

**CLM4122 / CLM4322**

**FEATURES**

- High Slew Rate..... 2000V/μs
- Wide Bandwidth..... 180MHz
- Low Supply Current ..... 800μA
- No Oscillations with Capacitive Loads
- Fully Specified to Drive 50Ω Lines

**APPLICATIONS**

- Coaxial Cable Driver
- Flash A/D Converter Driver
- Video DAC Buffer
- Video Amplifier
- Wide Bandwidth Signal Conditioning

**GENERAL DESCRIPTION**

The CLM4122 family are low power, high speed unity gain buffers that slew at 2000V/μs, having a small signal bandwidth of 180MHz, delivers 60mA, yet draws only 800μA supply current.

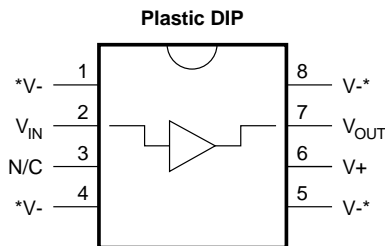
The 4mW power consumption, fast slew rate, wide bandwidth, and high output drive make the CLM4122 family the ideal choice for battery operated equipment.

These same characteristics are the excellent choices for driving coaxial and switched pair cables.

**ORDERING INFORMATION**

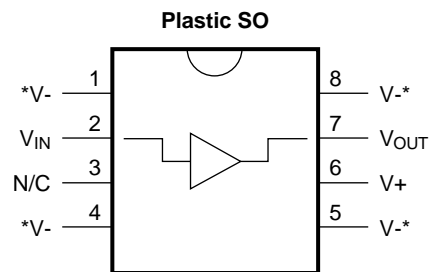
Part	Package	Temperature Range
CLM4122 N	NO8A (Plastic P Dip 8 Lead)	-40°C to 85°C
CLM4122 M	MO8B (SOIC 8 Lead)	-40°C to 85°C
CLM4322 N	NO8A (Plastic P Dip 8 Lead)	-25°C to 70°C
CLM4322 M	MO8B (SOIC 8 Lead)	-25°C to 70°C

**CONNECTION DIAGRAMS**



\*Heat-sinking pins. Pin 1 and Pin 8 must be connected to the negative supply.

Package NO8A



\*Heat-sinking pins. Pin 1 and Pin 8 must be connected to the negative supply.

Package MO8B

## ABSOLUTE MAXIMUM RATINGS (Note 1)

Supply Voltage . . . . .	+10	ESD Tolerance (Note 3) . . . . .	±2000V
Input Voltage . . . . .	±V <sub>supply</sub>	Thermal Resistance (θ <sub>JA</sub> ) (Note 6)	
Storage Temperature Range . . . . .	-65°C to +150°C	N Package . . . . .	50°C/W
Lead Temperature		M Package . . . . .	60°C/W
(Soldering 10 seconds) . . . . .	260°C	Maximum Junction Temperature . . . . .	150°C
Power Dissipation . . . . .	(Note 4)		

## DC ELECTRICAL CHARACTERISTICS

The following specifications apply for Supply Voltage = +5V, V<sub>CM</sub> = 0, R<sub>L</sub> ≥ 100KΩ and R<sub>S</sub> = 50Ω unless otherwise noted.

**Boldface** limits apply for T<sub>A</sub> = T<sub>J</sub> = T<sub>MIN</sub> to T<sub>MAX</sub>; all other limits T<sub>A</sub> = T<sub>J</sub> = 25°C.

