

# LM201A/LM301A

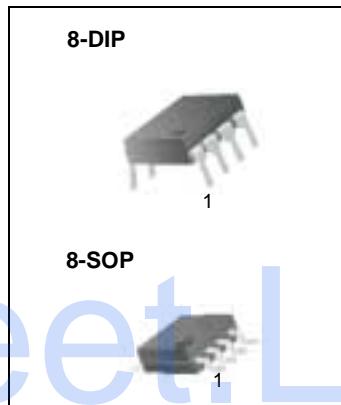
## Single Operational Amplifier

### Features

- Short circuit protection and latch free operation
- Slew rate of 10V/ $\mu$ s as a summing amplifier
- Class AB output provides excellent linearity
- Low bias current

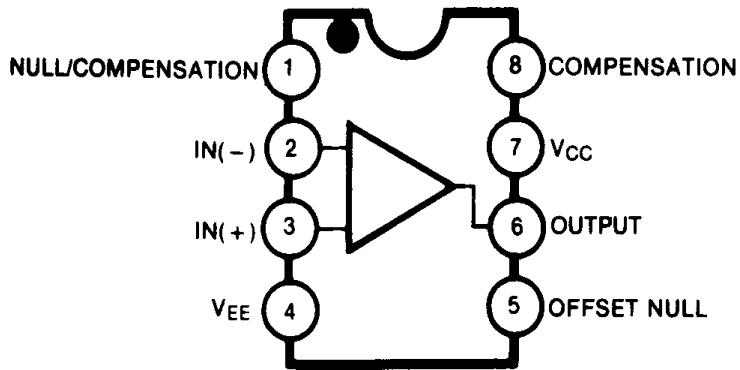
### Description

The LM201A and LM301A are general purpose operational amplifiers which are externally phase compensated, permit a choice of operation for optimum high frequency performance at a selected gain: unity gain compensation can be obtained with a single capacitor.

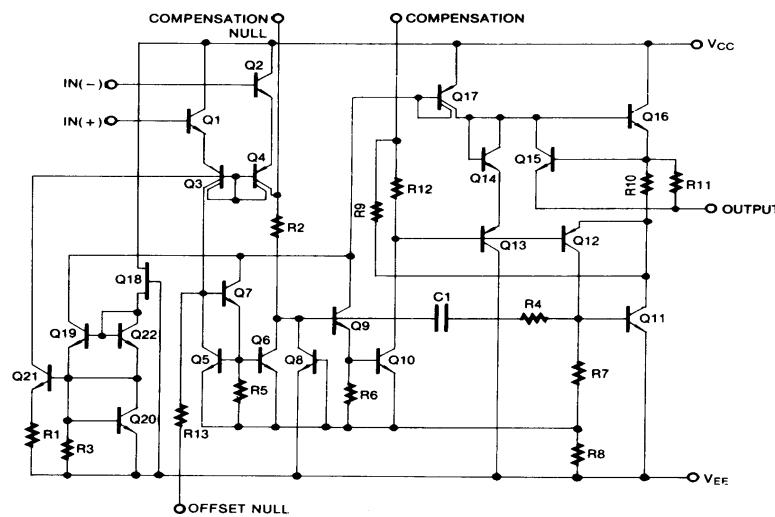


# Datasheet Live

### Internal Block Diagram



## Schematic Diagram



## Absolute Maximum Ratings

Parameter	Symbol	LM201A	LM301A	Unit
Supply Voltage	V <sub>CC</sub>	$\pm 22$	$\pm 18$	V
Differential Input Voltage	V <sub>I(DIFF)</sub>	30	30	V
Input Voltage	V <sub>I</sub>	$\pm 15$	$\pm 15$	V
Output short Circuit Duration	-	Continuous	Continuous	-
Power Dissipation	P <sub>D</sub>	500	500	mW
Operating Temperature Range	T <sub>OPR</sub>	-25 ~ +85	0 ~ +70	°C
Storage Temperature Range	T <sub>STG</sub>	-65 ~ +150	- 65 ~ + 150	°C

## Electrical Characteristics

(TA = +25°C, VCC = +15V, VEE = -15V, unless otherwise specified)

