

LM124 Series — General Purpose Single Supply Operational Amplifier

GENERAL DESCRIPTION

The LM124 series consists of four independent, high gain, internally frequency compensated operational amplifiers designed specifically to operate from a single power supply over a wide range of voltages

FEATURES

- Internally frequency compensated for unity gain
- Large dc voltage gain—(100dB)
- Wide bandwidth (unity gain)—1MHz (temperature compensated)
- Wide power supply range
Single supply—(3Vdc to 30Vdc) or dual supplies—(± 1.5 Vdc to ± 15 Vdc)
- Very low supply current drain—essentially independent of supply voltage (1mW/op amp at ± 5 Vdc)
- Low input biasing current—45nA dc temperature compensated)
- Low input offset voltage—(2mVdc) and offset current—(5nA dc)
- Differential input voltage range equal to the power supply voltage
- Large output voltage—(0Vdc to $V+ - 1.5$ Vdc swing)

UNIQUE FEATURES

In the linear mode the input common-mode voltage range includes ground and the output voltage can also swing to ground, even though operated from only a single power supply voltage.

The unity gain cross frequency is temperature compensated.

The input bias current is also temperature compensated.

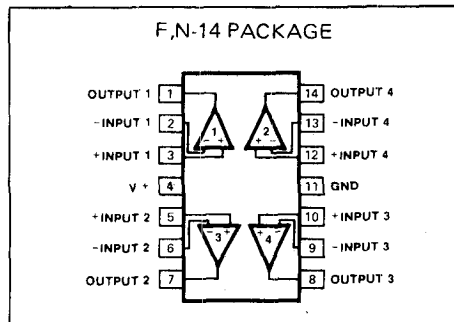
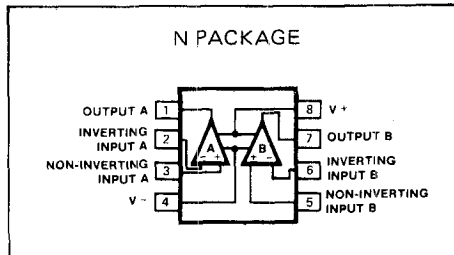
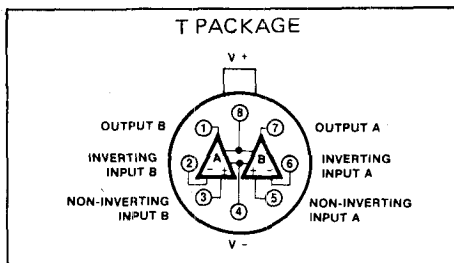
MAXIMUM RATINGS

PARAMETER	RATING	UNIT
V+ Supply voltage	32 or ± 16	Vdc
Differential input voltage	32	Vdc
Input voltage	-0.3 to +32	Vdc
Power dissipation ¹		
T package	680	mW
N package	570	mW
F package	900	mW
Output short-circuit to GND 1 amplifier ²	Continuous	
V+ < 15Vdc and T _A = 25°C		
Input current (V _{IN} < -0.3V) ³	50	mA
Operating temperature range		
LM324A, LM324,	0 to +70	°C
LM124A, LM124,	-25 to +85	°C
Storage temperature range	-55 to +125	°C
Lead temperature (soldering, 10sec)	-65 to +150	°C
	300	°C

