AM-464-2
High Voltage, Monolithic Operational Amplifier

FEATURES

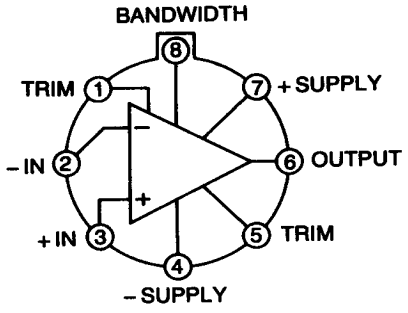
- ±35V Output swing
- ±10V dc to ±40V dc supply
- 4 MHz Gain bandwidth
- 5 V/Microsecond slew rate
- 74 dB Minimum CMRR

GENERAL DESCRIPTION

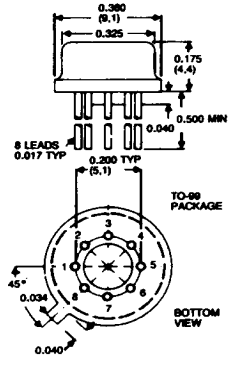
The AM-464-2 is a monolithic IC operational amplifier with an input common mode voltage range of ±35V dc and an output voltage swing of ±35V dc when operated from a ±40V dc supply. Along with high voltage performance, this amplifier has a 4 MHz gain bandwidth product and a 5 V/microsecond output slew rate. It is particularly useful in data conversion circuits and other signal processing applications where higher than normal common mode voltage and output voltage swings are required. The AM-464-2 is internally compensated for all gains and has an on-chip temperature sensing, output current-limiting circuit for absolute output short-circuit protection.

Other features of this amplifier include: common mode rejection of 74 dB minimum, input bias current of 30 nA maximum, and open loop voltage gain of 100,000 minimum. The output slew rate of 5 volts per microsecond gives a 70 volt peak-to-peak sinusoidal output voltage at up to 23 kHz. The power supply voltage can range from ±10V dc to ±40V dc to give output swings from ±5V to ±35V. Power supply quiescent current is only 3.2 mA typical.

The AM-464-2 is packaged in an 8-lead, hermetically sealed TO-99 case and may be used as a pin-for-pin replacement for general purpose IC operational amplifiers such as 741, 101, and 108 for higher voltage applications. Operating temperature range is 0°C to +70°C for the AM-464-2.



MECHANICAL DIMENSIONS INCHES (MM)



NOTE: ALL LEADS GOLD PLATED KOVAR

INPUT/OUTPUT CONNECTIONS

PIN	FUNCTION
1	TRIM
2	-IN
3	+IN
4	-SUPPLY
5	TRIM
6	OUTPUT
7	+SUPPLY
8	BANDWIDTH (C_B)

ABSOLUTE MAXIMUM RATINGS	
Input Overvoltage	±37V max.
Supply Voltage	±50V max.
Internal Power Dissipation	680 mW

FUNCTIONAL SPECIFICATIONS

Typical at 25°C, ±40V dc supply, unless otherwise noted.

INPUT CHARACTERISTICS	
Common Mode Voltage Range	±35V min.
Input Impedance, AM-464-2	200 MegΩ
Input Offset Voltage, AM-464-2	±6 mV max.
Input Bias Current, AM-464-2	30 nA max.
Input Offset Current, AM-464-2	30 nA max.
OUTPUT CHARACTERISTICS	
Output Voltage	±35V min.
Output Current[1], AM-464-2	±10 mA min.
Output Resistance	500 ohms
Stable Capacitive Load	100 pF
PERFORMANCE	
DC Gain, 5 KΩ Load	100K V/V min.
Common Mode Rejection[2], AM-464-2	74 dB min.
Input Offset Voltage Drift	15 μV/°C
Input Offset Current[3], AM-464-2	50 nA max.
Input Noise Voltage, 10 Hz-10 kHz	3 μV RMS
DYNAMIC CHARACTERISTICS	
Unity Gain Bandwidth	4 MHz
Slew Rate	5 V/μsec.
Full Power Frequency, 70V peak-to-peak	23 kHz
POWER REQUIREMENTS	
Voltage, Rated Performance	±40V dc
Power Supply Voltage Range	±10 to ±40V dc
Quiescent Current, AM-464-2	4.5 mA max.
PHYSICAL/ENVIRONMENTAL	
Operating Temperature Range, AM-464-2	0°C to +70°C
Storage Temperature Range	−65°C to +150°C
Package, Hermetically Sealed	TO-99

FOOTNOTES:

1. Overload protected by current limiting and temperature sensing.
2. For common mode voltage = ±30V.
3. At maximum operating temperature.

ORDERING INFORMATION

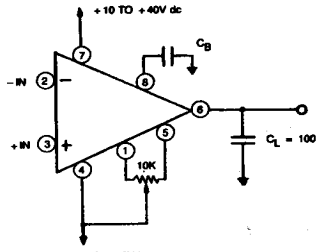
MODEL	OPERATING TEMP. RANGE
AM-464-2	0°C to +70°C

ACCESSORIES

Part Number	Description
TP10K	Trimming Potentiometer

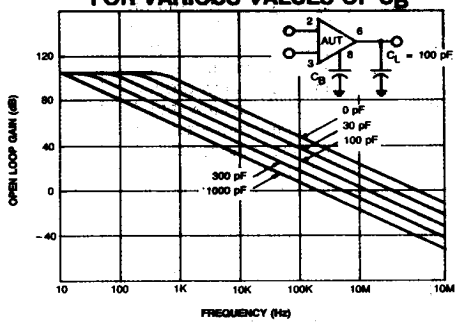
PERFORMANCE PARAMETERS

OFFSET TRIMMING AND BANDWIDTH REDUCTION

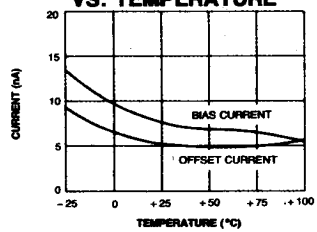


NOTES:
C_B is not required for stability since amplifier is internally compensated. It may be used to reduce bandwidth, however. C_L = 100 pF may be required for stability if external C_B is used.

OPEN LOOP FREQUENCY RESPONSE FOR VARIOUS VALUES OF C_B



INPUT BIAS AND OFFSET CURRENT VS. TEMPERATURE



INPUT NOISE CHARACTERISTICS