

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

**TA75393P, TA75393PA, TA75393S, TA75393F, TA75393FB**

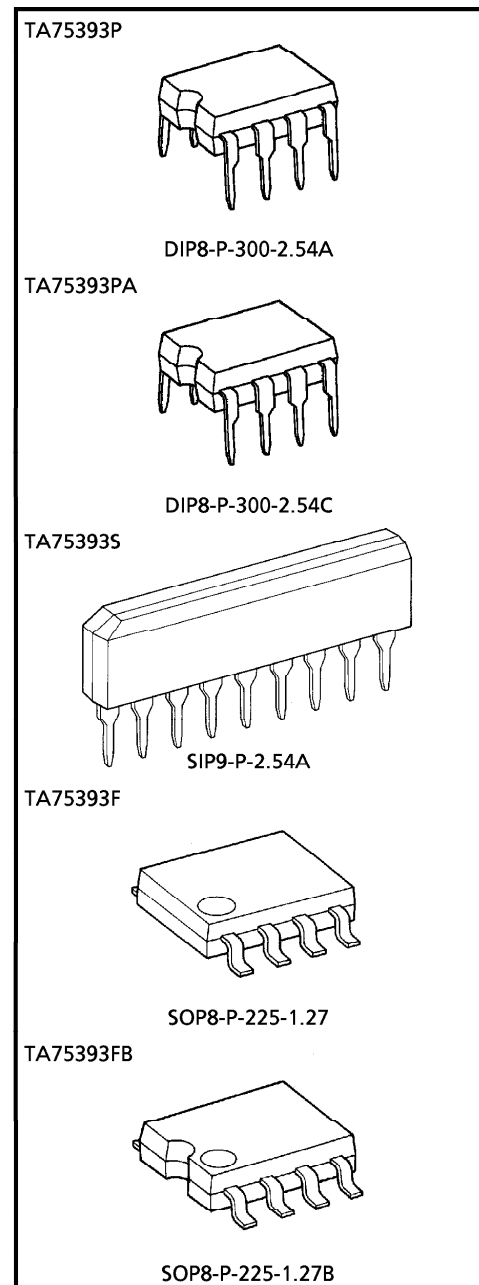
**DUAL COMPARATOR**

This device consist of two independent voltage comparators that designed to operate from a single power supply over a wide range of voltage. Normal Operation from dual supplies is also to be guaranteed on voltage range from 2V to 36V.  $V_{CC}$  is necessary at least more 1.5V than the input common mode voltage. The output can be connected to other open collector outputs to achieve Wired-OR relation ship.

**FEATURES**

- Be possible to operate at the wide range single or two supply voltage.  
2~36V or  $\pm 1\sim 18V$
- Low supply current : 0.8mA (Typ.)
- Low input offset voltage :  $\pm 2mV$  (Typ.)
- Wide common mode input voltage :  $0\sim V_{CC} - 1.5V$
- Output is compatible with TTL, DTL, MOS and C-MOS.
- Output is open collector and wired-OR possible.

<b>Weight</b>	
DIP8-P-300-2.54A	: 0.5g (Typ.)
DIP8-P-300-2.54C	: 0.6g (Typ.)
SIP9-P-2.54A	: 0.9g (Typ.)
SOP8-P-225-1.27	: 0.1g (Typ.)
SOP8-P-225-1.27B	: 0.1g (Typ.)

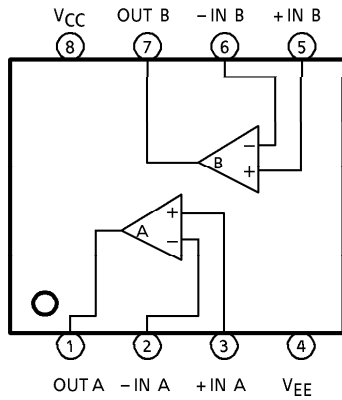


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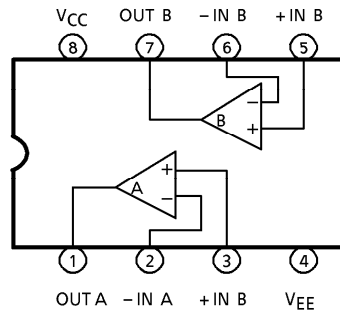
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**PIN CONNECTION (TOP VIEW)**

