

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

**TA75064P, TA75064F****QUAD OPERATIONAL AMPLIFIER**

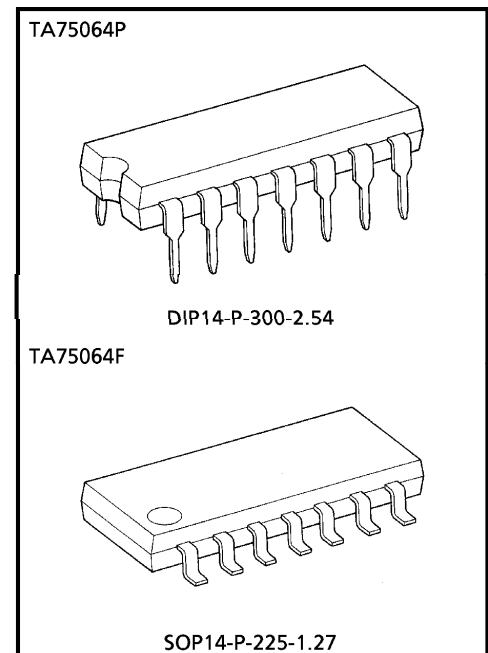
The TA75064P and TA75064F are J-FET input low-power operational amplifiers with low input bias and offset current and fast slew rate.

The TA75064P is pin compatible with the TA75902P and 324. The TA75064F is mini-flat package.

The TA75064P series are excellent choice for active filters, integrators, buffers and sample-and-hold circuits.

**FEATURES**

- Low Supply Current : 1.0mA Max.
- Low Input Bias Current : 400pA Max.
- Low Input Offset Current : 200pA Max.
- High Slew Rate : 3.5V /  $\mu$ s
- Wide Supply Voltage Range :  $\pm 2 \sim \pm 18$ V
- Internal Frequency Compensation
- Output Short Circuit Protection

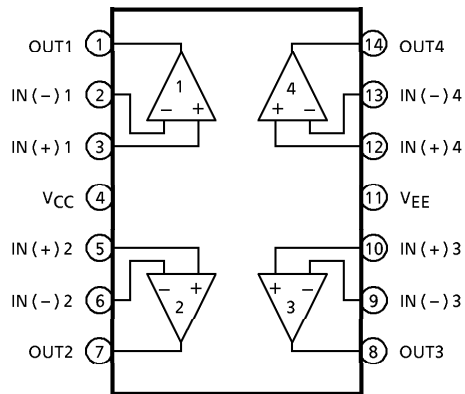
**Weight**

DIP14-P-300-2.54 : 1.0g (Typ.)  
 SOP14-P-225-1.27 : 0.2g (Typ.)

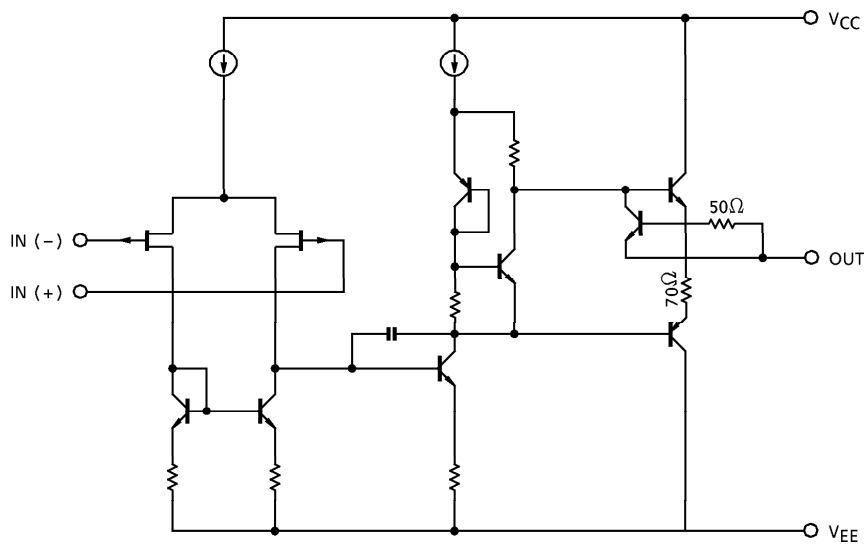
961001EBA1

- 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.

