

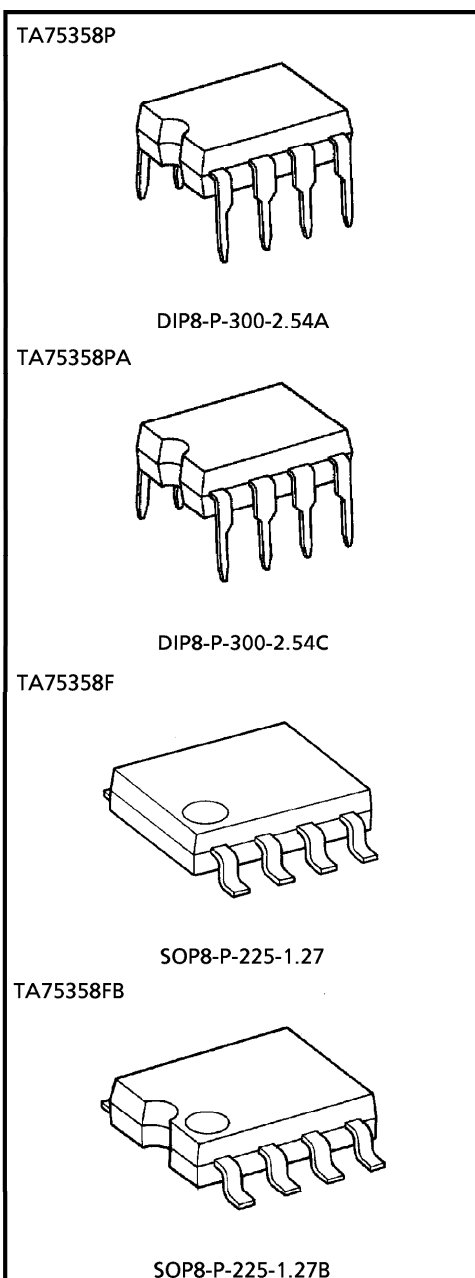
TA75358P, TA75358PA, TA75358F, TA75358FB

DUAL OPERATIONAL AMPLIFIER

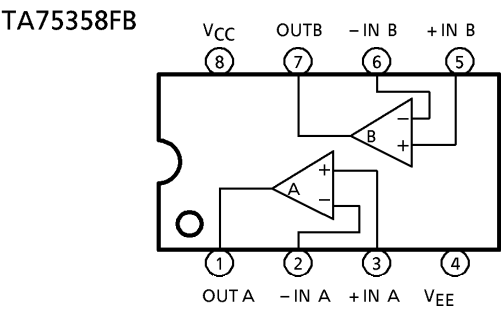
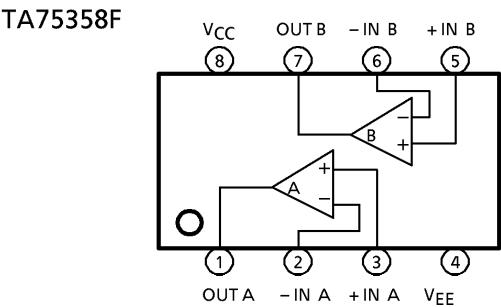
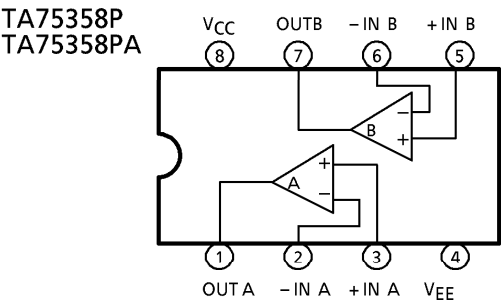
FEATURES

- In the linear mode the input common mode voltage range includes ground.
- Two internally compensated OP amps are in single package.
- Low power dissipation and power drain suitable for battery operation.
- Differential input voltage range equal to the power supply voltage.
- Large output voltage swing. : $0V \sim V_{CC} - 1.5V$
- Wide power supply voltage range and single power supply is possible.
- Low input biasing current : $I_I = 45nA$ (Typ.)
- Wide Band Decompensated ($A_V \geq 20dB$).

