

CLM4122 / CLM4322

FEATURES

- High Slew Rate..... 2000V/ μ s
- Wide Bandwidth..... 180MHz
- Low Supply Current 800 μ A
- No Oscillations with Capacitive Loads
- Fully Specified to Drive 50 Ω 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/ μ s, having a small signal bandwidth of 180MHz, delivers 60mA, yet draws only 800 μ A supply current.

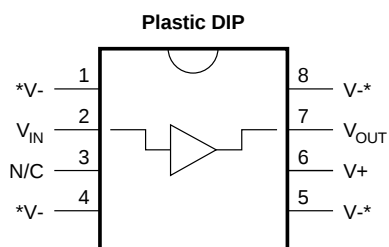
The 4mW power consumption, fast slew rate, wide bandwidth, and high output drive make the CLM4122 family the ideal choice for battery operated equipment.

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

ORDERING INFORMATION

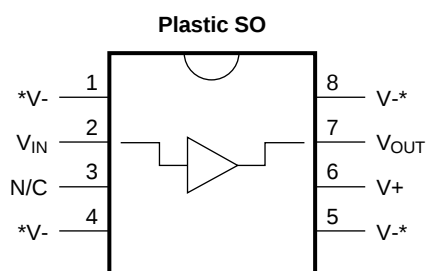
Part	Package	Temperature Range
CLM4122 N	NO8A (Plastic P Dip 8 Lead)	-40°C to 85°C
CLM4122 M	MO8B (SOIC 8 Lead)	-40°C to 85°C
CLM4322 N	NO8A (Plastic P Dip 8 Lead)	-25°C to 70°C
CLM4322 M	MO8B (SOIC 8 Lead)	-25°C to 70°C

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
Input Voltage	$\pm V_{\text{supply}}$
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering 10 seconds)	260°C
Power Dissipation	(Note 4)

ESD Tolerance (Note 3)	$\pm 2000V$
Thermal Resistance (θ_{JA}) (Note 6)	
N Package	50°C/W
M Package	60°C/W
Maximum Junction Temperature	150°C

DC ELECTRICAL CHARACTERISTICS

The following specifications apply for Supply Voltage = +5V, $V_{CM} = 0$, $R_L \geq 100K\Omega$ and $R_S = 50\Omega$ unless otherwise noted.

Boldface limits apply for $T_A = T_J = T_{MIN}$ to T_{MAX} ; all other limits $T_A = T_J = 25^\circ C$.

SYMBOL	CHARACTERISTICS	TYP	CLM4122	CLM4322	UNITS	CONDITIONS
			Limit (Note 5)	Limit (Note 5)		
A_{V1}	Voltage Gain 1	0.970	0.950	0.950	V/V Min	$R_L = 1K\Omega$, $V_{IN} = +3V$
A_{V2}	Voltage Gain 2	0.900	0.800	0.800		$R_L = 50\Omega$, $V_{IN} = +3V$
V_{OS}	Offset Voltage	5	25	40	mV Max	$V_{IN} = 2.5V$
I_B	Input Bias Current	1	6	10	μA Max	$R_L = 1K\Omega$, $R_S = 10k\Omega$,
C_{IN}	Input Capacitance	3.5			pF	
R_O	Output Resistance	3	5 10	5 6	Ω Max	$I_{OUT} = 0$ to 1mA
I_S	Supply Current	825	1100	1200	μA Max	$R_L = \infty$
V_{O1}	Output Swing 1	4.5	4	4	V	$R_L = 1K$
V_{O2}	Output Swing 2	3.5	3.0	3.0		$R_L = 100\Omega$
I_{OUT}	Output Current	60	44	44	mA	$V_{IN} = +4V$

AC ELECTRICAL CHARACTERISTICS

The following specifications apply for Supply Voltage = +5V, $R_L \geq 100K\Omega$ and $R_S = 50\Omega$ unless otherwise noted.

Boldface limits apply for $T_A = T_J = T_{MIN}$ to T_{MAX} ; all other limits $T_A = T_J = 25^\circ C$.