**PIN CONNECTION (TOP VIEW)**



**EQUIVALENT CIRCUIT**



## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	18	V
	V <sub>EE</sub>	- 18	
Differential Input Voltage	DV <sub>IN</sub>	± 30	V
Input Voltage	V <sub>IN</sub>	± 15	V
Power Dissipation	P <sub>D</sub>	625	mW
		280	
Operating Temperature	T <sub>opr</sub>	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 55~125	°C

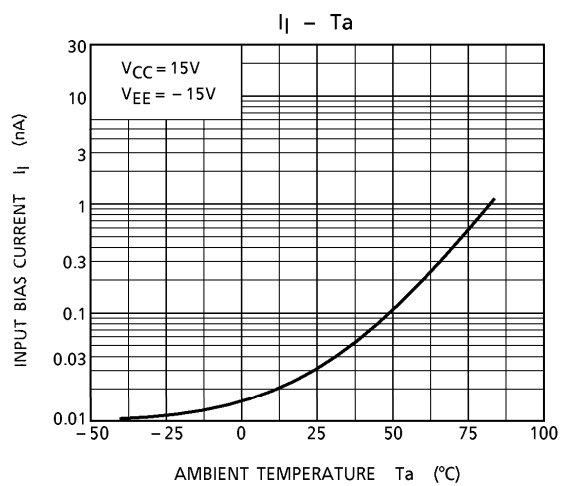
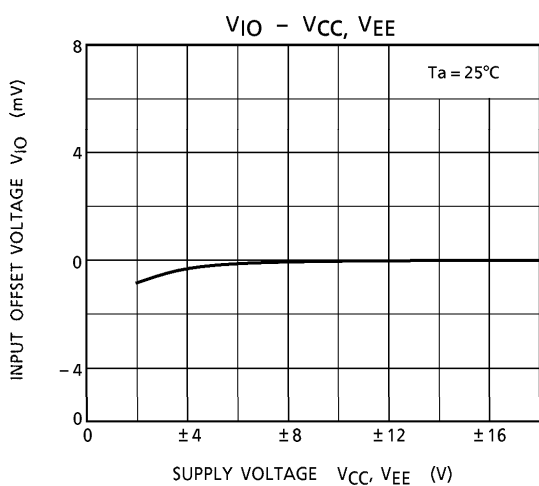
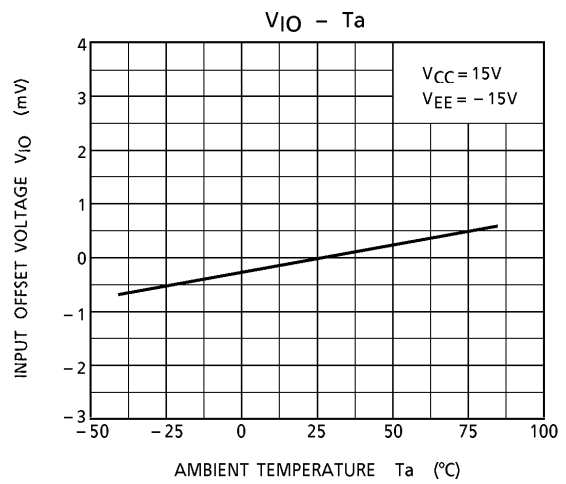
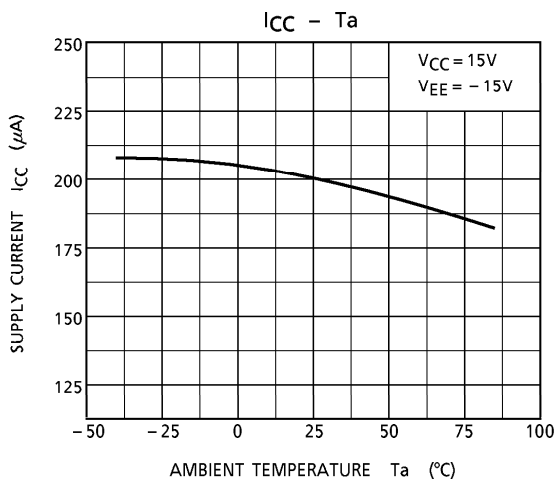
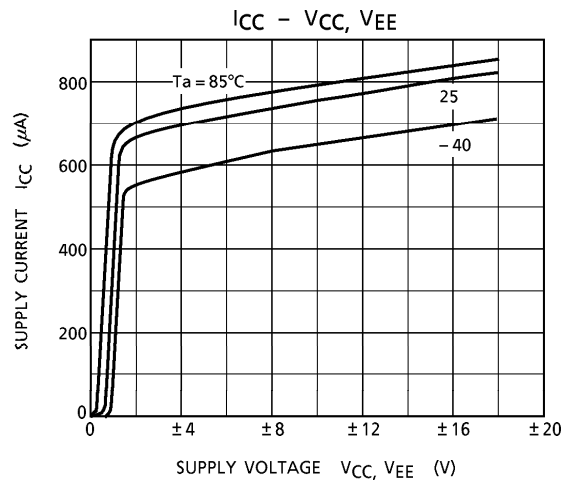
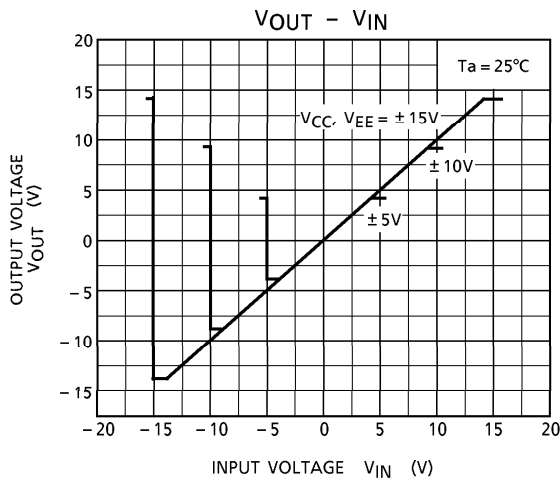
ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 15V, V<sub>EE</sub> = - 15V, Ta = 25°C)