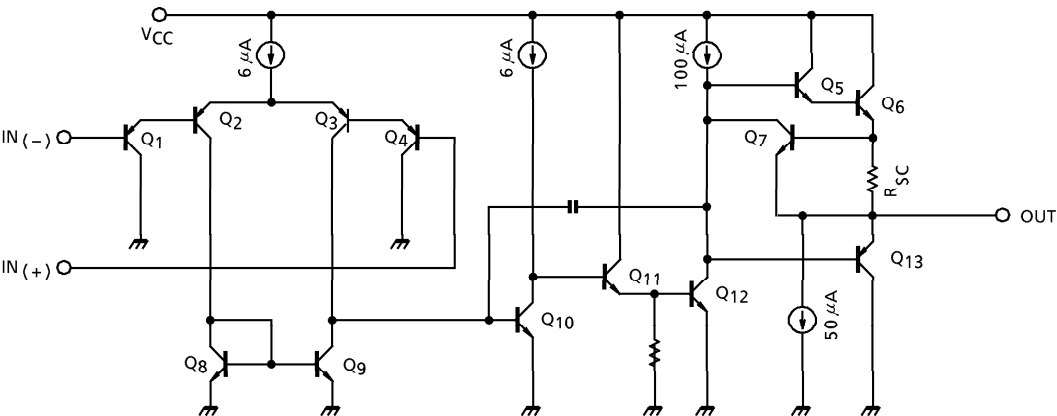
Weight	
DIP8-P-300-2.54A	: 0.5g (Typ.)
DIP8-P-300-2.54C	: 0.6g (Typ.)
SOP8-P-225-1.27	: 0.1g (Typ.)
SOP8-P-225-1.27B	: 0.1g (Typ.)



PIN CONNECTION (TOP VIEW)



EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

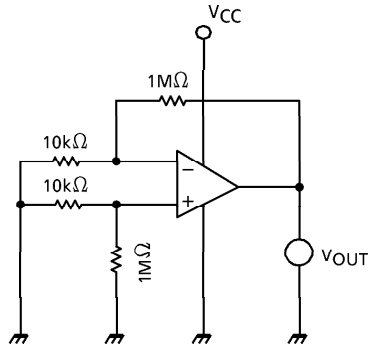
CHARACTERISTIC	SYMBOL	TA75358P TA75358PA	TA75339F TA75339FB	UNIT
Supply Voltage	V_{CC}, V_{EE}	± 18 OR 36	± 18 OR 36	V
Differential Input Voltage	DV_{IN}	± 36	± 36	V
Input Voltage	V_{IN}	$-0.3 \sim 36$	$-0.3 \sim 36$	V
Power Dissipation	P_D	500	240	mW
Operating Temperature	T_{opr}	$-40 \sim 85$	$-40 \sim 85$	°C
Storage Temperature	T_{stg}	$-55 \sim 125$	$-55 \sim 125$	°C

ELECTRICAL CHARACTERISTICS ($V_{CC} = 5V$, $V_{EE} = GND$, Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	1	$R_g \leq 10k\Omega$	—	2	7	mV
Input Offset Current	I_{IO}	2	—	—	5	50	nA
Input Bias Current	I_I	2	—	—	45	250	nA
Common Mode Input Voltage	CMV_{IN}	3	$V_{CC} = 30V$, $V_{EE} = GND$	0	—	$V_{CC} - 1.5$	V
Supply Current	I_{CC}, I_{EE}	4	$R_L = \infty$, All OP Amps	—	0.7	1.2	mA
Voltage Gain	G_V	5	$R_L \geq 2k\Omega$	86	100	—	dB
Maximum Output Voltage Swing	V_{Op-p}	6	$R_L = 2k\Omega$	0	—	$V_{CC} - 1.5$	V
Common Mode Rejection Ratio	CMRR	3	—	60	85	—	dB
Supply Voltage Rejection Ratio	SVRR	1	$R_g = 10k\Omega$	60	100	—	dB
Source Current	I_{source}	6	$IN_{(-)} = 0V$, $IN_{(+)} = 1V$	20	40	—	mA
Sink Current	I_{sink}	6	$IN_{(-)} = 1V$, $IN_{(+)} = 0V$	10	20	—	mA
Unity Gain Cross Frequency	f_T	—	—	—	1.5	—	MHz
Slew Rate	S_R	—	—	—	0.8	—	V / μs