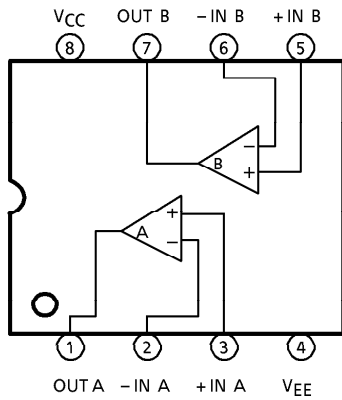
TA75393F



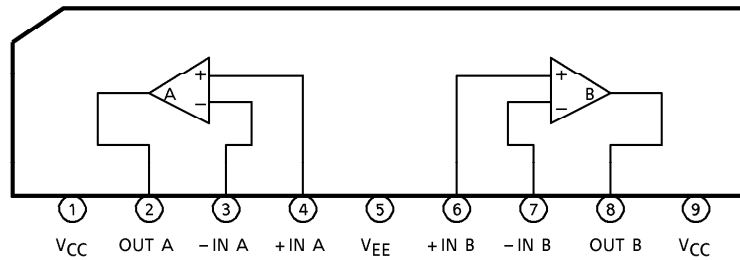
TA75393P, TA75393PA



TA75393FB



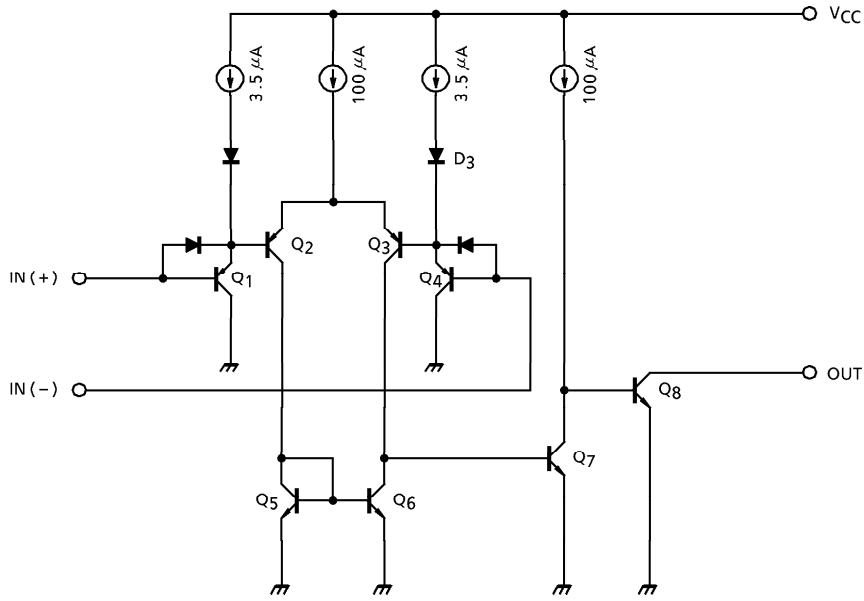
TA75393S



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EQUIVALENT CIRCUIT



## MAXIMUM RATINGS (Ta = 25°C)

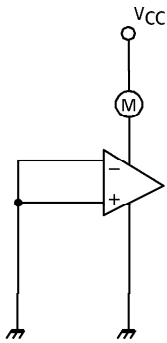
CHARACTERISTIC	SYMBOL	TA75393P TA75393PA TA75393S	TA75393F TA75393FB	UNIT
Supply Voltage	V <sub>CC</sub>	± 18 OR 36	± 18 OR 36	V
Differential Input Voltage	DV <sub>IN</sub>	± 36	± 36	V
Common Mode Input Voltage	CMV <sub>IN</sub>	- 0.3~V <sub>CC</sub>	- 0.3~V <sub>CC</sub>	V
Power Dissipation	P <sub>D</sub>	500	240	mW
Operating Temperature	T <sub>opr</sub>	- 40~85	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 55~125	- 55~125	°C

ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 5V, Ta = 25°C)