SYMBOL	CHARACTERISTICS	TYP	CLM4122	CLM4322	UNITS	CONDITIONS
			Limit (Note 5)	Limit (Note 5)		
A <sub>V1</sub>	Voltage Gain 1	0.970	0.950	0.950	V/V Min	R <sub>L</sub> = 1KΩ, V <sub>IN</sub> = +3V
A <sub>V2</sub>	Voltage Gain 2	0.900	0.800	0.800		R <sub>L</sub> = 50Ω, V <sub>IN</sub> = +3V
V <sub>OS</sub>	Offset Voltage	5	25	40	mV Max	V <sub>IN</sub> = 2.5V
I <sub>B</sub>	Input Bias Current	1	6	10	μA Max	R <sub>L</sub> = 1KΩ, R <sub>S</sub> = 10kΩ,
C <sub>IN</sub>	Input Capacitance	3.5			pF	
R <sub>O</sub>	Output Resistance	3	5 <b>10</b>	5 <b>6</b>	Ω Max	I <sub>OUT</sub> = 0 to 1mA
I <sub>S</sub>	Supply Current	825	1100	1200	μA Max	R <sub>L</sub> = ∞
V <sub>O1</sub>	Output Swing 1	4.5	4	4	V	R <sub>L</sub> = 1K
V <sub>O2</sub>	Output Swing 2	3.5	3.0	3.0		R <sub>L</sub> = 100Ω
I <sub>OUT</sub>	Output Current	60	44	44	mA	V <sub>IN</sub> = +4V

## AC ELECTRICAL CHARACTERISTICS

The following specifications apply for Supply Voltage = +5V, R<sub>L</sub> ≥ 100KΩ and R<sub>S</sub> = 50Ω unless otherwise noted.

**Boldface** limits apply for T<sub>A</sub> = T<sub>J</sub> = T<sub>MIN</sub> to T<sub>MAX</sub>; all other limits T<sub>A</sub> = T<sub>J</sub> = 25°C.

SYMBOL	CHARACTERISTICS	TYP	CLM4122	CLM4322	UNITS	CONDITIONS
			Limit (Note 5)	Limit (Note 5)		
SR <sub>1</sub>	Slew Rate 1	2000	1500	1200	V/μs	R <sub>L</sub> = 1KΩ (Note 2), V <sub>IN</sub> = 3.5V <sub>PP</sub>
SR <sub>2</sub>	Slew Rate 2	1000	700	600		R <sub>L</sub> = 50Ω (Note 2), V <sub>IN</sub> = 3.5V <sub>PP</sub>
SS <sub>BW</sub>	Small Signal Bandwidth	180	140	100	MHz	V <sub>IN</sub> = 100mV <sub>PP</sub> , R <sub>L</sub> = 50Ω, C <sub>L</sub> ≤ 10pF
LS <sub>BW</sub>	Large Signal Bandwidth	170	130	100		V <sub>IN</sub> = +4V, R <sub>L</sub> = 1K, C <sub>L</sub> ≤ 10pF
P <sub>BW</sub>	Power Bandwidth	100	70	60		V <sub>IN</sub> = +4V, R <sub>L</sub> = 50Ω, C <sub>L</sub> ≤ 10pF
t <sub>r</sub> , t <sub>f</sub>	Rise Time Fall Time	2.0	2.5	3.5	ns	R <sub>L</sub> = 50Ω, C <sub>L</sub> ≤ 10pF, V <sub>O</sub> = 100mV <sub>PP</sub>
t <sub>pd</sub>	Propagation Delay Time	3.0			ns	R <sub>L</sub> = 50Ω, C <sub>L</sub> ≤ 10pF, V <sub>O</sub> = 100mV <sub>PP</sub>
O <sub>S</sub>	Overshoot	10			%	R <sub>L</sub> = 50Ω, C <sub>L</sub> ≤ 10pF, V <sub>O</sub> = 100mV <sub>PP</sub>

**Note 1:** Absolute Maximum Ratings indicate limits beyond which damage to the device may occur. DC and AC electrical specifications do not apply when operating the device beyond its rated operating conditions.

**Note 2:** Slew rate is measured with 50Ω source impedance at 25°C with input DC offset to 2.5V. For accurate measurements, the input slew rate should be at least 5000V/μs.