TEST CIRCUIT

(1) V_{IO} , SVRR



- $V_{IO} = V_{OUT} / 100$

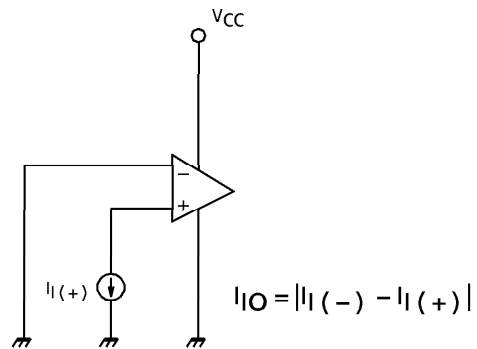
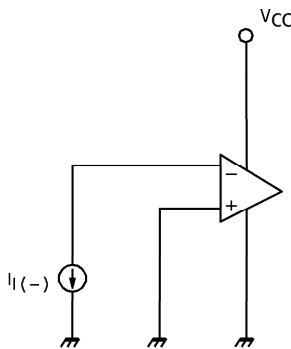
- $SVRR = 20 \log E \text{ (dB)}$

$$E = \left| \frac{V_{OUT1} - V_{OUT2}}{V_{CC1} - V_{CC2}} \right| \times \frac{1}{100}$$

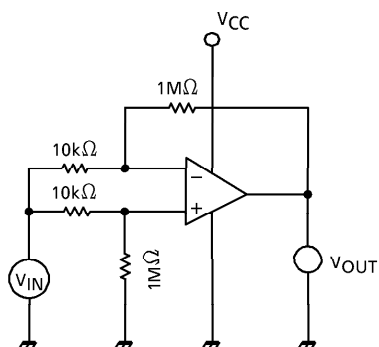
$$V_{OUT1} : V_{OUT} (V_{CC1} = 5V)$$

$$V_{OUT2} : V_{OUT} (V_{CC2} = 10V)$$

(2) I_I , I_{IO}



(3) CMV_{IN} , CMRR



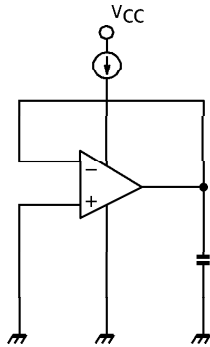
- $CMRR = 20 \log G_D / G_C \text{ (dB)}$

G_D : DIFFERENTIAL VOLTAGE GAIN

G_C : COMMON MODE VOLTAGE GAIN

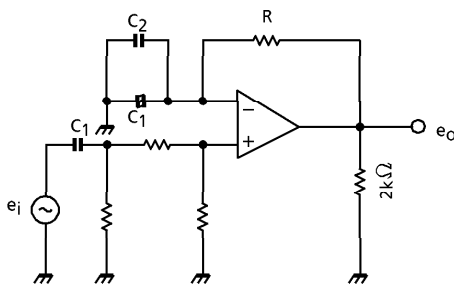
- $CMV_{IN} : V_{IN} = 0V, V_{CC} - 1.5V \text{ SUPPLIES}$