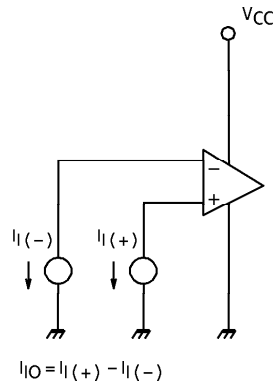
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	4	—	—	2	5	mV
Input Bias Current	I <sub>I</sub>	2	—	—	25	250	nA
Input Offset Current	I <sub>IO</sub>	2	—	—	5	50	nA
Common Mode Input Voltage	CMV <sub>IN</sub>	4	—	0	—	V <sub>CC</sub> - 1.5	V
Voltage Gain	G <sub>V</sub>	—	R <sub>L</sub> = 15kΩ	—	200	—	V / mV
Supply Current	I <sub>CC</sub>	1	No load	—	0.8	2	mA
Sink Current	I <sub>SINK</sub>	5	IN (+) = 0V, IN (-) = 1V V <sub>OL</sub> = 1.5V	6	16	—	mA
Output Voltage ("L" Level)	V <sub>OL</sub>	5	IN (+) = 0V, IN (-) = 1V I <sub>SINK</sub> = 3mA	—	0.2	0.4	V
Output Leak Current	I <sub>LEAK</sub>	3	IN (+) = 1V, IN (-) = 0V V <sub>O</sub> = 5V	—	0.1	—	nA
Response Time	t <sub>rsp</sub>	6	R <sub>L</sub> = 5.1kΩ, C <sub>L</sub> = 15pF	—	1.3	—	μs