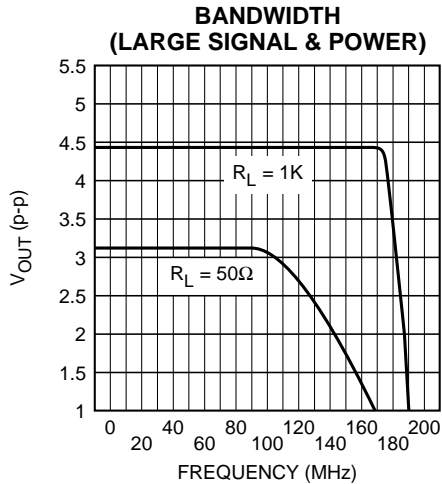
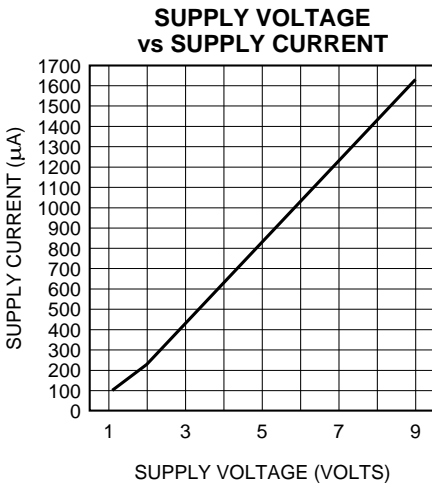
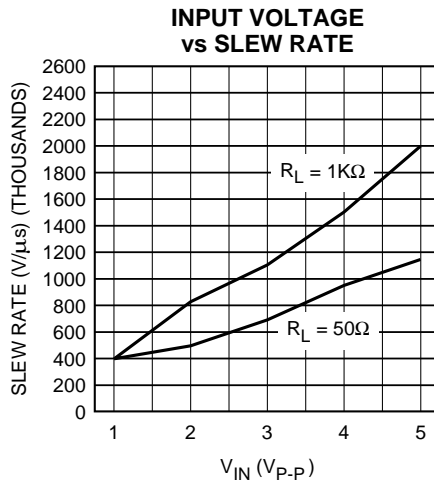
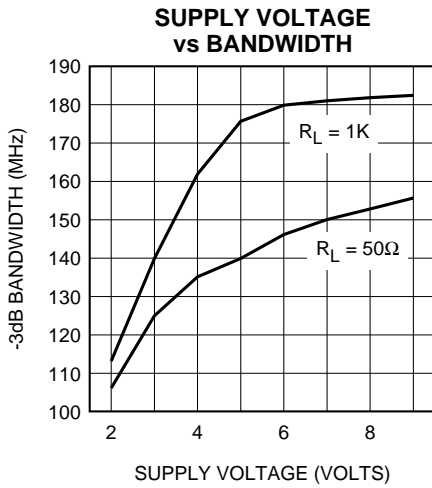
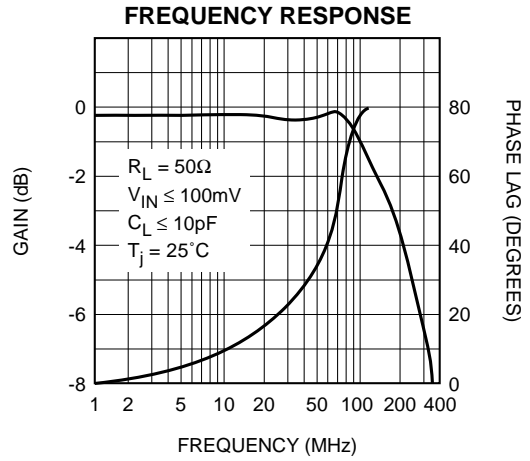
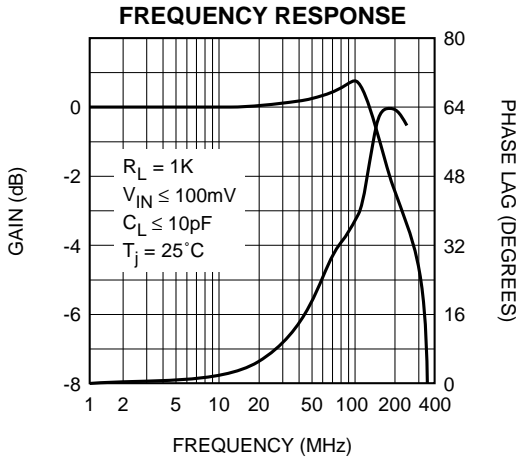
**Note 3:** The test circuit consists of the human body model of 120pF in series with 1500Ω.