Parameter	Symbol	Conditions	LM201A			LM301A			Unit	
			Min.	Typ.	Max.	Min.	Typ.	Max.		
Input Offset Voltage	VIO	RS ≤ 50KΩ Note 1	-	0.5	2.0	-	2.0	7.5	mV	
			-	-	3	-	-	10	mV	
Input Offset Current	IIO	Note 1	-	1.5	10	-	4.5	50	nA	
			-	-	20	-	-	70	nA	
Input Bias Current	IBIAS	Note 1	-	40	75	-	60	250	nA	
			-	-	100	-	-	300	nA	
Supply Current	ICC	VCC = ± 20V	-	2.0	3.0	-	-	-	mA	
		VCC = ± 15V	-	-	-	-	2.0	3.0	mA	
		VCC = ± 20V, TA = TA(MAX)	-	1.7	2.5	-	-	-	mA	
Large Signal Voltage Gain	GV	VCC = ± 15V, RL ≥ 2KΩ, VO(P-P) = ± 10V Note 1	50	160	-	25	160	-	V/mV	
			25	-	-	15	-	-	V/mV	
Average Temperature Coefficient of Input Offset Voltage (NOTE2)	ΔVIO/ΔT	Note 1	-	3.0	15	-	6.0	30	μV/°C	
Average Temperature Coefficient of Input Offset Current (NOTE2)	ΔIIO/ΔT	25 °C ≤ TA ≤ TA(MAX)	-	0.01	0.1	-	0.01	0.3	nA/°C	
		TA(MIN) ≤ TA ≤ 25 °C	-	0.02	0.2	-	0.02	0.6	nA/°C	
Input Voltage Range	VI(R)	VCC = ± 20V Note 1	± 15	-	-	-	-	-	V	
		VCC = ± 15V Note 1	-	-	-	± 12	-	-	V	
Common-Mode Rejection Ratio	CMRR	RS ≤ 50KΩ	Note 1	80	100	-	70	95	-	dB
Power Supply Rejection Ratio	PSRR	RS ≤ 50KΩ	Note 1	80	100	-	70	100	-	dB
Output Voltage Swing	VO(P-P)	VCC = ± 15V	RL = 10KΩ	± 12	± 14	-	± 12	± 14	-	V
			RL = 2.0KΩ	± 10	± 13	-	± 10	± 13	-	V
Input Resistance (NOTE2)	R <sub>I</sub>	-	1.5	4.0	-	0.5	2.0	-	MΩ	