**TEST CIRCUIT**

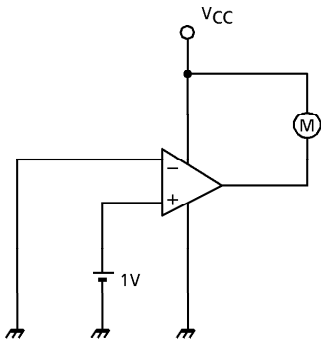
(1)  $I_{CC}$



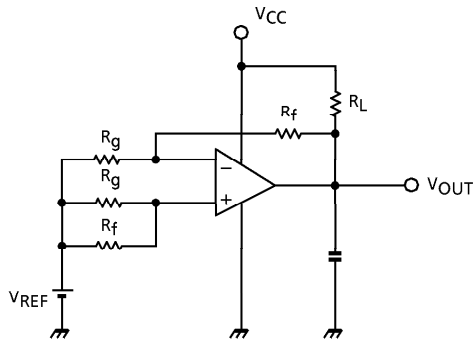
(2)  $I_I, I_{IO}$



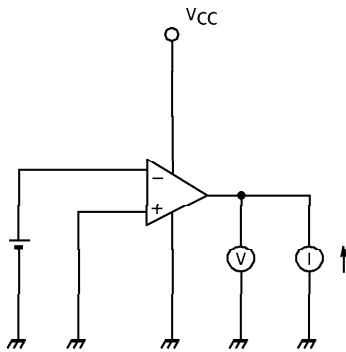
(3)  $I_{LEAK}$



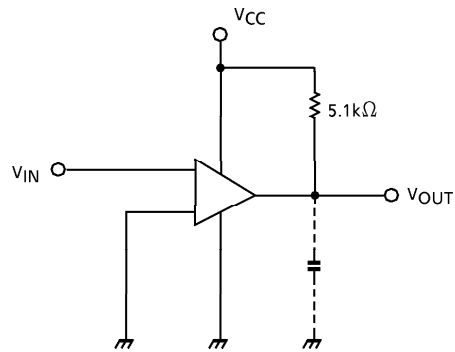
(4)  $V_{IO}, CMV_{IN}$