REFERENCE TABLE

TYPE NO.	STOCK NO.	OUTLINE DRWG. NO.
LM124F	55916B	1
LM324N	55917X	1

CONNECTION DIAGRAM

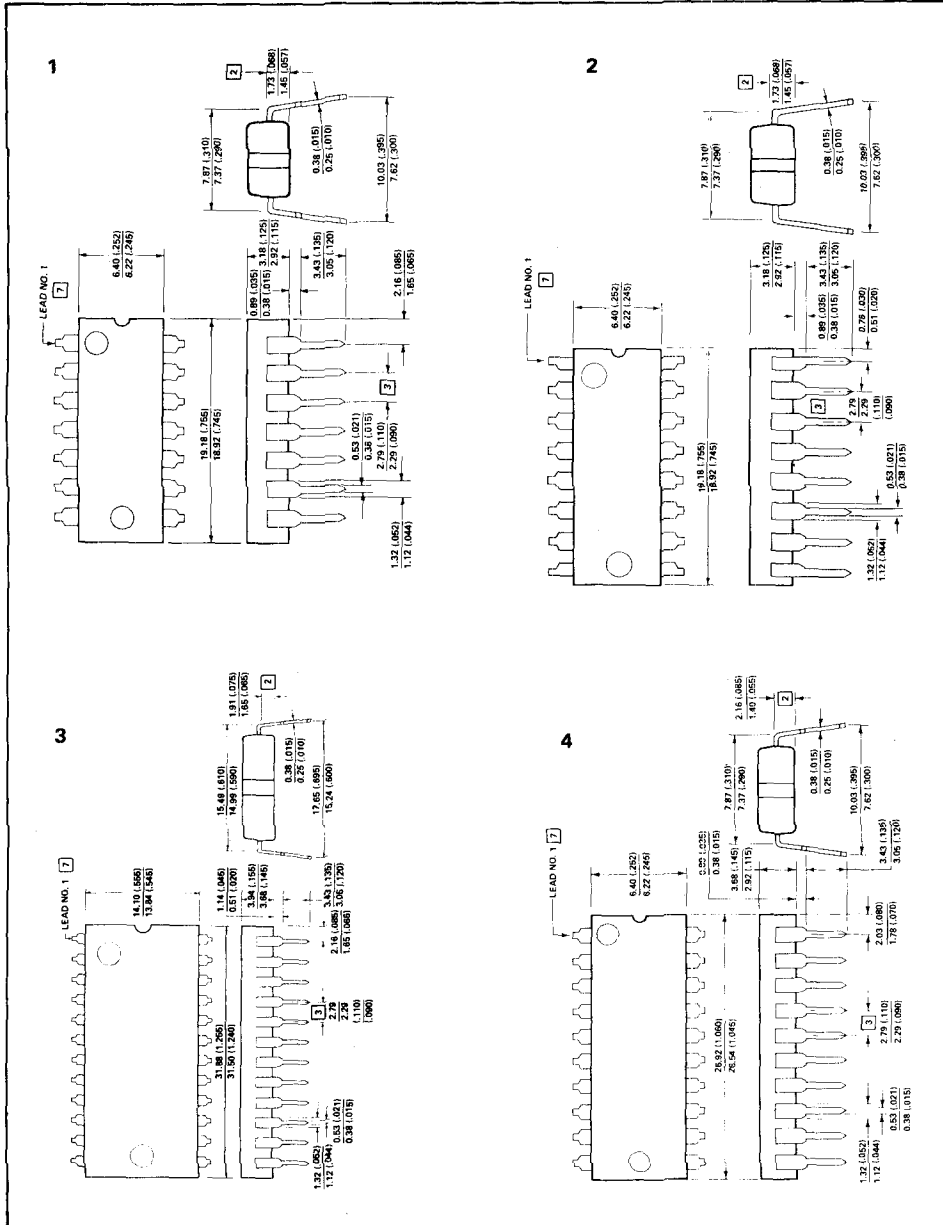


NOTES

1. For operating at high temperatures, all devices must be derated based on a +125°C maximum junction temperature and a thermal resistance of 175°C/W which applies for the device soldered in a printed circuit board, operating in a still air ambient.
2. Short circuits from the output to V+ can cause excessive heating and eventual destruction. The maximum output current is approximately 40mA independent of the magnitude of V+. At values of supply voltage in excess of +15Vdc continuous short-circuits can exceed the power dissipation ratings and cause eventual destruction.
3. The direction of the input current is out of the IC due to the PNP input stage. This current is essentially constant, independent of the state of the output, so no loading change exists on the input lines.

