

# Ladder Filter

24dB Transistor Ladder Filter

## Thank you for purchasing the Ladder filter cartridge!

The Transistor Ladder filter is based on the original Moog™ ladder filter. In addition to the traditional 24dB low-pass mode this filter also includes a band-pass mode.

## OPERATION

1. Filter cartridges can be hot-swapped, simply plug in the cartridge and press the **FILT B** button to select. When the cartridge is selected the filter section LED is lit.
2. To select a filter mode press **[FUNCTION] + [FILT MODE]** while in **PATTERN WRITE MODE**. When mode 1 is selected the **[FILT MODE LED]** is unlit. When mode 2 is selected the LED is lit. Filter mode is a pattern modifier that is saved with each pattern.
  - *Mode 1 is 24dB Low-Pass mode.*
  - *Mode 2 is Band-Pass mode.*

## TECHNICAL NOTES

1. The filter is q-compensated in the same manner as the TB-303 filter. With the traditional Moog™ filter the level drops off significantly as the resonance is increased. The resonance compensation limits this dropoff in signal level by increasing the filter output proportionally to the setting of the resonance control. There is still some dropoff in level but it's reduced versus the traditional Moog™ filter.
2. It is possible for the filter to self oscillate, however the range of self oscillation is limited. The design of the filter results in a limited frequency response in the feedback loop. As a result the resonance peak is reduced with lowering frequency, and the self oscillation is limited to the middle and upper octaves.
3. The filter has been calibrated to allow an extreme amount of resonance. In some settings the filter can become unstable. If this happens and is not desired simply reduce the resonance control.

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