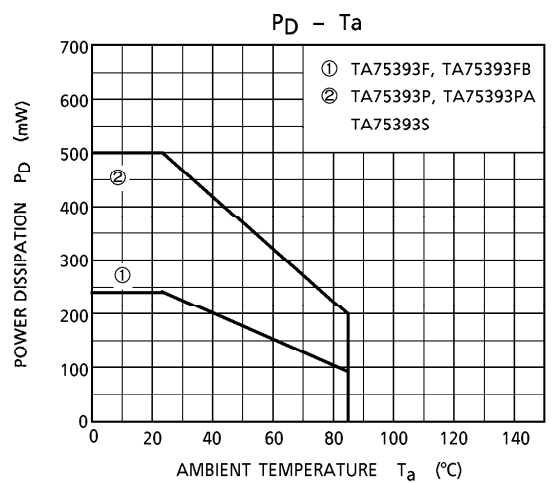
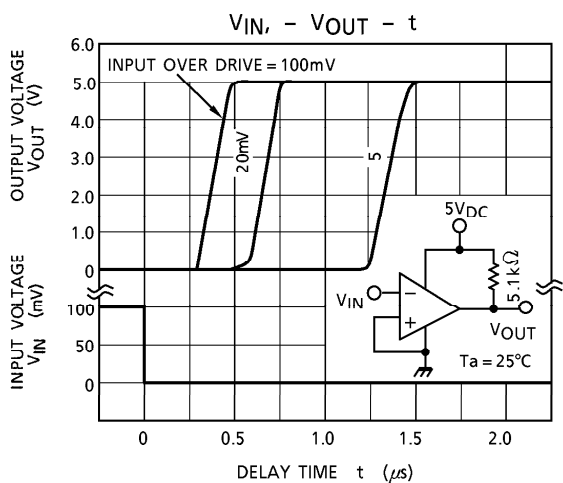
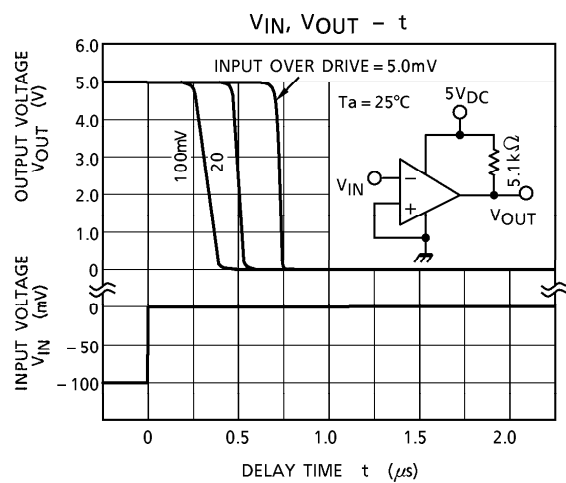
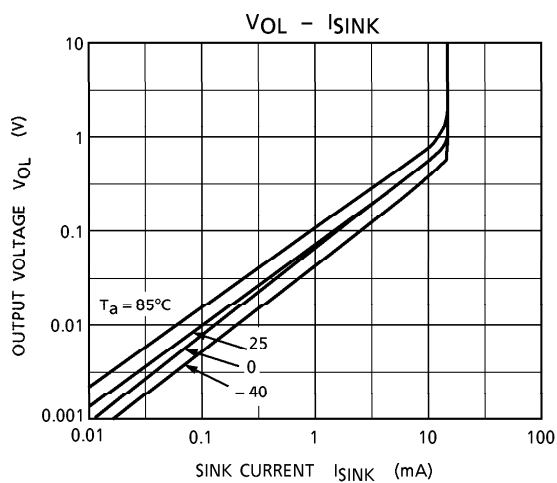
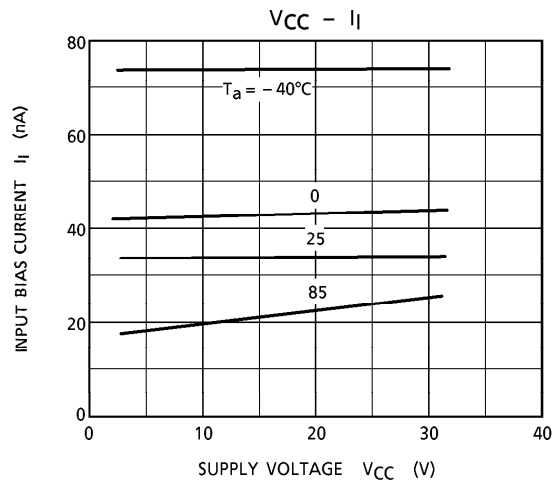
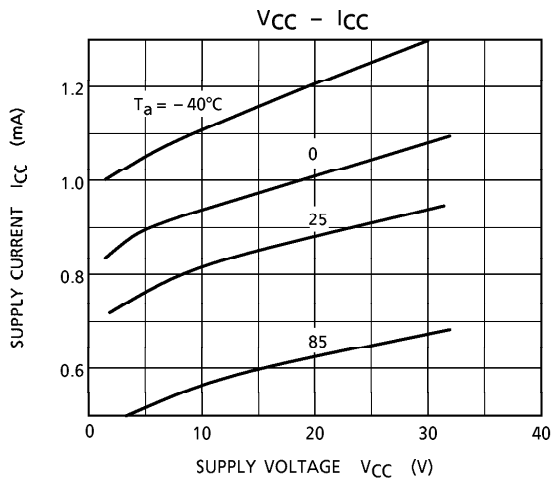
(5)  $I_{SINK}, V_{OL}$



