INTERSIL

LH2110/LH2310 Dual Voltage Follower

FEATURES

- **Low input current - 1 nA**
- **High input resistance - 10 MΩ**
- **High slew rate - 30V/μs**
- **Wide bandwidth - 20 MHz**
- **Wide operating supply range - ±5V to ±18V**
- **Output short circuit protected.**

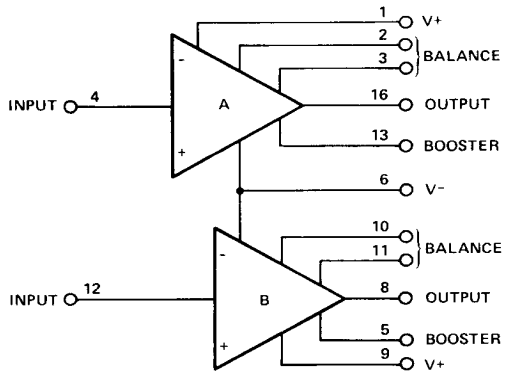
GENERAL DESCRIPTION

The LH2110 series of dual voltage followers consist of two LM110 type followers in a single hermetic package. Featuring all the same performance characteristics of the single, these duals offer in addition closer thermal tracking, lower weight, and reduced insertion cost.

The LH2110 is specified for operation over the −55°C to +125°C military temperature range, and the LH2310 is specified for operation from 0°C to +70°C.

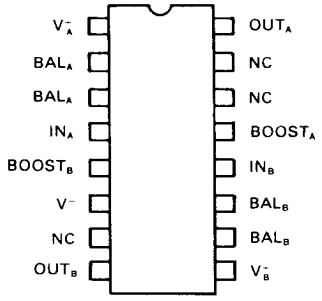
5

CONNECTION DIAGRAM



ORDER NUMBER LH2110D or LH2310D

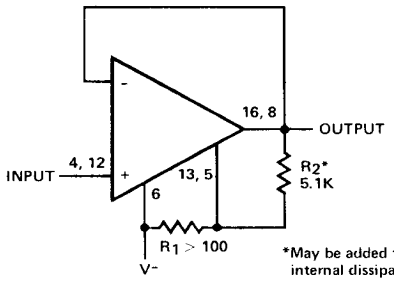
PIN CONFIGURATION



(outline dwg DE)

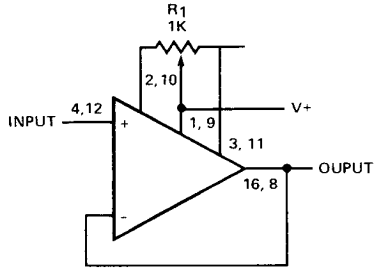
AUXILIARY CIRCUITS

INCREASING NEGATIVE SWING UNDER LOAD



*May be added to reduce internal dissipation

OFFSET BALANCING CIRCUIT



ABSOLUTE MAXIMUM RATINGS

Supply Voltage	±18V
Power Dissipation (Note 1)	500 mW
Input Voltage (Note 2)	±15V
Output Short Circuit Duration (Note 3)	Continuous
Operating Temperature Range LH2110	−55°C to 125°C
LH2310	0°C to 70°C
Storage Temperature Range	−65°C to 150°C
Lead Temperature (Soldering, 10 sec)	300°C

ELECTRICAL CHARACTERISTICS Each side (Note 4)

PARAMETER	CONDITIONS	LIMITS LH2110	LIMITS LH2310	UNITS
Input Offset Voltage	$T_A = 25°C$	4.0	7.5	mV Max
Input Bias Current	$T_A = 25°C$	3.0	7.0	nA Max
Input Resistance	$T_A = 25°C$	10M	10M	Ω Min
Input Capacitance		1.5	1.5	pF Typ
Large Signal Voltage Gain	$T_A = 25°C$, $V_S = ±15V$ $V_{OUT} = ±10V$, $R_L = 8\ kΩ$	.999	.999	V/V Min
Output Resistance	$T_A = 25°C$	2.5	2.5	Ω Max
Supply Current (Each Amplifier)	$T_A = 25°C$	5.5	5.5	mA Max
Input Offset Voltage		6.0	10	mV Max
Offset Voltage	$-55°C \leq T_A \leq 85°C$	6	10	μV/°C Typ
Temperature Drift	$T_A = 125°C$	12	—	
Input Bias Current		10	10	nA Max
Large Signal Voltage Gain	$V_S = ±15V$, $V_{OUT} = ±10V$ $R_L = 10\ kΩ$	.999	.999	V/V Min
Output Voltage Swing (Note 5)	$V_S = ±15V$, R_L 10 kΩ	±10	±10	V Min
Supply Current (Each Amplifier)	$T_A = 125°C$	4.0	—	mA Max
Supply Voltage Rejection Ratio	$±5V \leq V_S \leq ±18V$	70	70	dB Min

Note 1: The maximum junction temperature of the LH2110 is 150°C, while that of the LH2310 is 85°C. The thermal resistance of the package is 100°C/W, junction to ambient.
Note 2: For supply voltages less than ±15V, the absolute maximum input voltage is equal to the supply voltage.
Note 3: Continuous short circuit is allowed for case temperatures to 125°C and ambient temperatures to 70°C. It is necessary to insert a resistor greater than 2 KΩ in series with the inut when the amplifier is driven from low impedance sources to prevent damage when the output is shorted.
Note 4: These specifications apply for $±5V \leq V_S \leq ±18V$ and $-55°C \leq T_A \leq 125°C$, unless otherwise specified, and for the LH2310, all temperature specifications are limited to $0°C \leq T_A \leq 70°C$.
Note 5: Increased output swing under load can be obtained by connecting an external resistor between the booster and V− terminals.