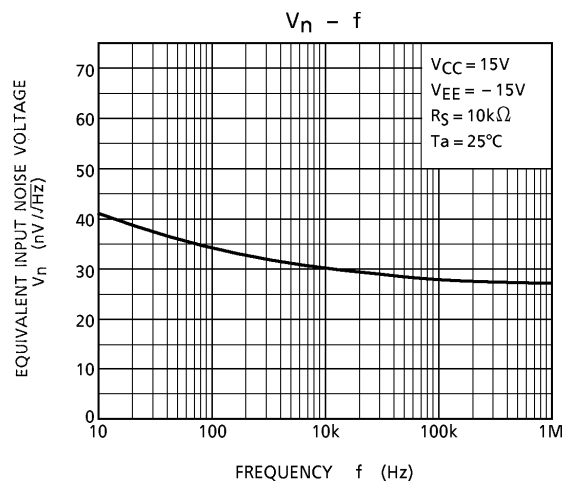
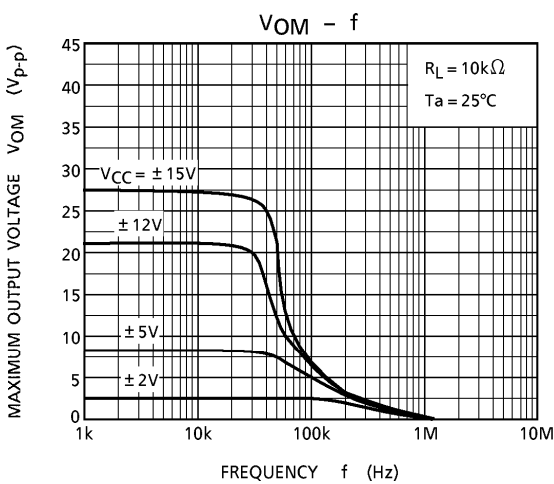
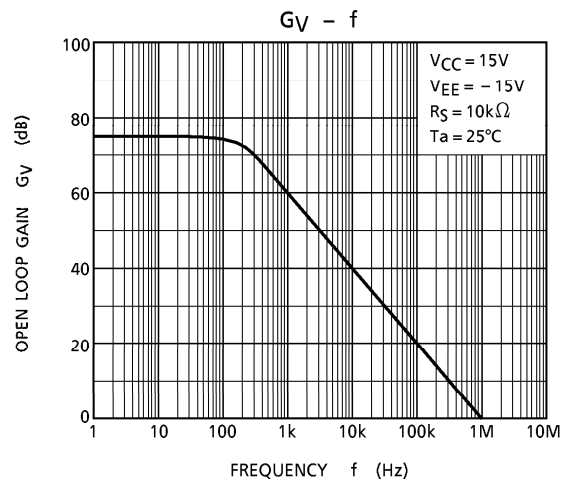
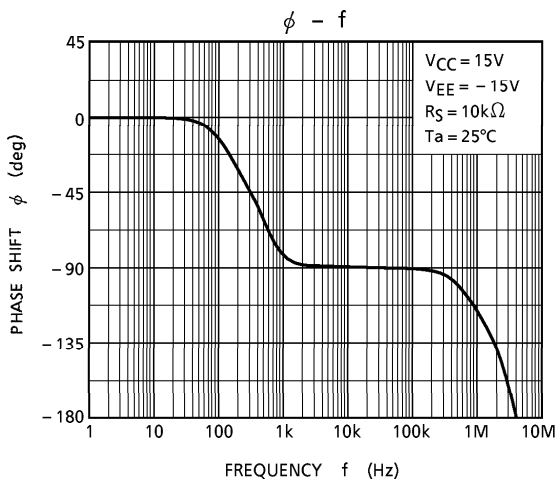
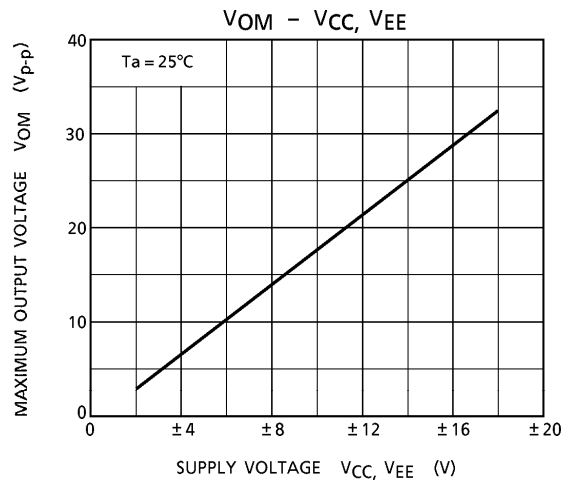
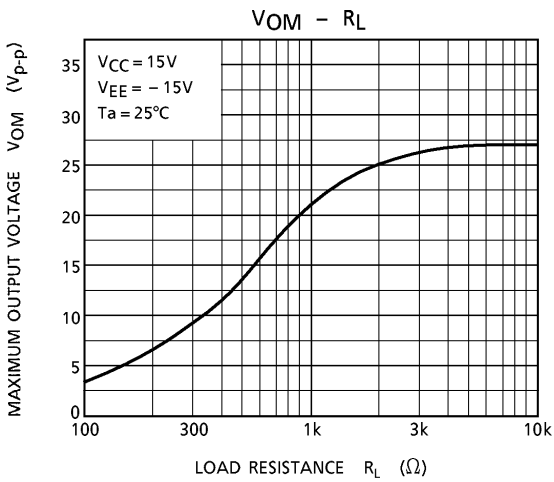
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	—	R <sub>g</sub> ≤ 10kΩ	—	3	15	mV
TC of Input Offset Voltage	TCV <sub>IO</sub>	—	—	—	10	—	μV/°C
Input Offset Current	I <sub>IO</sub>	—	—	—	5	200	pA
Input Bias Current	I <sub>I</sub>	—	—	—	30	400	pA
Common Mode Input Voltage	CMV <sub>IN</sub>	—	—	± 11.5	± 12	—	V
Maximum Output Voltage	V <sub>OM</sub>	—	R <sub>L</sub> = 10kΩ	20	27	—	V <sub>p-p</sub>
Voltage Gain (Open Loop)	G <sub>V</sub>	—	V <sub>OUT</sub> = ± 10V, R <sub>L</sub> = 10kΩ	3	6	—	V/mV
Unity Gain Cross Frequency	f <sub>T</sub>	—	Open Loop, R <sub>L</sub> = 10kΩ	—	1	—	MHz
Input Resistance	R <sub>IN</sub>	—	—	—	10 <sup>12</sup>	—	Ω
Common Mode Input Signal Rejection Ratio	CMRR	—	R <sub>g</sub> ≤ 10kΩ	70	76	—	dB
Supply Voltage Rejection Ratio	SVRR	—	R <sub>g</sub> ≤ 10kΩ	70	76	—	dB
Supply Current	I <sub>CC</sub> , I <sub>EE</sub>	—	Non load	—	800	1000	μA
Cross Talk		—	—	—	- 120	—	dB