(6)  $t_{rsp}$

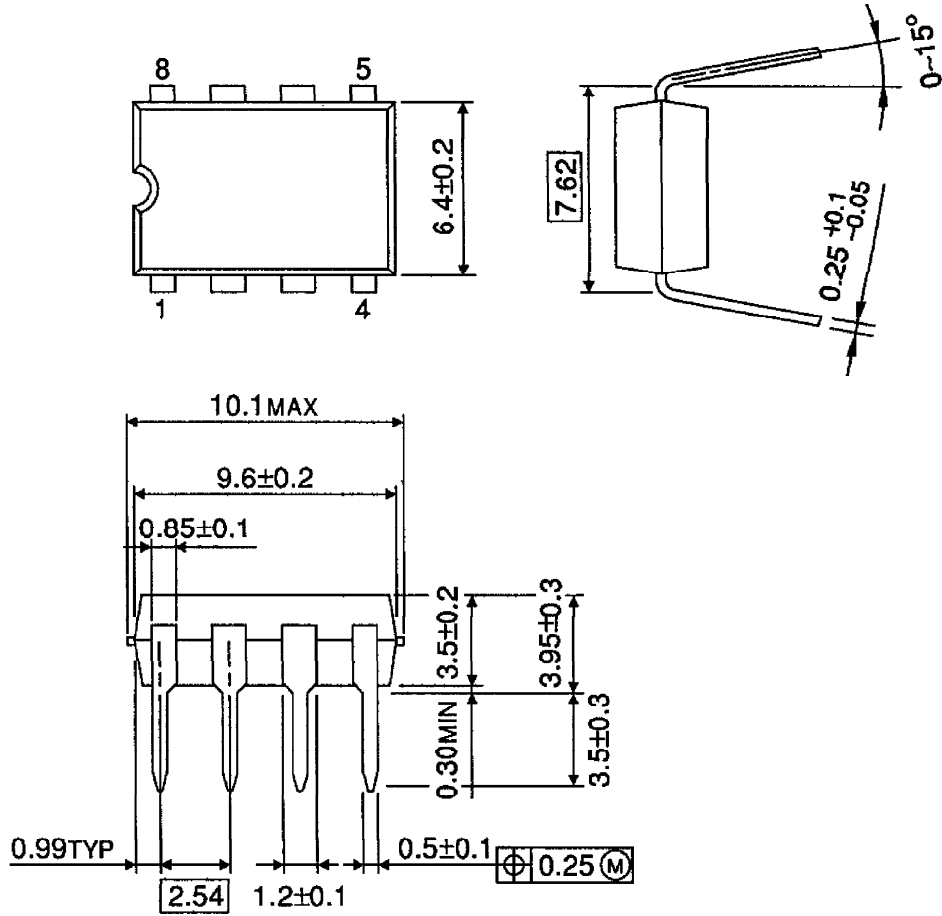


CHARACTERISTICS



OUTLINE DRAWING  
DIP8-P-300-2.54A

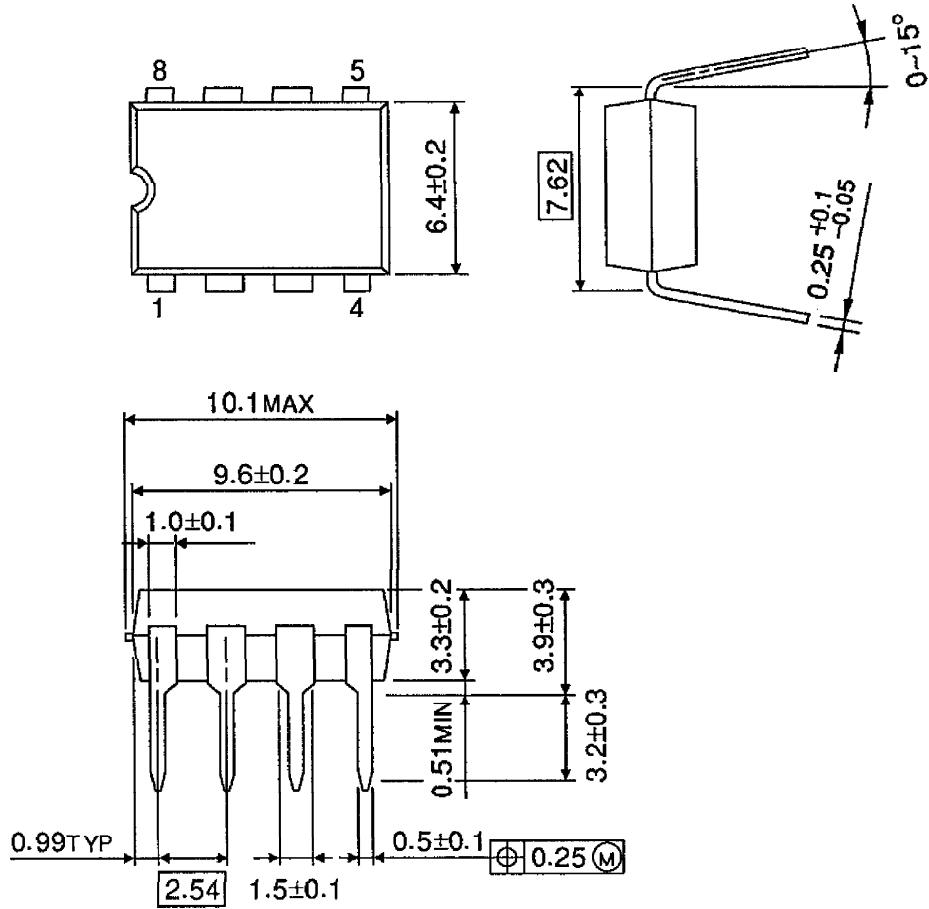
Unit : mm



Weight : 0.5g (Typ.)