(4) I_{CC}



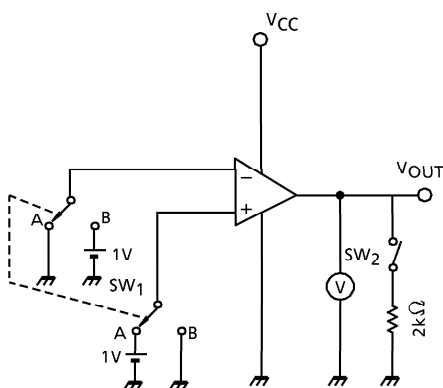
- $I_{CC} : V_{CC} = 5V$

(5) G_V



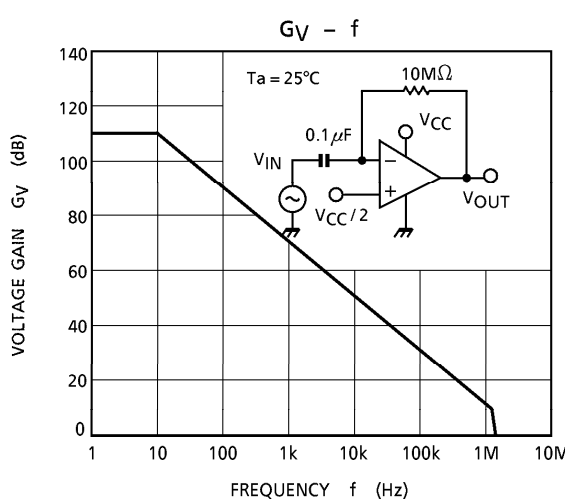
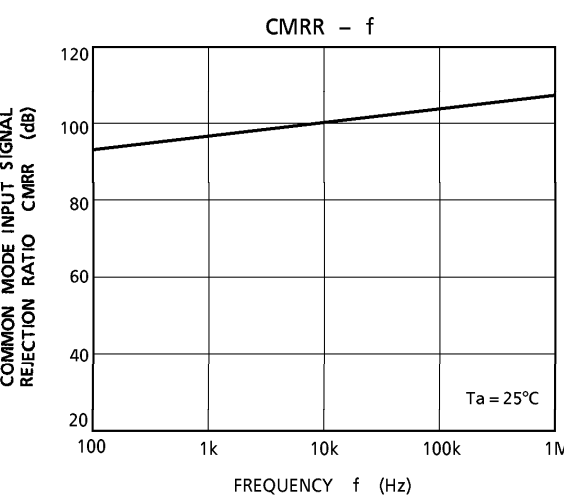
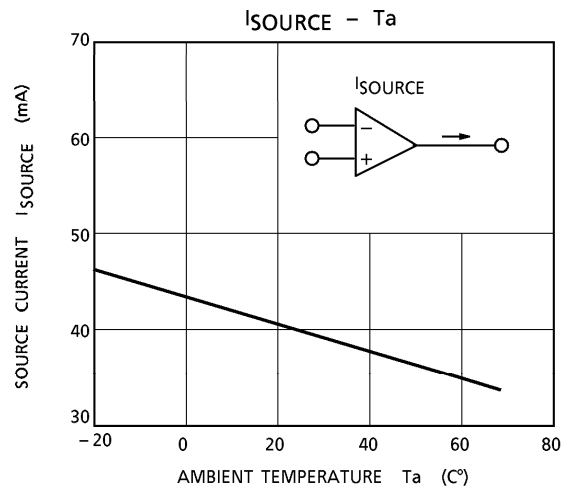
