



350MHz High Speed Buffer

CLM4125

FEATURES

- High Slew Rate. 3500V/ μ s
- Wide Bandwidth. 350MHz
- Peak Output Current. 100mA
- No Oscillations with Capacitive Loads
- Fully Specified to Drive 50 Ω Lines

APPLICATIONS

- Pulse and Video Amplifier
- Coaxial Cable Driver
- Video Switching and Routing

GENERAL DESCRIPTION

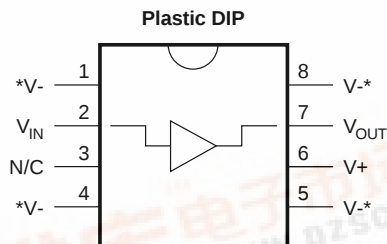
The CLM4125 is a high speed unity gain buffers that slew at 3500V/ μ s, and a small signal bandwidth of 350MHz.

This device is ideal to drive a active load CRT amplifier.

ORDERING INFORMATION

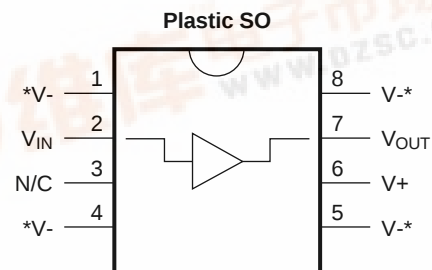
Part	Package	Temperature Range
CLM4125 N	NO8A (Plastic P Dip 8 Lead)	-40°C to 85°C
CLM4125 M	MO8B (SOIC 8 Lead)	-40°C to 85°C

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..... ± 20
 Input Voltage..... $\pm V_{\text{supply}}$
 Storage Temperature Range..... -65°C to $+150^{\circ}\text{C}$
 Lead Temperature
 (Soldering 10 seconds)..... 260°C
 Power Dissipation..... (Note 4)

ESD Tolerance (Note 3)..... $\pm 2000\text{V}$
 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 = +12, -10V, $V_{CM} = 0$, $R_L \geq 100\text{K}\Omega$ and $R_S = 50\Omega$ unless otherwise noted.
Boldface limits apply for $T_A = T_J = T_{MIN}$ to T_{MAX} ; all other limits $T_A = T_J = 25^{\circ}\text{C}$.

SYMBOL	CHARACTERISTICS	TYP	Limit (Note 5)	UNITS	CONDITIONS
A_{V1}	Voltage Gain 1	0.99	0.96	V/V Min	$R_L = 1\text{K}$, $V_{IN} = \pm 10\text{V}$
A_{V2}	Voltage Gain 2	0.92	0.89		$R_L = 100\Omega$, $V_{IN} = \pm 10\text{V}$
A_{V3}	Voltage Gain 3	0.92	0.89		$R_L = 50\Omega$, $V_{IN} = \pm 5\text{V}$
V_{OS}	Offset Voltage	10	$\begin{smallmatrix} 15 \\ \mathbf{25} \end{smallmatrix}$	mV Max	$R_L = 1\text{K}$
I_B	Input Bias Current	1	$\begin{smallmatrix} 5 \\ \mathbf{7} \end{smallmatrix}$	μA Max	$R_L = 1\text{K}\Omega$, $R_S = 10\text{k}\Omega$,
R_{IN}	Input Resistance	0.3		$\text{M}\Omega$	$R_L = 50\Omega$
C_{IN}	Input Capacitance	3.5		pF	
R_O	Output Resistance	3	$\begin{smallmatrix} 5 \\ \mathbf{10} \end{smallmatrix}$	Ω Max	$I_{OUT} = \pm 10\text{mA}$
I_{S1}	Supply Current 1	20	$\begin{smallmatrix} 30 \\ \mathbf{30} \end{smallmatrix}$	mA Max	$R_L = \infty$
V_{O1}	Output Swing 1	11	9	$\pm\text{V}$ Min	$R_L = 1\text{K}$
V_{O2}	Output Swing 2	9	8		$R_L = 100\Omega$
V_{O3}	Output Swing 3	9	8	V_{PP} Min	$R_L = 50\Omega$

AC ELECTRICAL CHARACTERISTICS

The following specifications apply for Supply Voltage = +12, -10V, $V_{CM} = 0$, $R_L \geq 100K\Omega$ 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	Limit (Note 5)	UNITS	CONDITIONS
SR ₁	Slew Rate 1	3500	3000	V/ μ s	$V_{IN} = \pm 4.5V$, $R_L = 100\Omega$ (Note 2)
SR ₂	Slew Rate 2	2250	2000		$V_{IN} = \pm 4V$, $R_L = 50\Omega$ (Note 2)
SS _{BW}	Small Signal Bandwidth	350	300	MHz	$V_{IN} = \pm 100mV_{PP}$, $R_L = 50\Omega$ $C_L \leq 10pF$
LS _{BW}	Large Signal Bandwidth	140	120		$V_{OUT} = \pm 4.5V$, $R_L = 100\Omega$ $C_L \leq 10pF$
P _{BW}	Power Bandwidth	130	110		$V_{IN} = \pm 4V$, $C_L \leq 100pF$
t _r , t _f	Rise Time Fall Time	2.5	3.5	ns	$C_L \leq 100pF$ $V_O = 4V_{PP}$
t _{pd}	Propagation Delay Time	2.0		ns	$R_L = 50\Omega$, $C_L \leq 10pF$ $V_O = 4V_{PP}$
O _S	Overshoot	3		%	$R_L = 50\Omega$, $C_L \leq 10pF$ $V_O = 100mV_{PP}$

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 50Ω source impedance at $25^\circ C$. For accurate measurements, the input slew rate should be at least $5000V/\mu s$.

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 $T_{J(max)}$, 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