SYMBOL	CHARACTERISTICS	TYP	CLM4122	CLM4322	UNITS	CONDITIONS
			Limit (Note 5)	Limit (Note 5)		
SR_1	Slew Rate 1	2000	1500	1200	V/ μs	$R_L = 1K\Omega$ (Note 2), $V_{IN} = 3.5V_{PP}$
SR_2	Slew Rate 2	1000	700	600		$R_L = 50\Omega$ (Note 2), $V_{IN} = 3.5V_{PP}$
SS_{BW}	Small Signal Bandwidth	180	140	100	MHz	$V_{IN} = 100mV_{PP}$, $R_L = 50\Omega$, $C_L \leq 10pF$
LS_{BW}	Large Signal Bandwidth	170	130	100		$V_{IN} = +4V$, $R_L = 1K$, $C_L \leq 10pF$
P_{BW}	Power Bandwidth	100	70	60		$V_{IN} = +4V$, $R_L = 50\Omega$, $C_L \leq 10pF$
t_r , t_f	Rise Time Fall Time	2.0	2.5	3.5	ns	$R_L = 50\Omega$, $C_L \leq 10pF$, $V_O = 100mV_{PP}$
t_{pd}	Propagation Delay Time	3.0			ns	$R_L = 50\Omega$, $C_L \leq 10pF$, $V_O = 100mV_{PP}$
O_S	Overshoot	10			%	$R_L = 50\Omega$, $C_L \leq 10pF$, $V_O = 100mV_{PP}$

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 50 Ω 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 .

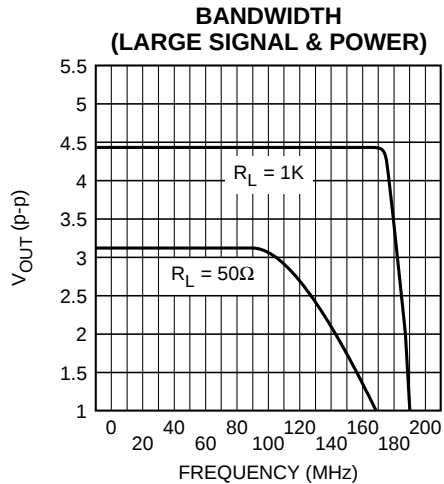
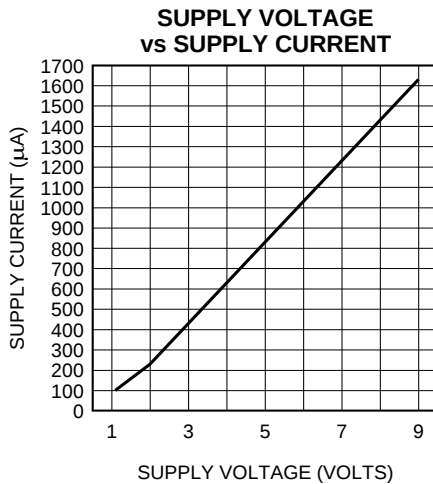
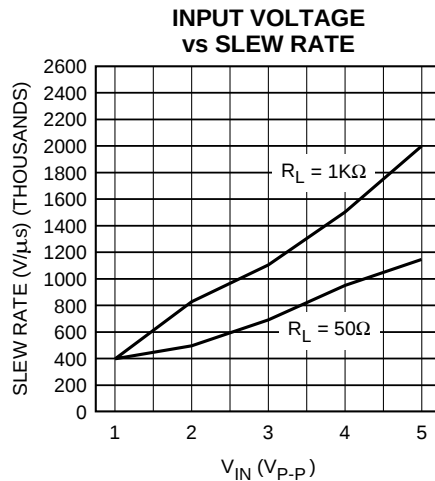
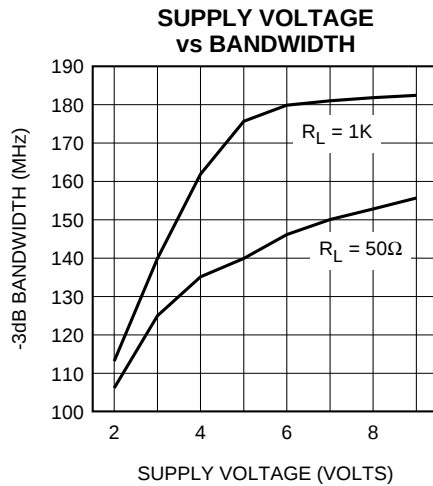
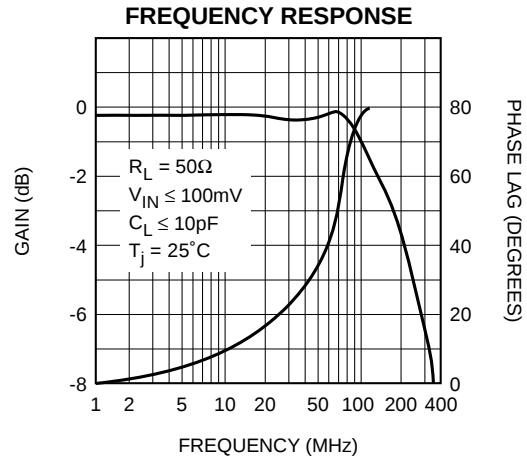
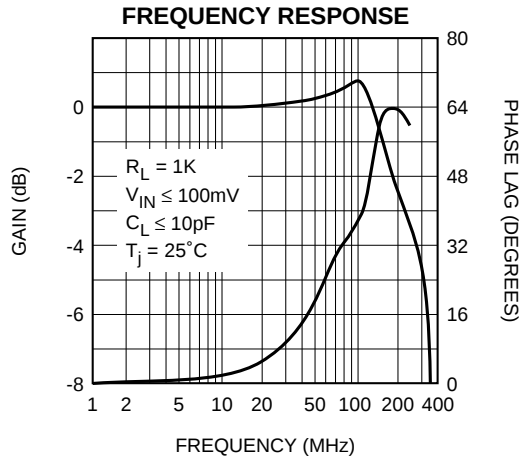
Note 3: The test circuit consists of the human body model of 120pF in series with 1500 Ω .