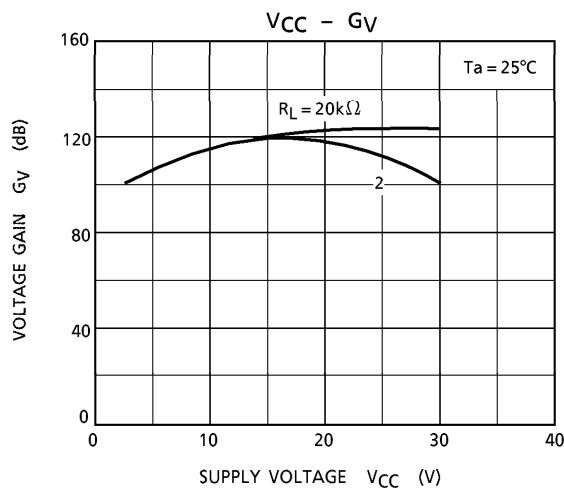
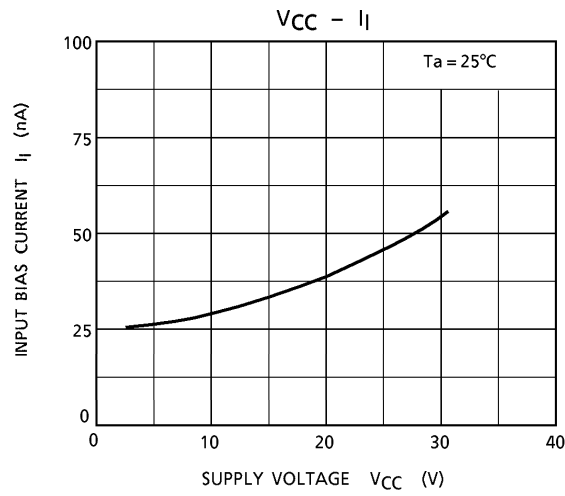
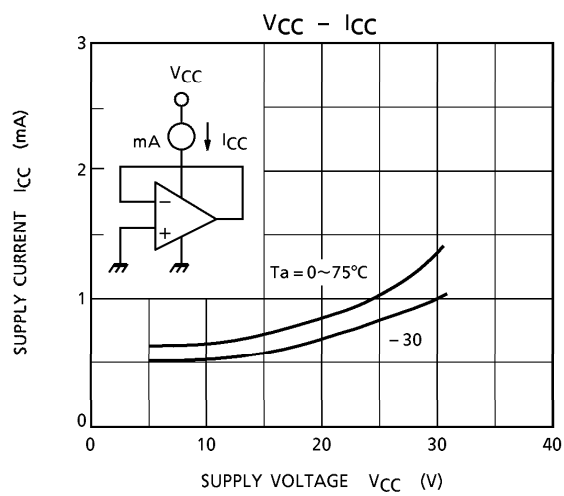
- $G_V = 20 \log e_o / e_i$ (dB)
 $R \gg 1 / W_{C1}$
 C_1 : COUPLING CONDENSER
 C_2 : HIGH FREQUENCY BYPASS CONDENSER