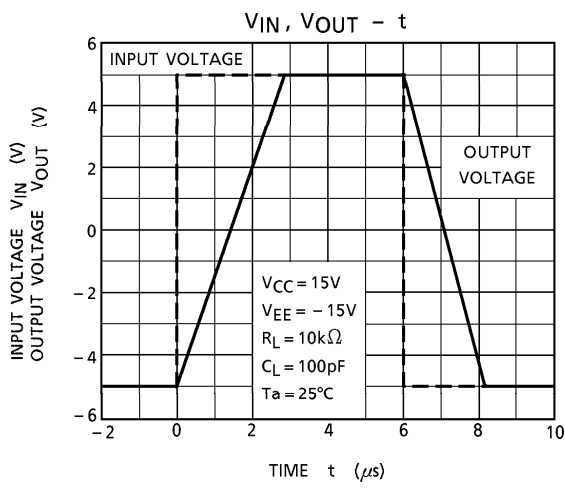
OPERATING CHARACTERISTICS (V<sub>CC</sub> = 15V, V<sub>EE</sub> = - 15V, Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Slew Rate	SR	—	V <sub>IN</sub> = 10V <sub>p-p</sub> , R <sub>L</sub> = 10kΩ C <sub>L</sub> = 100pF	—	3.5	—	V/μs
Equivalent Input Noise Voltage	V <sub>n</sub>	—	R <sub>S</sub> = 100Ω, f = 1kHz	—	42	—	nV/√Hz

