

FEATURES

- High Input Impedance 400kΩ
- Low Output Impedance 3Ω
- High Power Efficiency
- Low Harmonic Distortion
- Bandwidth DC to 50MHz
- Output Voltage Swing that Approaches Supply Voltage
- Pulsed Output Current 400mA
- Slew Rate 200V/μs
- Operation ±5V to ±20V

APPLICATIONS

- Line Driver
- Instrumentation Shield Driver
- High Speed D/A Conversion
- Precision Current Source
- Video Driver

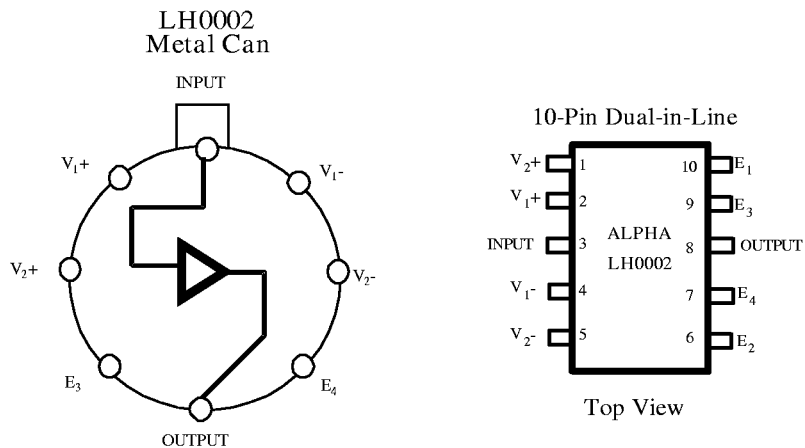
PRODUCT DESCRIPTION

The ALPHA Semiconductor LH0002 is a high speed unity gain buffer designed to provide high current drive capability at frequencies from DC to over 50MHz. It is capable of providing a continuous current of ±100mA and a peak of ±400mA. It is ideal to integrate with an operational amplifier inside a close loop configuration.

ORDERING INFORMATION

PART #	PACKAGE TYPE	TEMPERATURE RANGE
LH0002H	T05-8 Lead	-55°C to +125°C
LH0002CH	T05-8 Lead	-40°C to +85°C
LH0002CN	Plastic DIP-10 Pin	-40°C to +85°C

PIN CONNECTIONS



ABSOLUTE MAXIMUM RATINGS

Supply Voltage.....	±22V
Power Dissipation (Note 3).....	600mW
Input Voltage..... (Equal to Power Supply Voltage)	
Storage Temperature Range.....	-65°C to 150°C
Junction Temperature	
N Package.....	+150°C
H Package.....	+175°C
Steady Output Current.....	±100mA
Pulsed Output Current (50ms On/1 sec. Off).....	±400mA
Lead Temperature Soldering (10 seconds)	
Metal Can.....	300°C
Plastic.....	300°C
EDS Rating (Note 5).....	2kV

OPERATING RATINGS (Note 3)

Temperature Range	
LH0002H.....	-55°C to +125°C
LH0002C.....	-40°C to +85°C
Thermal Resistance (Note 4)	
θ_{JA} , H Package.....	125°C/W
θ_{JC} , H Package.....	75°C/W
θ_{JA} , N Package.....	120°C/W

ELECTRICAL CHARACTERISTICS (Note 1)

Parameter	Conditions	LH0002			Units
		Min	Typ.	Max	
Voltage Gain	$R_S = 10k\Omega$, $R_L = 1.0k\Omega$, $V_{IN} = \pm 10V$	0.95	0.97		
Input Impedence	$R_S = 200k\Omega$, $V_{IN} = \pm 1.0V$, $R_L = 1.0k\Omega$	180	400		k Ω
Output Impedence	$V_{IN} = \pm 1.0V$, $R_L = 50\Omega$, $R_S = 10k\Omega$		6.0	10	Ω
Output Voltage Swing	$R_L = 1.0k\Omega$, $V_{IN} = \pm 12V$	±10	±11		V
Output Voltage Swing	$V_S = \pm 15V$, $V_{IN} = \pm 12V$, $R_S = 50k\Omega$, $R_L = 100\Omega$, $T_A = 25^\circ C$	±10	±11		v
DC Output Offset Voltage	$R_S = 300\Omega$, $R_L = 1.0k\Omega$		±10	±30	mV
DC Input Bias Current	$R_S = 10k\Omega$, $R_L = 1.0k\Omega$		±6.0	±10	μA
Harmonic Distortion	$V_{IN} = 5.0V_{rms}$, $f = 1.0kHz$		0.1		%
Rise Time	$R_L = 50\Omega$, $\Delta V_{IN} = 100mV$		7.0	12	ns
Positive Supply Current	$R_S = 10k\Omega$, $R_L = 1.0k\Omega$		+6.0	+10	mA
Negative Supply Current	$R_S = 10k\Omega$, $R_L = 1.0k\Omega$		-6.0	-10	mA

Note 1: Specification applies for $T_A = 25^\circ C$ with +12V on Pins 1 and 2; -12V on Pins 6 and 7 for the metal can package and +12V on Pins 1 and 2; -12V on Pins 4 and 5 for the dual-in-line package, unless otherwise specified. The parameter guarantees for LH0002C apply over the temperature range of 0°C to +85°C while parameters for the LH0002 are guaranteed over the temperature range -55°C to +125°C unless otherwise specified.

Note 2: Absolute Maximum ratings indicate limits beyond which damage to the device may occur. Operating Ratings indicate test conditions for which the devices intended to be functional, but do not guarantee specific performance limits. For guaranteed specifications and test conditions, see the Electrical Characteristics. The guaranteed specifications apply only for the test conditions listed.

Note 3: The maximum power dissipation is a function of maximum junction temperature (T_{JMax}), total thermal resistance (θ_{JA}), and ambient temperature (T_A) maximum allowed power dissipation at any ambient is $P_D = (T_{JMax} - T_A) / \theta_{JA}$.

Note 4: For operating at elevated temperatures, the device must be derated based on the thermal resistance θ_{JA} and T_{JMax} . $T_J = T_A + P_D \theta_{JA}$.

Note 5: Human body model. 1.5k Ω in series with 100p