OUTLINE DRAWING  
DIP8-P-300-2.54C

Unit : mm

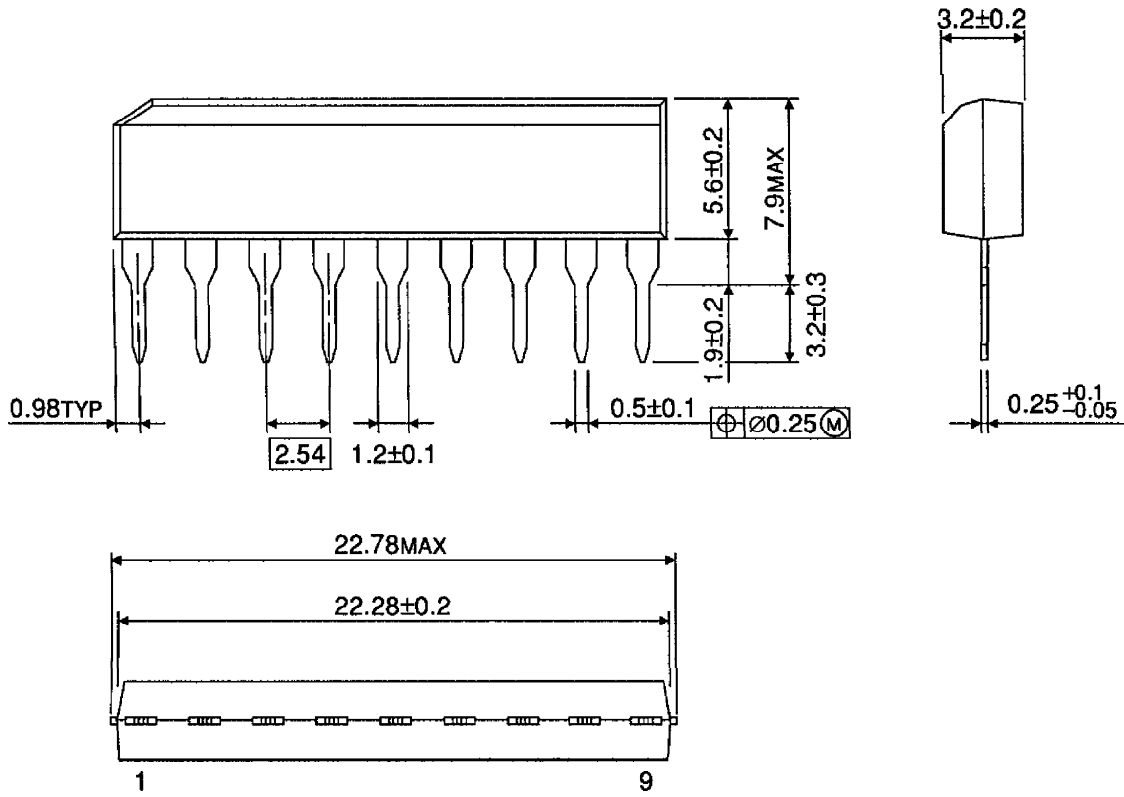


Weight : 0.6g (Typ.)