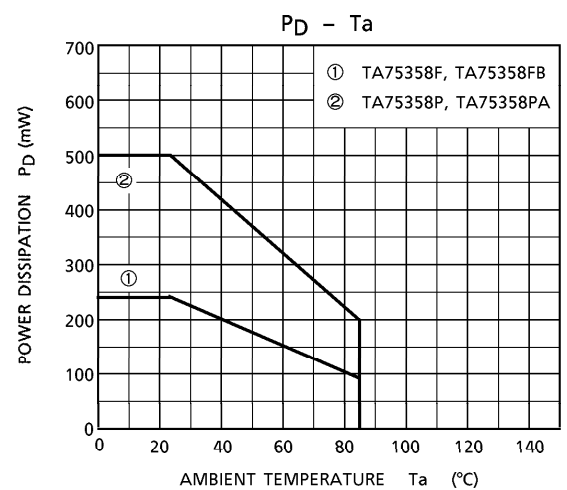
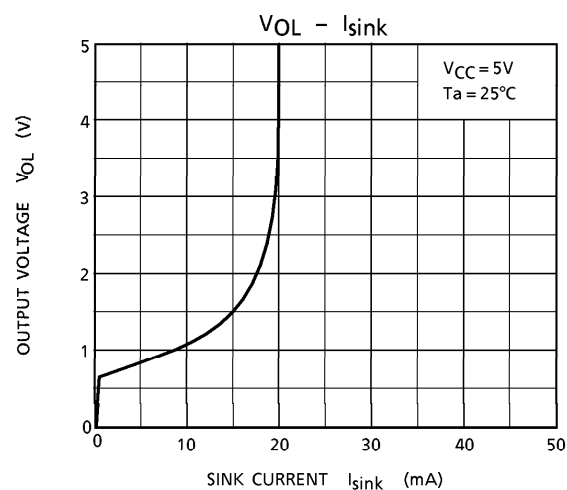
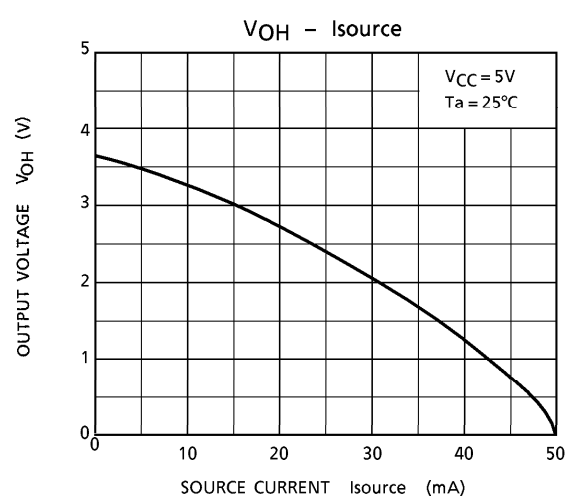
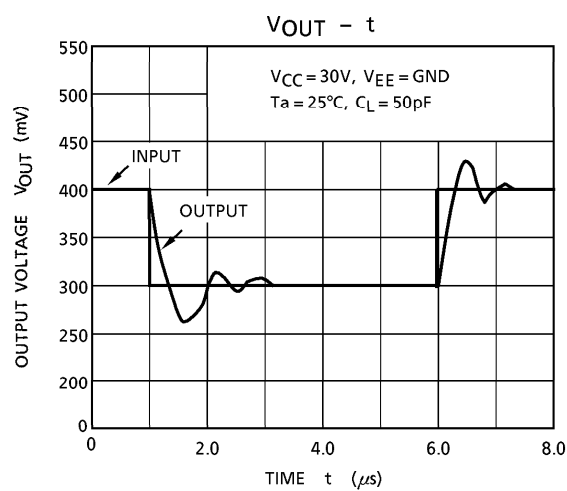
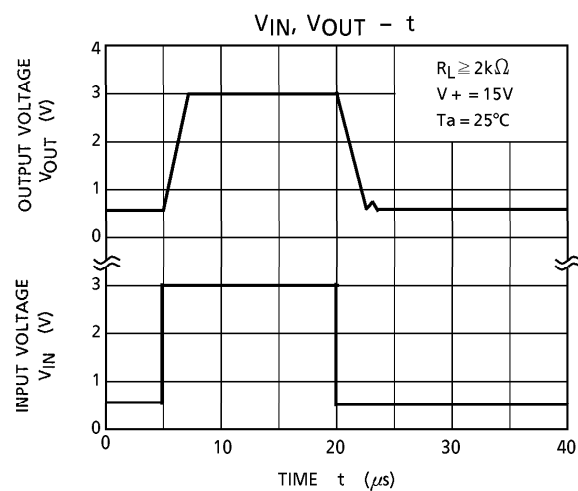
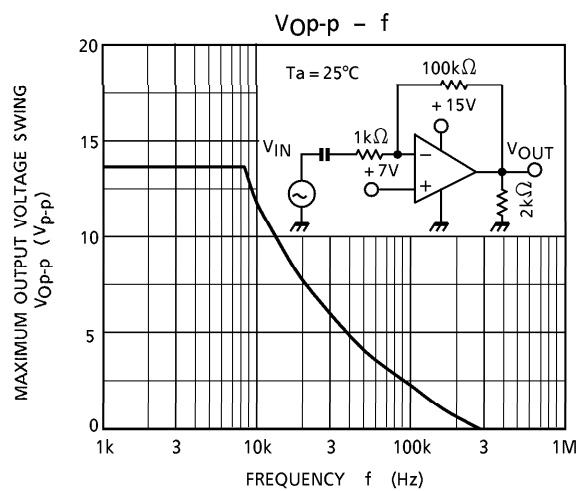
(6) V_{Op-p} , I_{source} , I_{sink}