Note 4: The maximum power dissipation is a function of $T_{J(max)}$, θ_{JA} and T_A . The maximum allowable power dissipation at any ambient temperature is $P_D = (T_{J(max)} - T_A)/\theta_{JA}$.

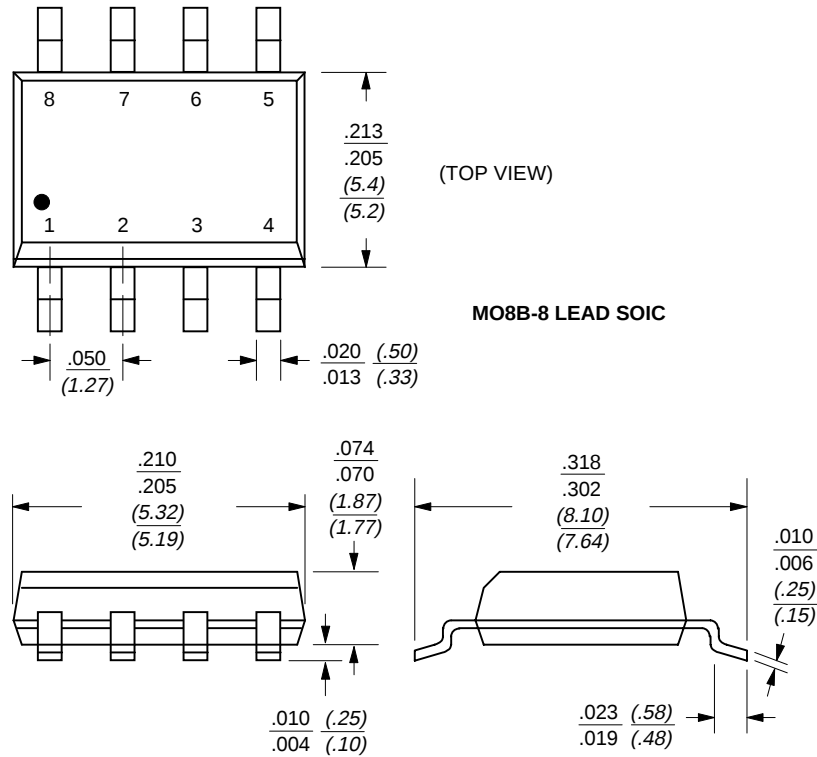
Note 5: Limits are guaranteed by testing, correlation or periodic characterization.

Note 6: For M & N package, θ_{JA} 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.

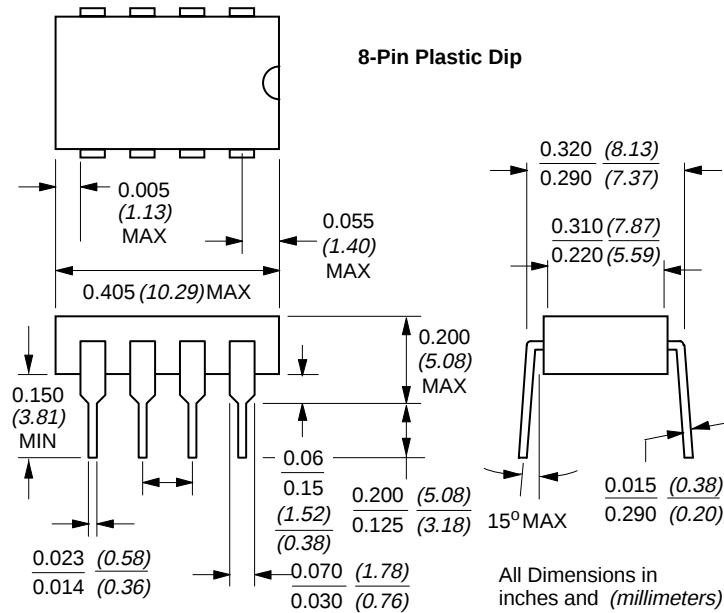
TYPICAL PERFORMANCE CHARACTERISTICS



MO8B DIMENSIONS



NO8A DIMENSIONS





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