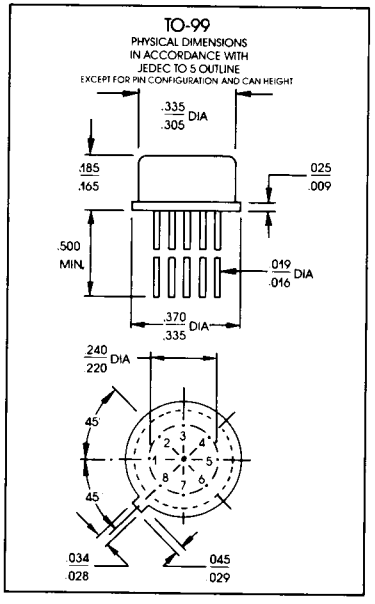
CLH0002*

−55°C to +125°C
Current Amplifier



METAL CAN PACKAGE

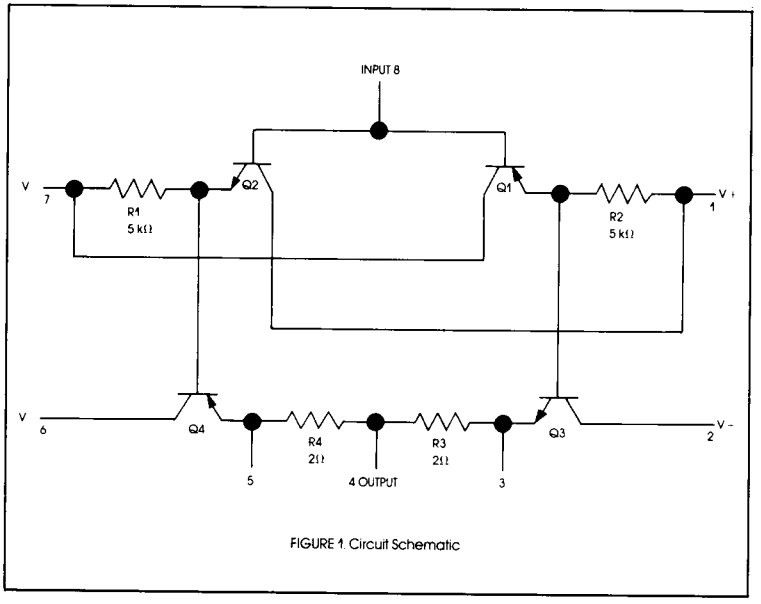


FIGURE 1. Circuit Schematic

SCHEMATIC AND CONNECTION DIAGRAM

GENERAL DESCRIPTION

The CLH0002 is a thick film hybrid current amplifier intended for high reliability, military/aerospace applications over -55°C to +125°C. It is a direct replacement for the National LH0002. The CLH0002 is available with standard or special screening and processing.

CIRCUIT FEATURES:

- High Input Impedance 400 kΩ
- Low Output Impedance 6Ω
- High Power Efficiency
- Low Harmonic Distortion
- DC to 30 MHz Bandwidth
- Output Voltage Swing that Approaches Supply Voltage
- 400 mA Pulsed Output Current
- Slew rate is typically 200V/μs
- Operation from ±5V to ±20V

These features make it ideal to integrate with an operational amplifier inside a closed loop configuration to increase current output. The symmetrical output portion of the circuit also provides a low output impedance for both the positive and negative slopes of output pulses.

The CLH0002 is available in an 8-lead low-profile TO-99 header.

ABSOLUTE MAXIMUM RATINGS

Supply Voltage	±22V
Power Dissipation Ambient	600 mW
Input Voltage (Equal to Power Supply Voltage)	
Storage Temperature Range	−65°C to +150°C
Operating Temperature Range CLH0002	−55°C to +125°C
Steady State Output Current	±100 mA
Pulsed Output Current (50 ms On/1 sec Off)	±400 mA

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*Equivalent to National LH0002

CLH0002*
−55°C to +125°C
Current Amplifier

ELECTRICAL CHARACTERISTICS (Note 1)

PARAMETERS	CONDITIONS	MIN	TYP	MAX	UNITS
Voltage Gain	$R_S = 10\ k\Omega$, $R_L = 1.0\ k\Omega$ $V_{IN} = 3.0\ V_{PP}$, f = 1.0 kHz $T_A = -55°C$ to 125°C	.95	.97		
AC Current Gain	$V_{IN} = 1.0\ V_{rms}$ f = 1.0 kHz		40		A/mA
Input Impedance	$R_S = 200\ k\Omega$, $V_{IN} = 1.0\ V_{rms}$ f = 1.0 kHz, $R_L = 1.0\ k\Omega$	180	400	—	kΩ
Output Impedance	$V_{IN} = 1.0\ V_{rms}$, f = 1.0 kHz $R_L = 50\Omega$, $R_S = 10\ k\Omega$	—	6	10	Ω
Output Voltage Swing	$R_L = 1.0\ k\Omega$, f = 1.0 kHz	±10	±11	—	V
Output Voltage Swing	$V_S = \pm 15V$, $V_{IN} = \pm 10V$, $R_L = 100\Omega$, $T_A = 25°C$	±9.5V			
DC Output Offset Voltage	$R_S = 300\Omega$, $R_L = 1.0\ k\Omega$ $T_A = -55°C$ to 125°C	—	±10	±30	mV
DC Input Offset Current	$R_S = 10\ k\Omega$, $R_L = 1.0\ k\Omega$ $T_A = -55°C$ to 125°C	—	±6.0	±10	μA
Harmonic Distortion	$V_{IN} = 5.0\ V_{rms}$, f = 1.0 kHz	—	0.1	—	%
Rise Time	$R_L = 50\Omega$, $\Delta V_{IN} = 100mV$		7	12	ns
Positive Supply Current	$R_S = 10\ k\Omega$, $R_L = 1\ k\Omega$	—	+6.0	+10.0	mA
Negative Supply Current	$R_S = 10\ k\Omega$, $R_L = 1\ k\Omega$	—	−6.0	−10.0	mA

Note 1: Specification applies for $T_A = 25°C$ with +12V on Pins 1 and 2; −12V on Pins 6 and 7 unless otherwise specified. The parameter guarantees apply over the temperature range of −55°C to 125°C.

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