΩ, R <sub>L</sub> = 10kΩ	—	20	—	dB
Maximum Output Voltage	V <sub>om</sub>	—	f = 1kHz, THD = 1%, R <sub>L</sub> = 10kΩ	0.5	0.9	—	V <sub>rms</sub>
Input Resistance	R <sub>IN</sub>	—	f = 1kHz, R <sub>NF</sub> = 10kΩ, R <sub>f</sub> = 1kΩ	—	30	—	kΩ
Equivalent Input Noise Voltage	V <sub>ni</sub>	—	R <sub>g</sub> = 2.2kΩ, BPF = 50Hz~20kHz	—	1.0	2.5	µV <sub>rms</sub>
ALC Range	W <sub>ALC</sub>	—	f = 1kHz, ALC ON	—	40	—	dB

961001EBA2'

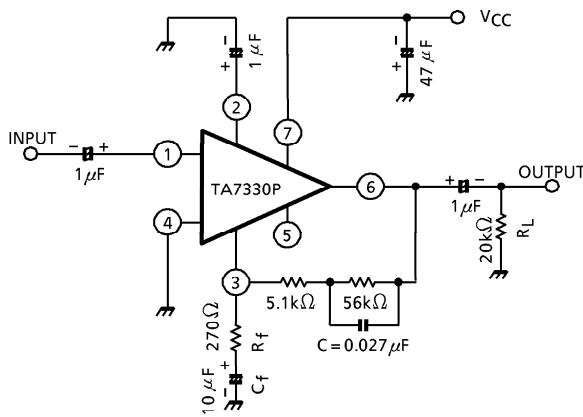
- The products described in this document are subject to foreign exchange and foreign trade control laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property 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.



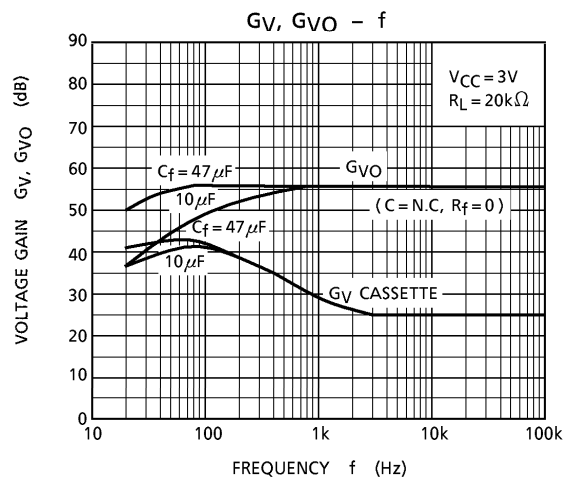
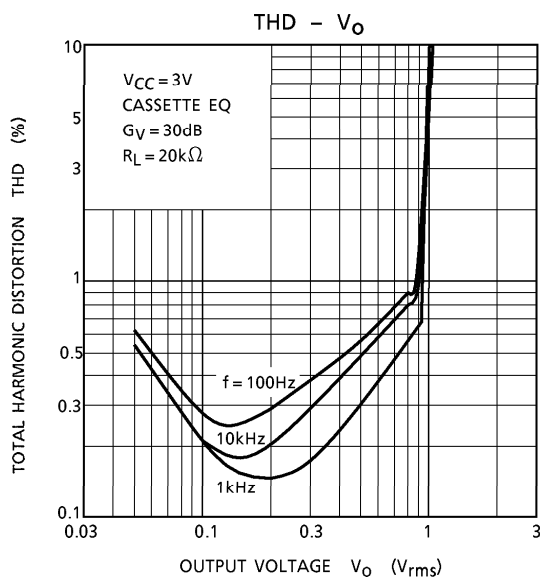
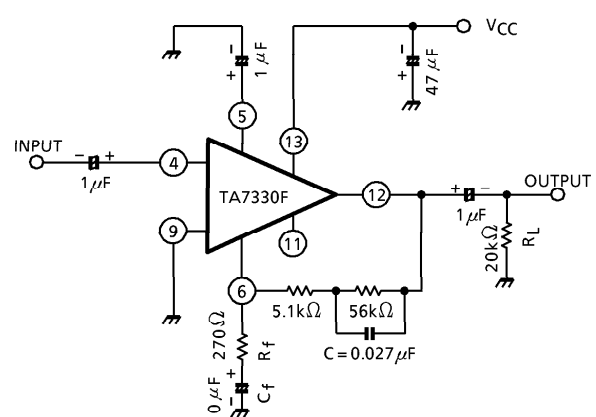