- V_{Op-p} :
 V_{OH} : SW_1 IS SIDE A, SW_2 ON
 V_{OL} : SW_1 IS SIDE B, SW_2 ON
- I_{source}
 SW_1 IS SIDE A, SW_2 OFF
 $V_{OUT} \rightarrow 0V$ MEASURE
- I_{sink}
 SW_1 IS SIDE B, SW_2 OFF
 $V_{OUT} \rightarrow 5V$ MEASURE

CHARACTERISTICS

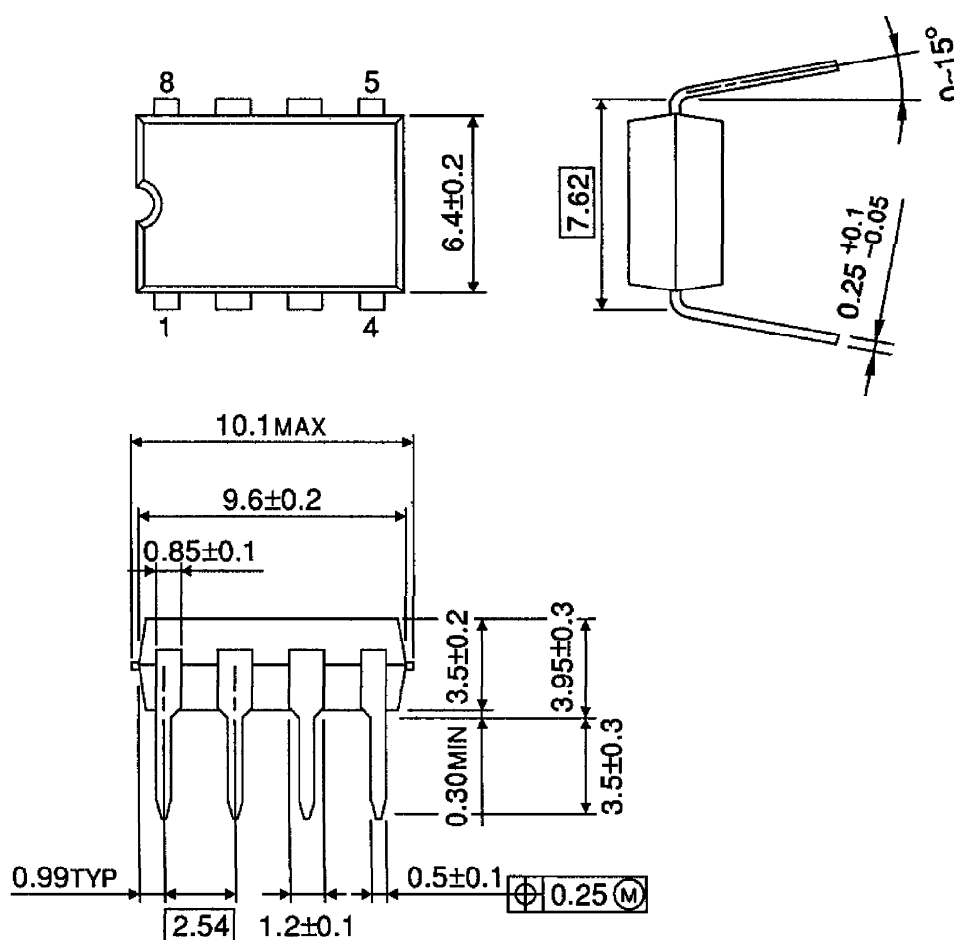




PACKAGE DIMENSIONS

DIP8-P-300-2.54A

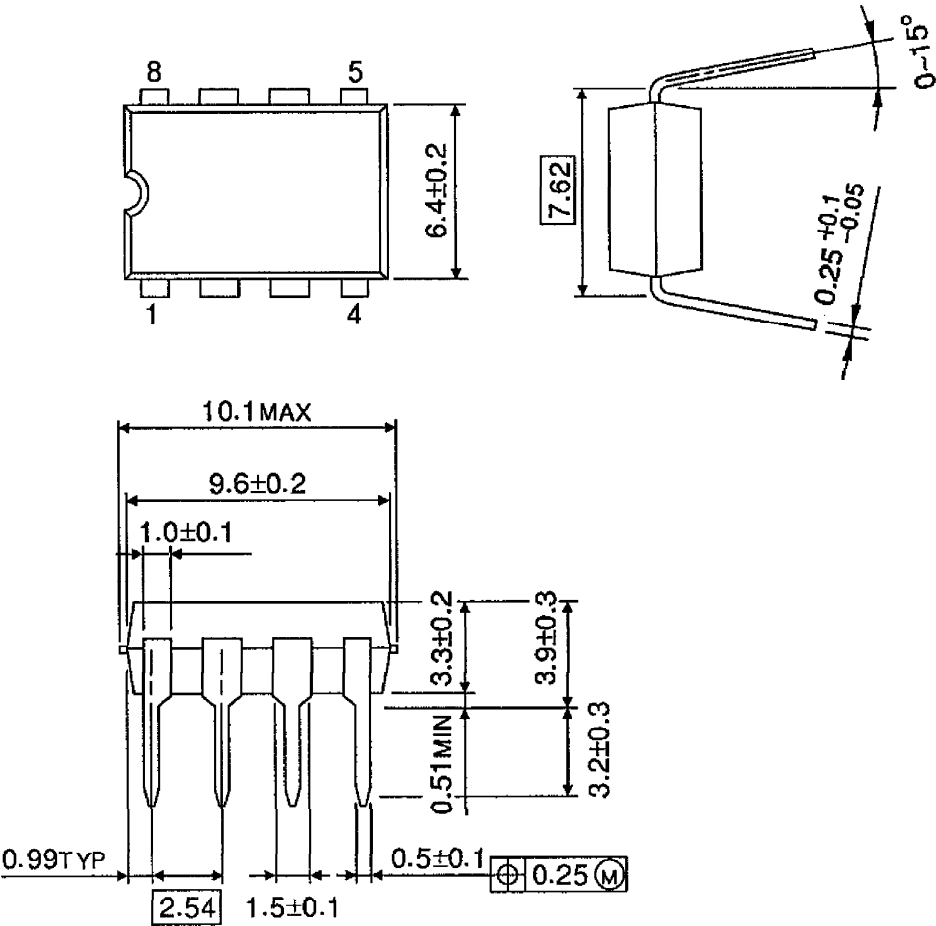
Unit : mm



Weight : 0.5g (Typ.)