OUTLINE DRAWING  
SIP9-P-2.54A

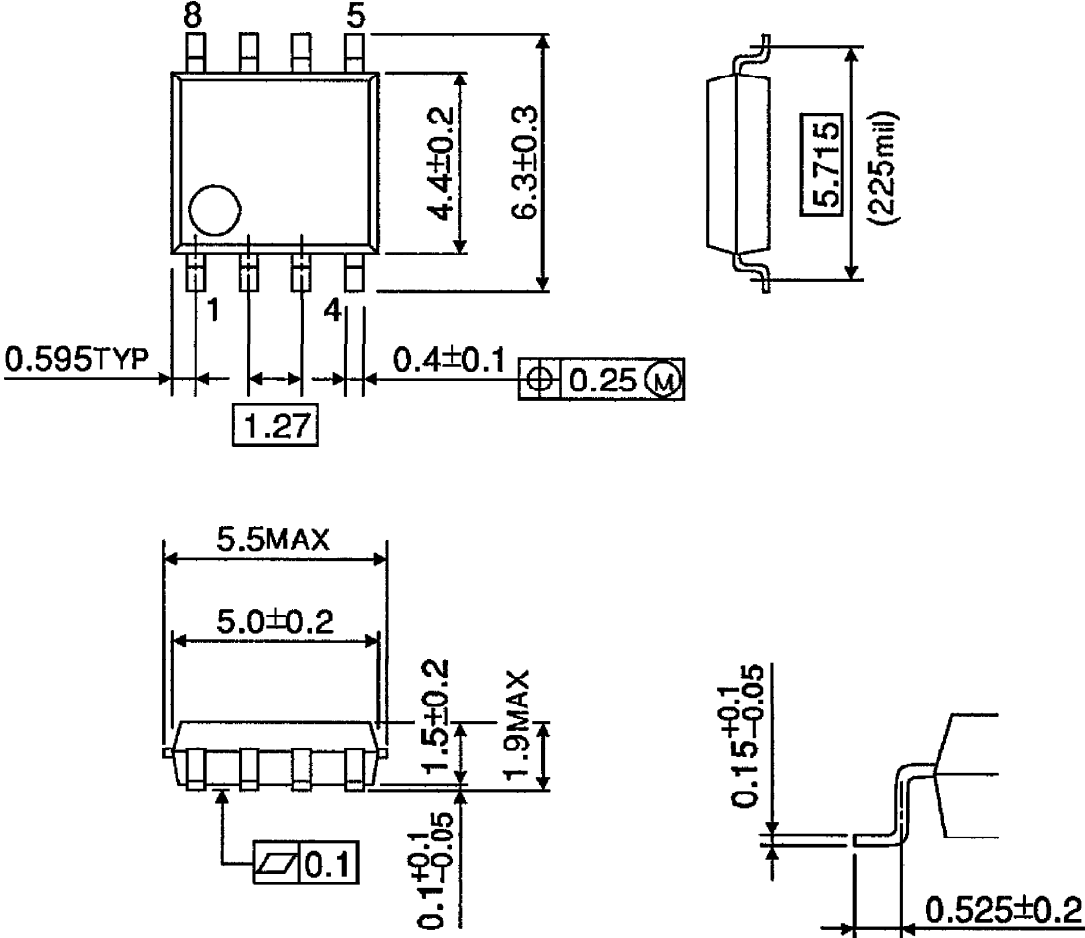
Unit : mm



Weight : 0.9g (Typ.)

OUTLINE DRAWING  
SOP8-P-225-1.27

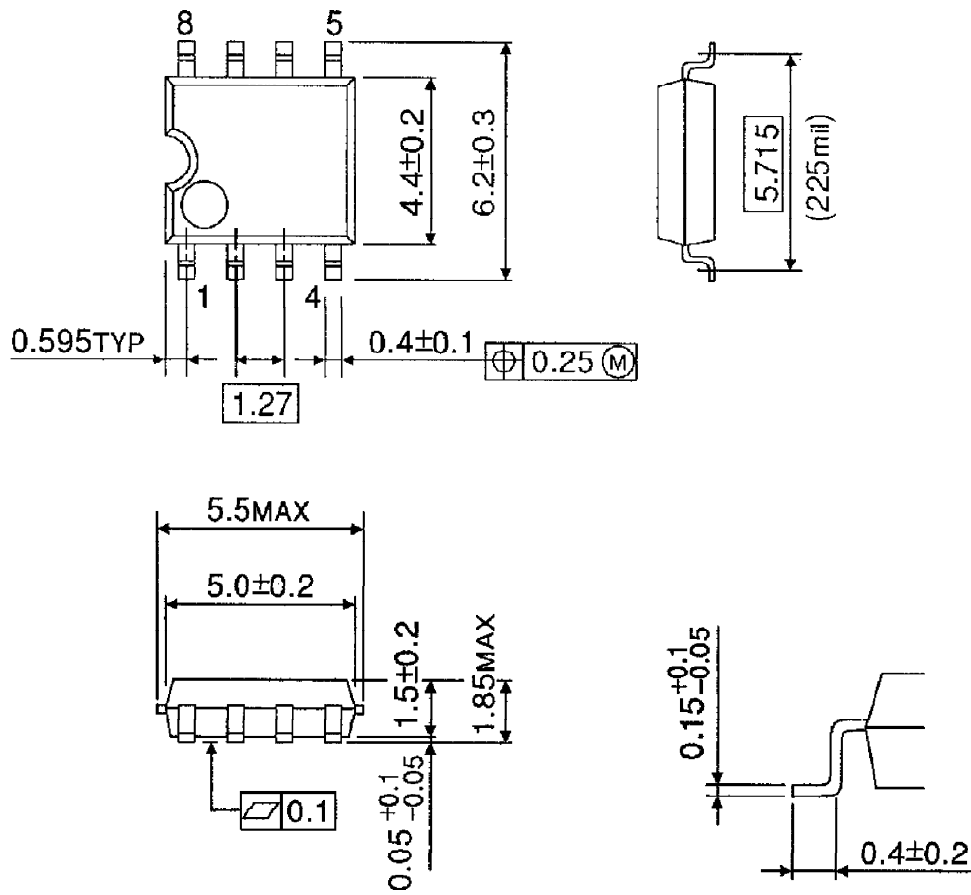
Unit : mm



Weight : 0.1g (Typ.)

OUTLINE DRAWING  
SOP8-P-225-1.27B

Unit : mm



Weight : 0.1g (Typ.)