



LA3110, 3120

Monolithic Linear Integrated Circuit
LOW NOISE EQUALIZER AMPLIFIER

- Features**
- Low noise amplifier
 - High gain, low distortion
 - Good S/N by high gain of first stage
 - Sufficient characteristics about supply voltage and ambient temperature

Maximum Ratings at Ta=25°C

		LA3110	LA3120	
Maximum Supply Voltage	V _{CCmax}	22	28	V
Allowable Power Dissipation	P _{dmax} Ta≤80°C	100	100	mW
Operating Temperature	T _{opg}	-20 to +80		°C
Storage Temperature	T _{stg}	-40 to +125		°C

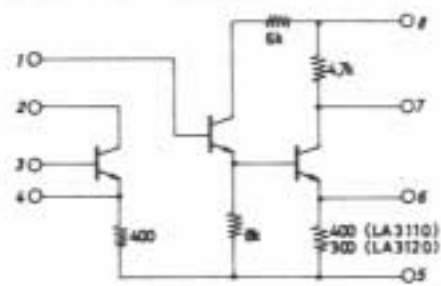
Recommended Operating Condition at Ta=25°C

		LA3110	LA3120	
Recommended Supply Voltage	V _{CC}	15	20	V
Load Resistance	R _L	47k	47k	ohm

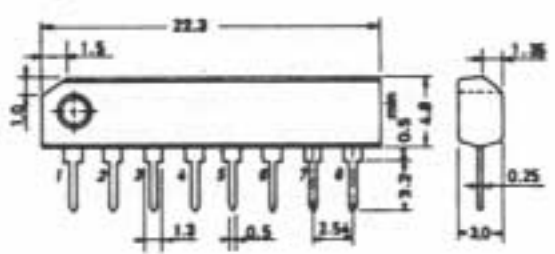
Operation Characteristics at Ta=25°C, V_{CC}=15V(LA3110), 20V(LA3120), R_L=47 kohm, f=1kHz

			min	typ	max	unit
Dissipation Current	I _{cc}	LA3110		2.3	3.0	mA
		LA3120		3.0	4.0	mA
Voltage Gain	V _{G0} open loop	LA3110	84	88		dB
		LA3120	85	89		dB
Output Voltage	V _O closed loop THD=0.2%	LA3110	3.0	4.0	4.2	V
		LA3120	4.0	5.0		V
Total Harmonic Distortion	THD V _O =2V			0.05		%
Input Resistance	r _i			200k		ohm
Noise Voltage Converted to Input	V _{Ni} R _g =2.2 kohm, RIAA			1.0	2.0	uV

Equivalent Circuit



Case Outline 3016B-S81C (unit:mm)

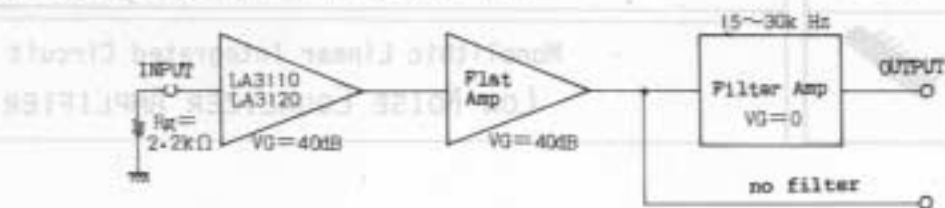


SANYO: SEP8

These specifications are subject to change without notice.

TOKYO SANYO ELECTRIC CO., LTD. SEMICONDUCTOR DIVISION
24-13 3-CHOME, YUSHIMA, BUNKYO-KU, TOKYO, JAPAN 113

Noise voltage measurement circuit



Notice in Use of IC

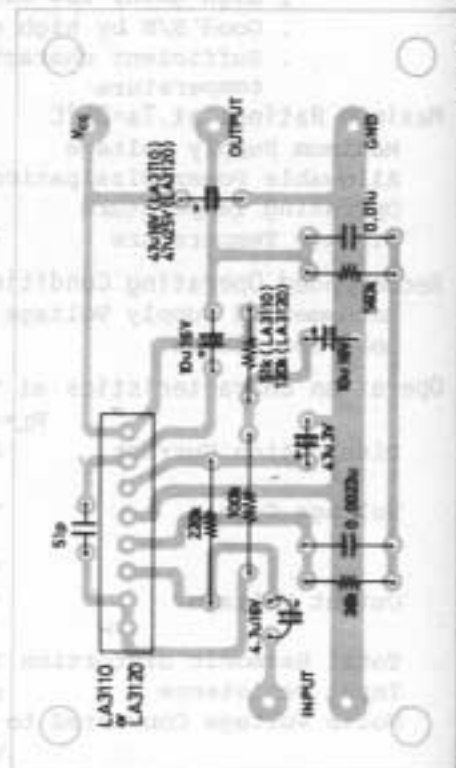
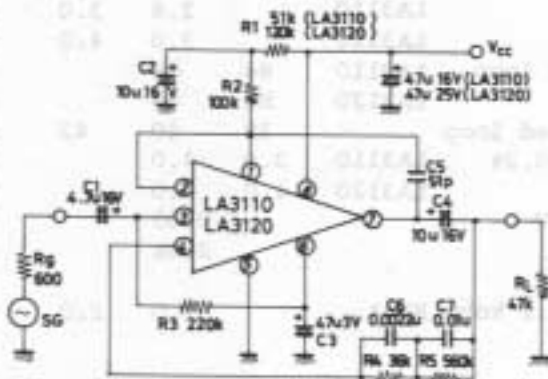
Maximum Ratings

Sufficient supply voltage drifting margin should be prepared and maximum ratings should not be exceeded absolutely. Exceeding maximum ratings lead to destruction of IC even by slight condition drifting when IC is used near ratings.

Terminating Pin to Pin

Turning on power supply leaving pin to pin terminated causes destruction and failure. When IC is installed on the printed board, pay attention to switch on the power supply after ascertaining not to terminate pin to pin by solder.

Application



An Example of Printed Pattern

[Peripheral Parts]

- C1, 4.7μF: Coupling Capacitor for DC current rejection which prevents dc current into base from reflecting to input signal. C1 is calculated as $C1=1/2\pi f_L z_i$ (f_L : low cut off frequency, z_i : input impedance). C1 is recommended over 2.2μF as small C1 is apt to receive inductive hum. Over 6.3 WV is also recommended as high working voltage can have less leakage.
- C2, 10μF: Filter capacitor of supplying power. Smaller C2 makes starting time favourably short, but is limited for the essential purpose. 10μF is available.
- C3, 4.7μF: Bypass capacitor. Shorts emitter resistor on ac and prevents ac signal from feedback to input. Larger capacitor makes starting time longer.
- C4, 10μF: Output capacitor. C4 is calculated as $C4=1/2\pi f_L R_L$ (f_L : low cut off frequency, R_L : load resistance).
- C5, 51pF: Capacitor for phase compensation. Prevents high frequency range oscillation which arises from phase error when feedbacked deeply. Pay attention to C5 by which high frequency response is decided.
- R1: Filter resistor.
- R2: Collector resistor of first stage transistor of IC. Also load resistor on ac.
- R3: Bias resistor for supplying base current of first stage transistor.
- R4, R5, C6, C7: Equalizer of RIAA