CHARACTERISTIC

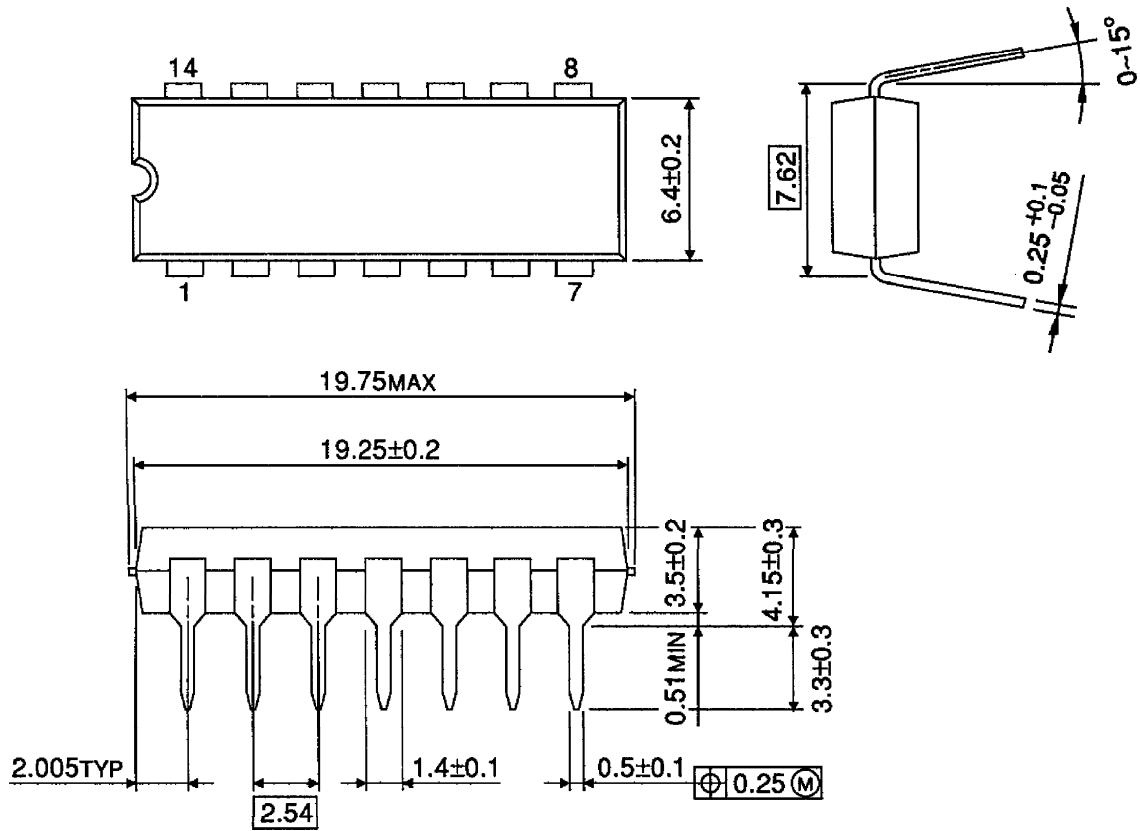






OUTLINE DRAWING  
DIP14-P-300-2.54

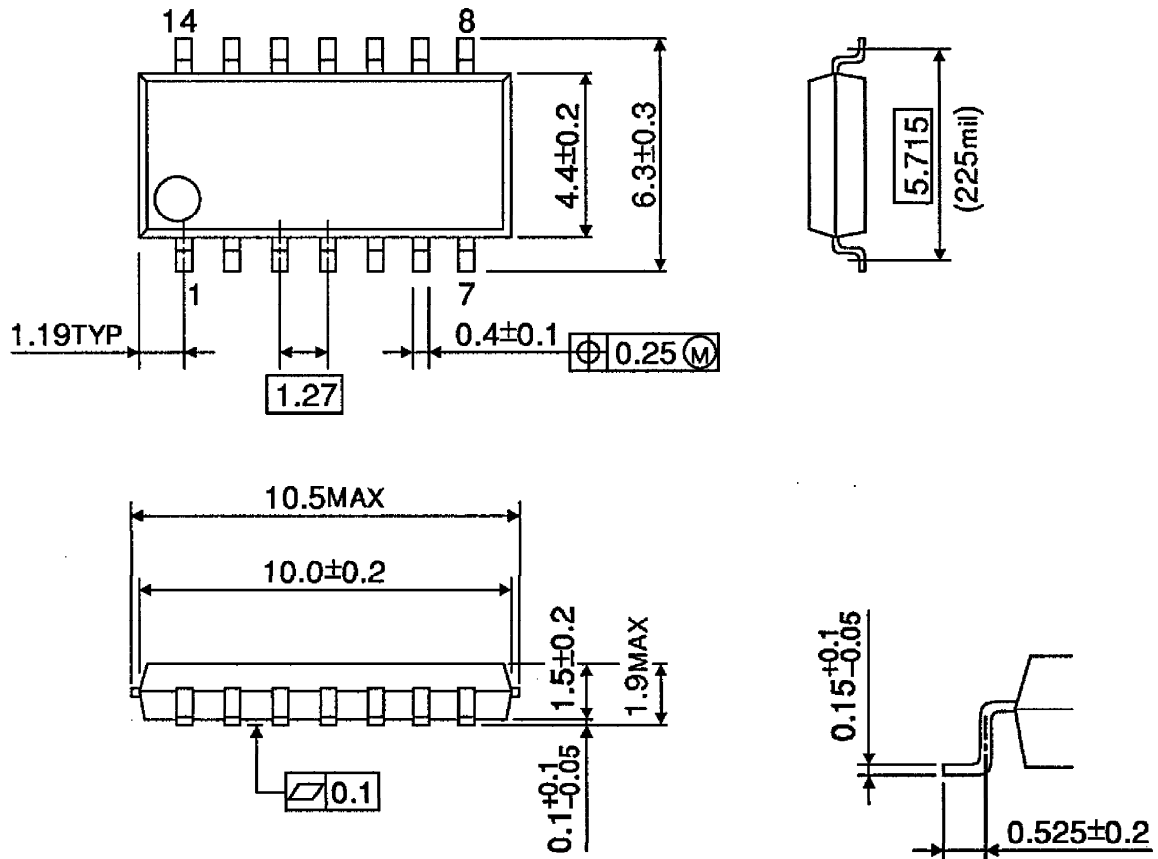
Unit : mm



Weight : 1.0g (Typ.)

**OUTLINE DRAWING**  
SOP14-P-225-1.27

Unit : mm



Weight : 0.2g (Typ.)