40µA, 1.27MHz, Micro-Power Rail-to-Rail I/O Op Amps

Features

- **Upgrade to LMV321/LMV358/LMV324 Family**
- **Stable 1.27MHz GBWP with Low I_Q of Only 40µA Typical per Amplifier**
- **0.9V/µs Slew Rate**
- **Unity Gain Stable for ANY CAPACITIVE Load**
- **Offset Voltage: 3.5mV Maximum**
- **Offset Voltage Temperature Drift: 0.6uV/°C**
- **Input Bias Current: 1pA Typical**
- **THD+Noise: -105dB at 1kHz, -90dB at 10kHz**
- **CMRR/PSRR: 110dB/102dB**
- **Beyond the Rails Input Common-Mode Range**
- **Outputs Swing to within 5mV Typical of each Rail**
- **No Phase Reversal for Overdriven Inputs**
- **No Crossover Distortion**
- **Drives 2kΩ Resistive Loads**
- **Single +2.1V to +6.0V Supply Voltage Range**
- **–40°C to 125°C Operation Range**
- **ESD Rating:**
  Robust 8KV – HBM, 2KV – CDM and 500V – MM
- **Green, Popular Type Package**

Applications

- Active Filters, ASIC Input or Output Amplifier
- Sensor Interface
- Smoke/Gas/Environment Sensors
- Portable Instruments and Mobile Device
- Audio Output
- PCMCIA Cards
- Battery or Solar Powered Systems
- Medical Equipment
- Piezo Electrical Transducer Amplifier

Description

LMV321TP/358TP/324TP are CMOS single, dual, and quad op-amps with low offset, stable high frequency response, low power, low supply voltage, and rail-to-rail inputs and outputs. They incorporate 3PEAK's proprietary and patented design techniques to achieve best in-class performance among all micro-power CMOS amplifiers.

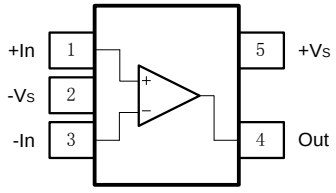
The LMV321TP/358TP/324TP are unity gain stable with Any Capacitive Load with a Constant 1.27MHz gain-bandwidth product, 0.9V/µs slew rate while consuming only 40µA of supply current per amplifier. Analog trim and calibration routine reduces input offset voltage to below 3.5mV. Adaptive biasing and dynamic compensation enables the LMV321TP /358TP/324TP to achieve 'THD+NOISE' for 1kHz and 10kHz $2V_{PP}$ signal at -105dB and -90dB, respectively. Beyond the rails input and rail-to-rail output characteristics allow the full power-supply voltage to be used for signal range.

This combination of features makes the LMV321TP /358TP/324TP superior among rail-to-rail input /output CMOS op amps in its power class. The LMV321TP/358TP/324TP are ideal choices for battery-powered applications because they minimize errors due to power supply voltage variations over the lifetime of the battery and maintain high CMRR even for a rail-to-rail input op-amp.

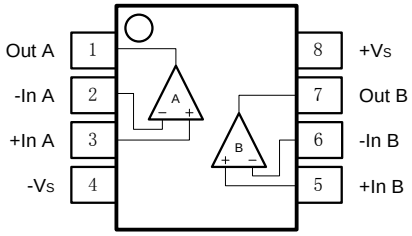
The LMV321TP/358TP/324TP can be used as cost-effective plug-in replacements for many commercially available op amps to reduce power and improve input/output range and performance.

Pin Configuration (Top View)

LMV321TP
5-Pin SOT23/SC70
(-T and -C Suffixes)



LMV358TP
8-Pin SOIC/MSOP
(-S and -V Suffixes)



LMV324TP
14-Pin SOIC/TSSOP
(-S and -T Suffixes)