**Note:**

1. LM201A: -25 ≤ TA ≤ +85 °C , LM301A: 0 ≤ TA ≤ +70 °C
2. Guaranteed by design.

## Typical Performance Characteristics

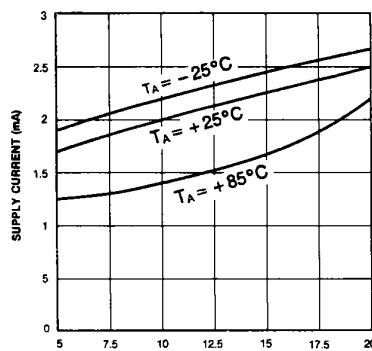


Figure 1. Supply Current

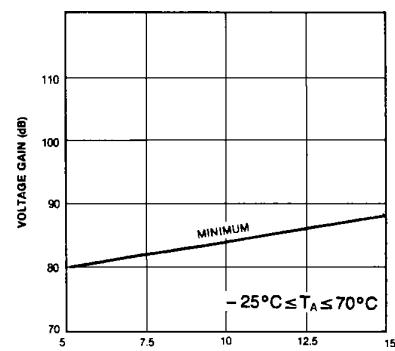


Figure 2. Voltage Gain

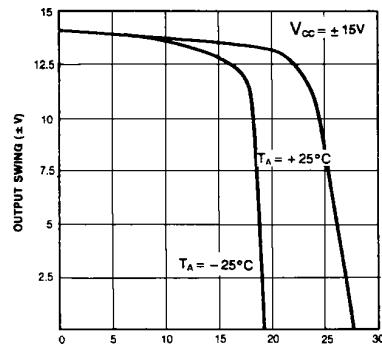


Figure 3. Current Limiting

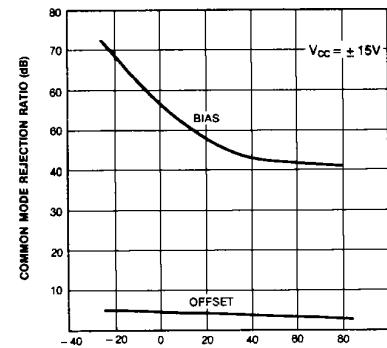


Figure 4. Input Current

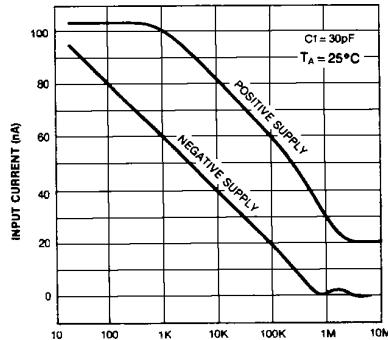


Figure 5. Power Supply Rejection