**APPLICATION CIRCUIT CASSETTE EQUALIZER**

TA7330P

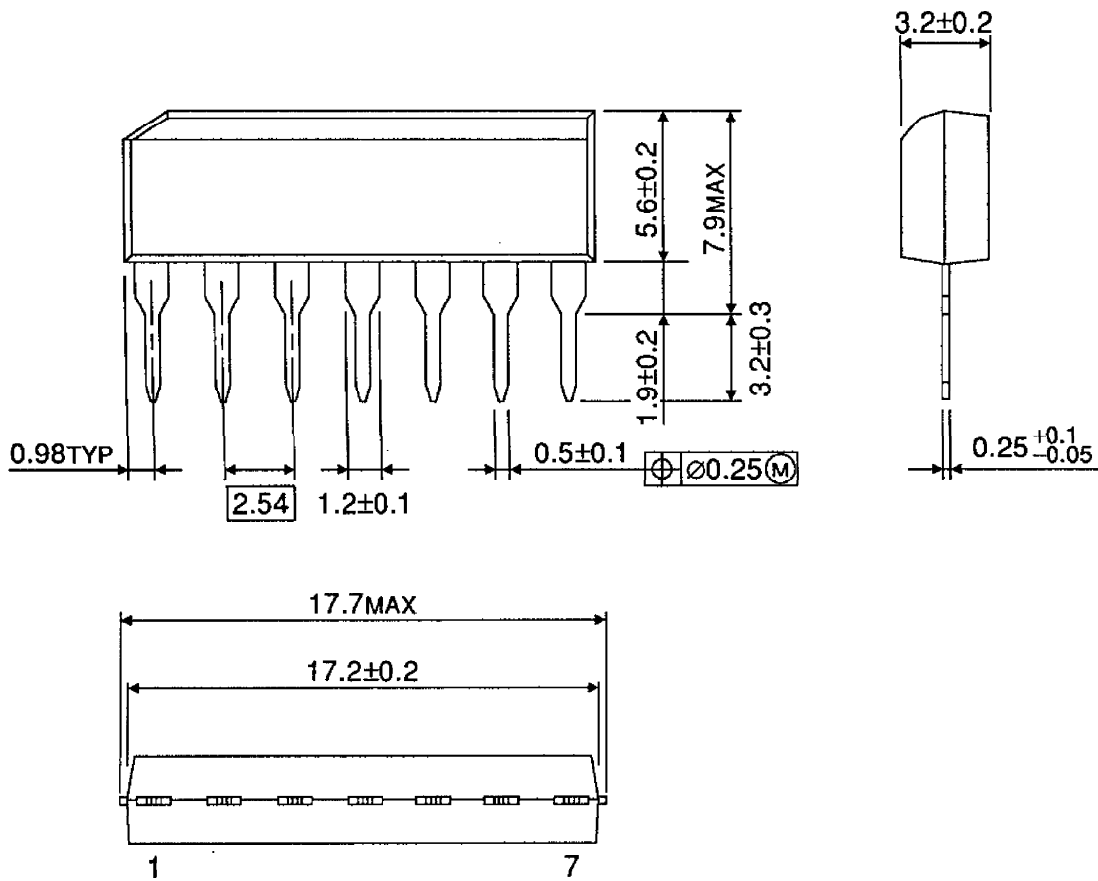


TA7330F



**OUTLINE DRAWING**  
SIP7-P-2.54A

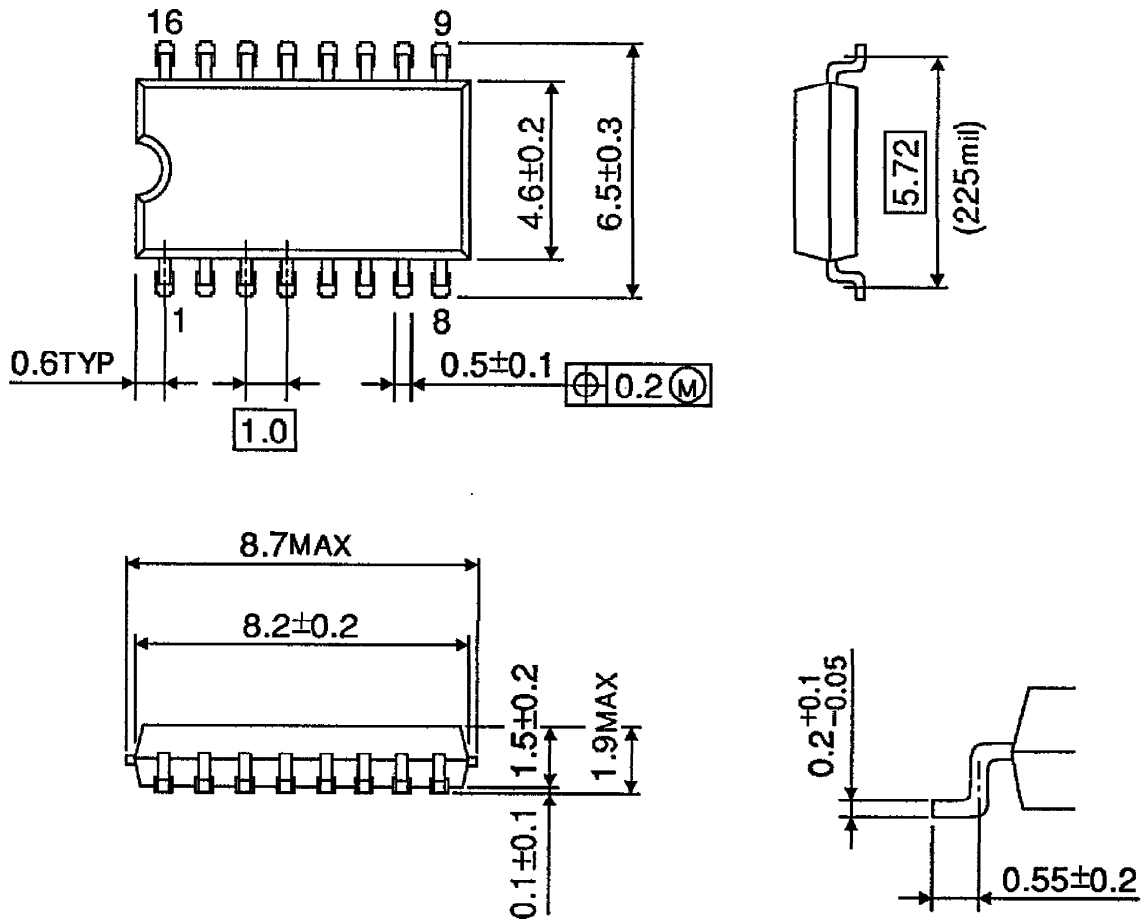
Unit : mm



Weight : 0.72g (Typ.)

OUTLINE DRAWING  
SSOP16-P-225-1.00

Unit : mm



Weight : 0.14g (Typ.)