



**LinearDimensions**  
SEMICONDUCTOR

## The LND-FIL32-PKG

UP TO 48 CHANNEL VOLTAGE  
MULTIPLEXER + BANDPASS FILTER

## The LND-FIL309

### Up to 48 Channel Voltage Multiplexer + Bandpass Filter

What is the LND-FIL309?

The LND-FIL309 is an analog voltage multiplexer with up to 48 input channels, followed by a pre-amp with pins for an external resistor to set gain. Digital logic inputs control selection of the desired mux register. The mux can pass either AC or DC signals through the selected line while simultaneously clamping all unused inputs to USEL. The mux output is directly accessible, as is the output of the pre-amp. The centre frequency of the bandpass filter is software adjustable. The output of the filter is buffered. The LND-FIL309 is particularly useful for using a single analysis channel to selectively examine multiple analog sensor inputs using microcontroller control. Applications include embedded systems, position controllers, and multi-channel filters. For customers with high volumes requiring less than 48 input channels, Linear Dimensions can package the LND-FIL309 in packages with fewer pins.

How does it work?

Reset

To reset the device, set all data pins to zero, hold pin M and pin D low for at least 64 clock cycles, then return M and D to their quiescent (high) states. This clears the digital state information on all internal registers.

Load Internal Registers

To select a mux channel, put the channel number onto the 6 bit wide data register and pull M low and then high while D remains high. To select new channels simply repeat the process with the appropriate mux channel number on the data inputs.

To Adjust Center Frequency

Select MUX address 63, put 1 on the data lines, pull both M and D low. Changing the value on the data lines and pulling M and D low again will set the center frequency. The center frequency will move linearly with the value written. To write new values repeat the process.

How Do I get samples?

The LND-FIL309 is available in 84 pin PGA sample packages. Depending upon the number of channels required, the device is available in most standard surface mount and dip packages including 68-pin PLCC.

### Features

- Digitally select up to 48 input channels
- Clamps all unused channels to external pin
- Select AC or DC voltages
- Standard logic voltage operation
- Adjustable Bandpass Center Frequency

### Applications

- Sensor Arrays
- Security Monitors
- Input Devices
- Embedded Controllers