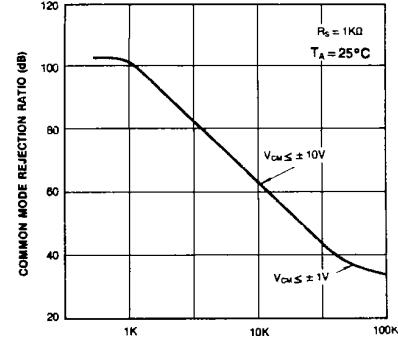


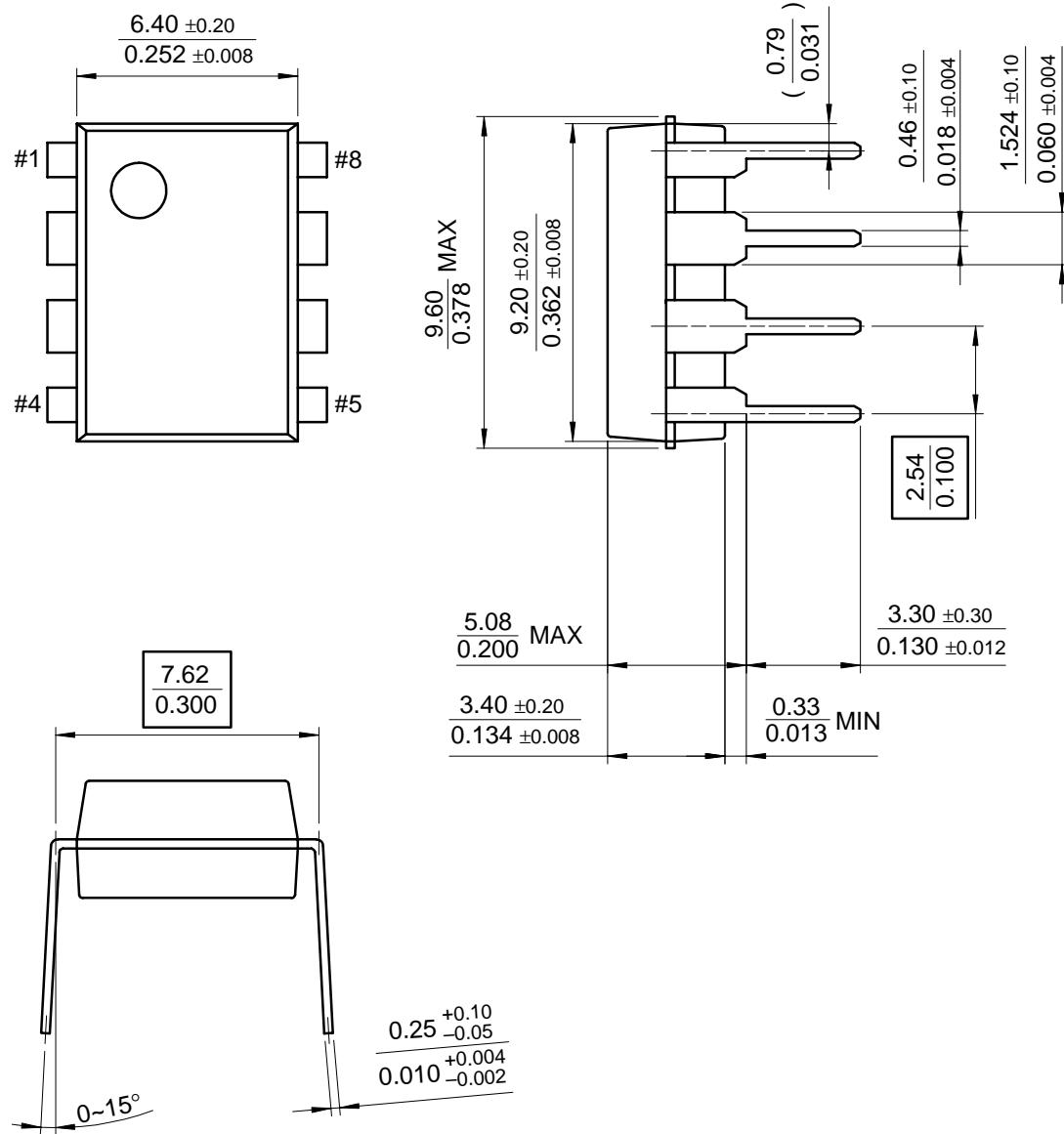
Figure 6. Common Mode Rejection

## Mechanical Dimensions

### Package

Dimensions in millimeters

### 8-DIP

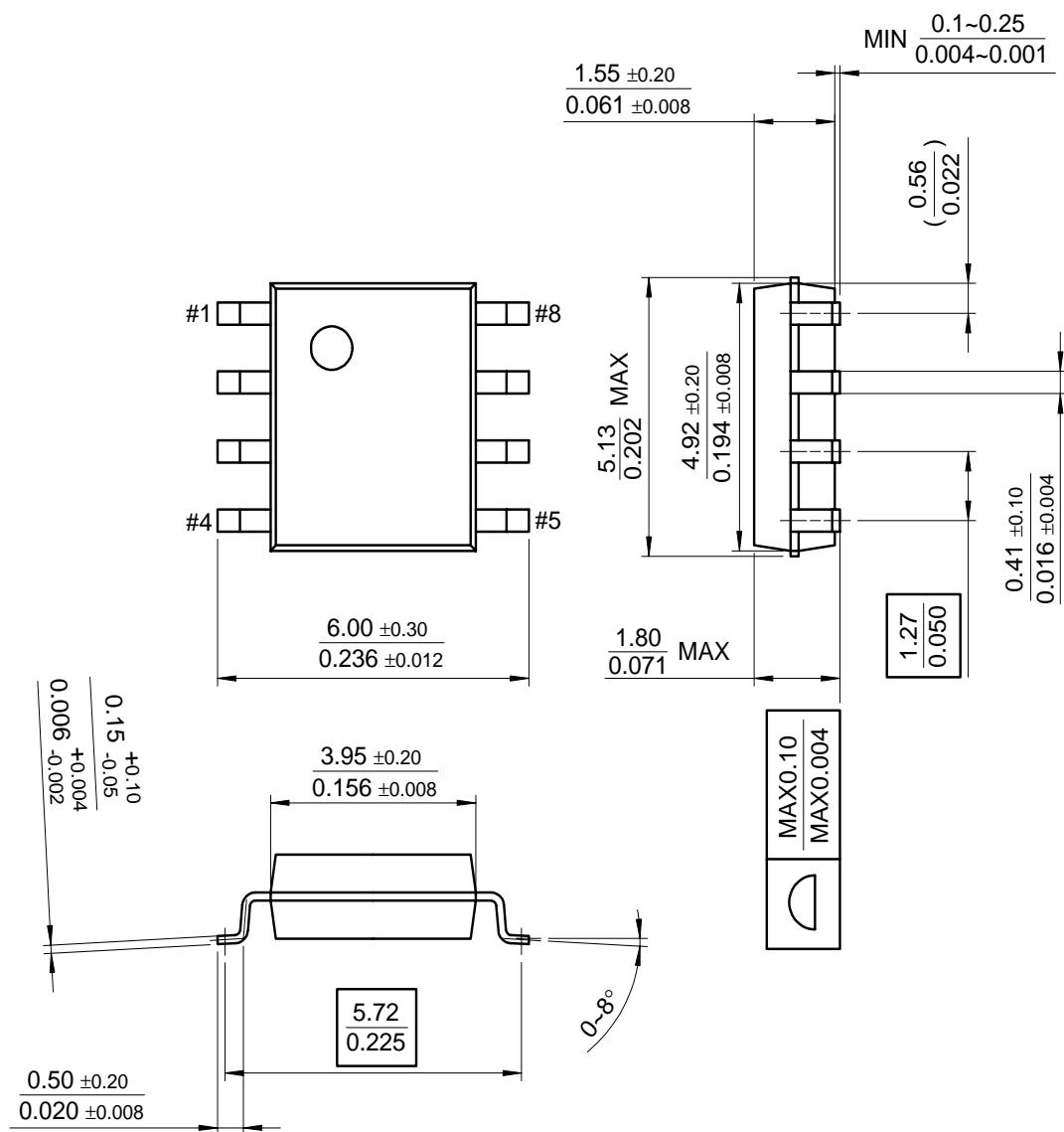


## **Mechanical Dimensions** (Continued)

## Package

**Dimensions in millimeters**

8-SOP



## Ordering Information

Product Number	Package	Operating Temperature
LM201AN	8-DIP	-25 ~ +85 °C
LM201AM	8-SOP	
LM301AN	8-DIP	0 ~ + 70 °C

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