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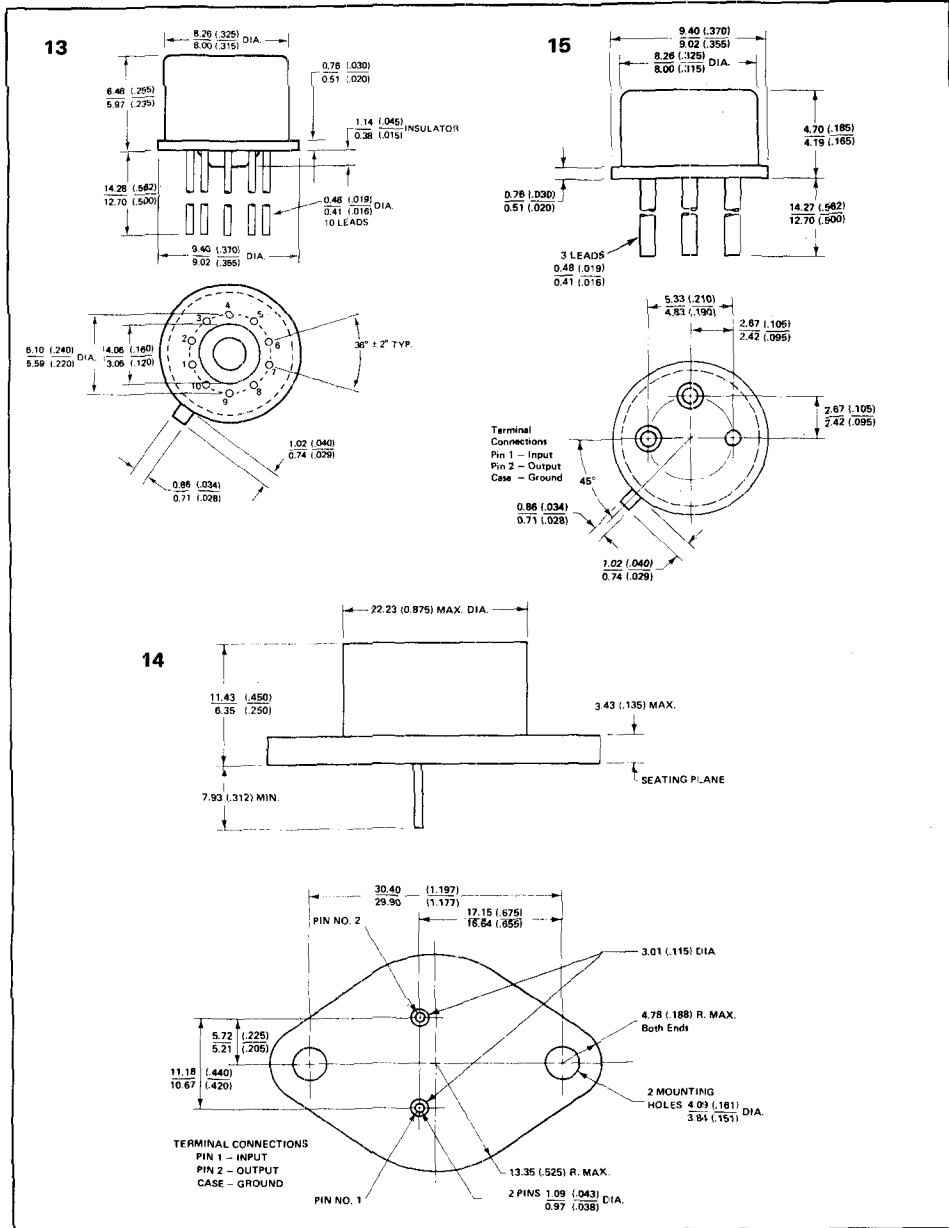


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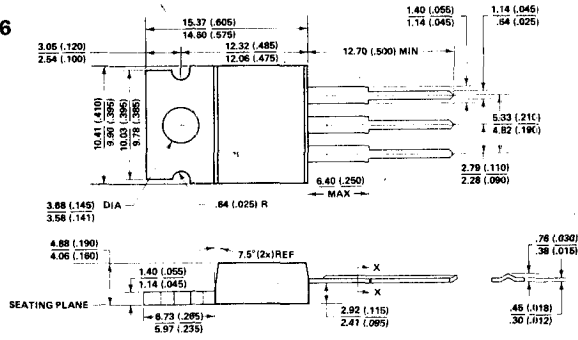
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