

# THOMSON SEMICONDUCTORS

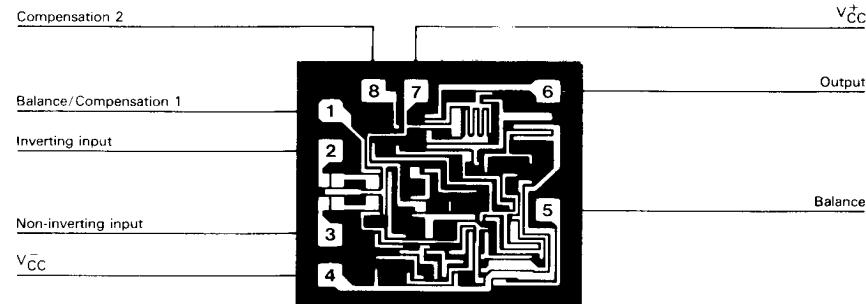
J LM101A  
J LM301A

## SINGLE OPERATIONAL AMPLIFIERS

The LM101A is a general-purpose operational amplifier. This amplifier offers many features : supply voltages from  $\pm 5$  V to  $\pm 20$  V, low current drain, reverse load protection on the input and output, no latch-up when the common mode range is exceeded, freedom from oscillations and compensation with a single  $30\text{ pF}$  capacitors. It has advantages over internally compensated amplifiers in that the compensation can be tailored to the particular application : slew rates of  $10\text{ V}/\mu\text{s}$  and bandwidths of  $3.5\text{ MHz}$  can be easily achieved. In addition, the circuit can be used as a comparator with differential inputs up to  $\pm 30\text{ V}$ . The output can be clamped at any desired level to make it compatible with logic circuits.

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DIMENSIONS:  $1.2 \times 1.3\text{ mm}$



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Ref. 04695

## THOMSON SEMICONDUCTORS

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 **THOMSON**  
COMPONENTS

**MAXIMUM RATINGS**

Rating	Symbol	LM101A	LM301A	Unit
Supply voltage	V <sub>CC</sub>	± 22	± 18	V
Differential input voltage	V <sub>ID</sub>	± 30	± 30	V
Input voltage	V <sub>I</sub>	± 15	± 15	V
Operating free-air temperature range	T <sub>oper</sub>	- 55 to + 125	0 to + 70	°C
Storage temperature range	T <sub>stg</sub>	- 65 to + 150	65 to + 150	°C

**ELECTRICAL CHARACTERISTICS** $T_{amb} = + 25^{\circ}\text{C}$ ,J LM101A :  $\pm 5 \text{ V} \leq V_{CC} \leq \pm 20 \text{ V}$ ,  $C_1 = 30 \text{ pF}$ J LM301A :  $\pm 5 \text{ V} \leq V_{CC} \leq \pm 15 \text{ V}$ ,  $C_1 = 30 \text{ pF}$ 

(Unless otherwise specified)

Characteristic	Symbol	J LM101A			J LM301A			Unit
		Min	Typ	Max	Min	Typ	Max	
Input offset voltage ( $R_S = 50 \Omega$ )	V <sub>IO</sub>	0.7	2	—	—	2	7.5	mV
Input offset current	I <sub>IO</sub>	—	1.5	10	—	3	50	nA
Input bias current	I <sub>B</sub>	—	30	75	—	70	250	nA
Large signal voltage gain ( $V_{CC} = \pm 15 \text{ V}$ , $R_L = 2 \text{ k}\Omega$ , $V_O = \pm 10 \text{ V}$ )	A <sub>VD</sub>	50	160	—	25	160	—	V/mV
Supply voltage rejection ratio ( $R_S = 50 \text{ k}\Omega$ )	SVR	80	96	—	70	96	—	dB
Supply current ( $V_{CC} = + 15 \text{ V}$ )	I <sub>CC</sub> , I <sub>CC</sub>	—	1.8	3	—	1.8	3	mA
Input voltage range ( $V_{CC} = V_{CC(\text{max})}$ )	V <sub>I</sub>	± 15	—	—	± 12	—	—	V
Common-mode rejection ratio ( $R_S \leq 50 \text{ k}\Omega$ )	CMR	80	96	—	70	90	—	dB
Output voltage swing ( $V_{CC} = \pm 15 \text{ V}$ ) $R_L = 2 \text{ k}\Omega$ $R_L = 10 \text{ k}\Omega$	V <sub>OPP</sub>	± 10 ± 12	± 13 ± 14	—	± 10 ± 12	± 13 ± 14	—	V

These specifications are subject to change without notice.