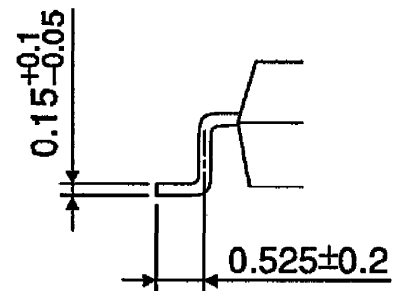
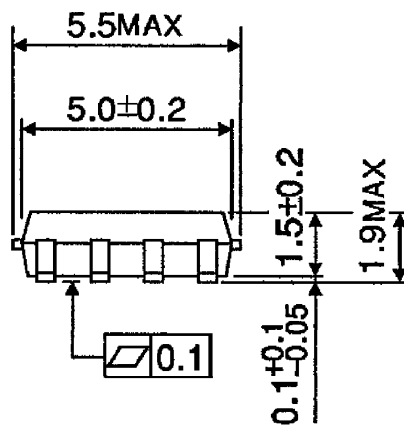
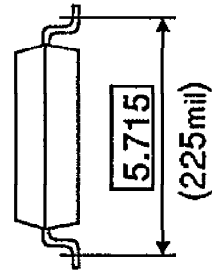
PACKAGE DIMENSIONS
DIP8-P-300-2.54C

Unit : mm



Weight : 0.6g (Typ.)

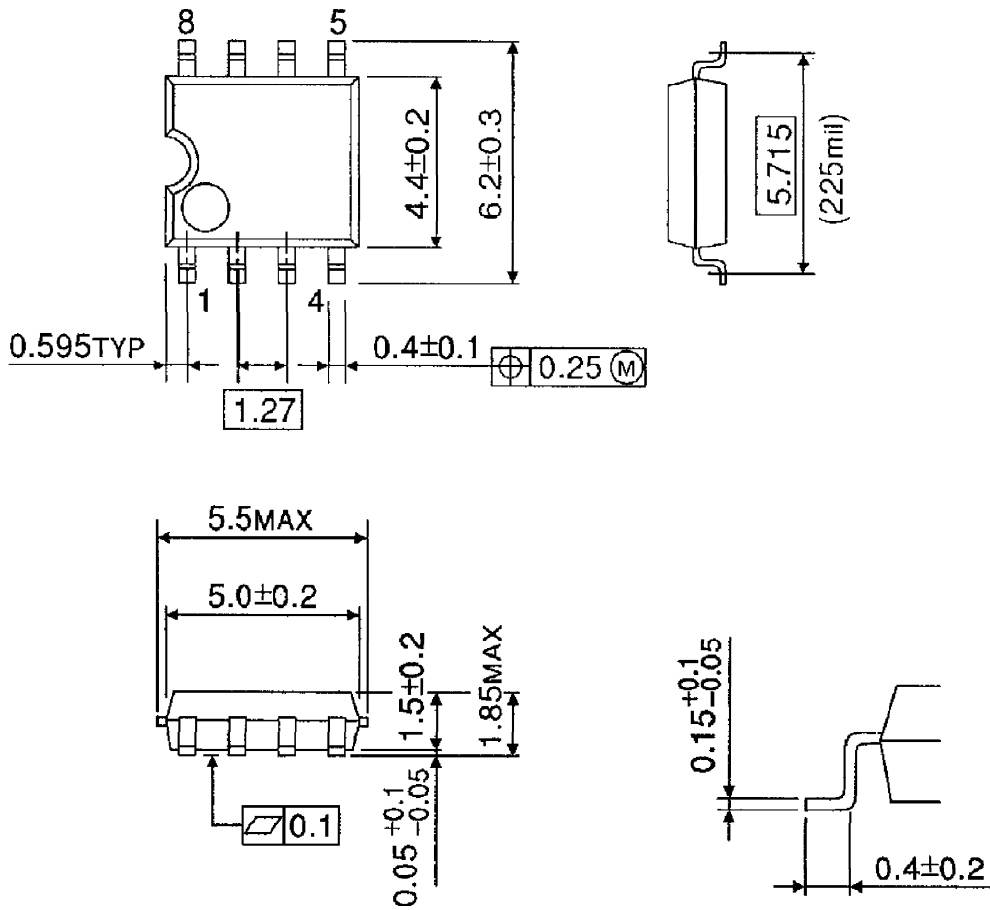
SOP8-P-225-1.27



2001-06-19

PACKAGE DIMENSIONS
SOP8-P-225-1.27B

Unit : mm



Weight : 0.1g (Typ.)

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000707EBA

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