**Note 4:** The maximum power dissipation is a function of T<sub>J(max)</sub>, θ<sub>JA</sub> and T<sub>A</sub>. The maximum allowable power dissipation at any ambient temperature is P<sub>D</sub> = (T<sub>J(max)</sub> - T<sub>A</sub>)/θ<sub>JA</sub>.

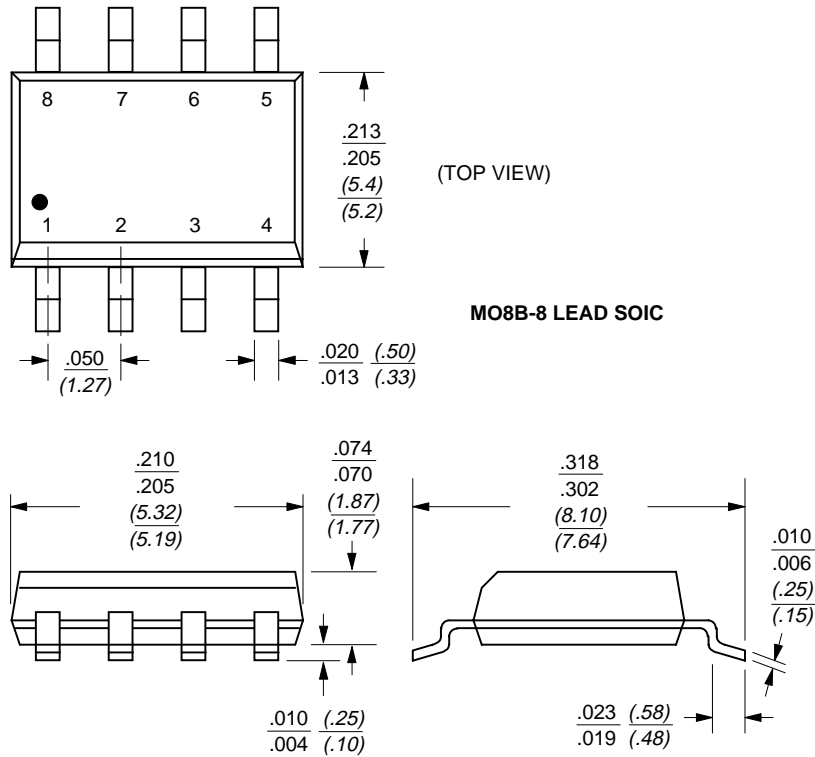
**Note 5:** Limits are guaranteed by testing, correlation or periodic characterization.

**Note 6:** For M & N package, θ<sub>JA</sub> is measured by soldering the unit directly on a printed circuit board and V pins are connected to 2 square inches of 2 oz copper.

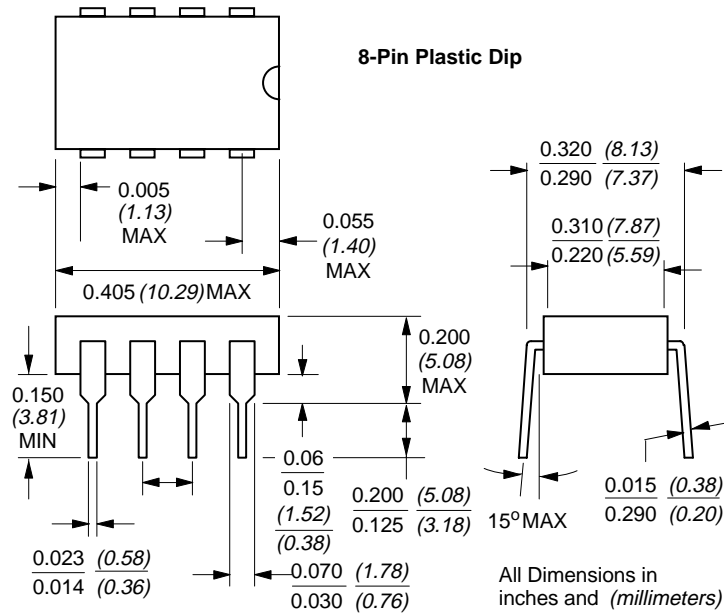
**TYPICAL PERFORMANCE CHARACTERISTICS**



**MO8B DIMENSIONS**



**NO8A DIMENSIONS**



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