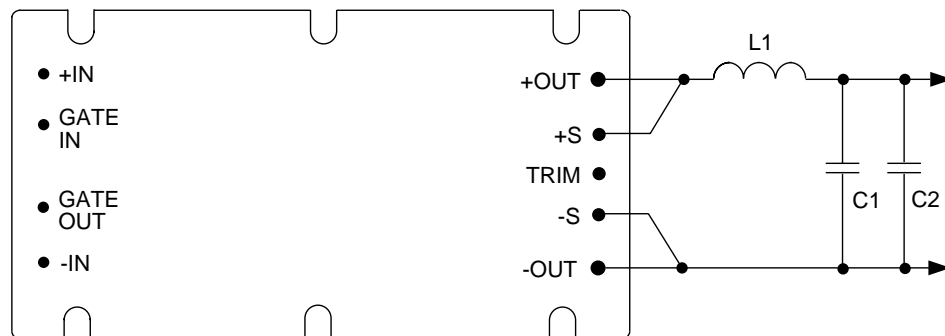


## Optional Filters for Attenuation of Output Ripple

### Overview

The LC filter design below is a comparatively simple solution for reducing ripple on the outputs of Vicor's 200/J00 Families. These components are small and provide significant peak-to-peak noise attenuation. Since an output filter capacitor is already present in the DC-DC converter, adding an inductor and capacitor to the output creates a pi filter. It is important that the inductor wire be of a size sufficient to carry the load current, including a safety factor, and that the core does not saturate. LC filters are generally needed only where very accurate analog signals are involved, and the system power supply rejection is poor at the ripple frequency. The VI-RAM (Vicor Ripple Attenuator Module) should be used if greater attenuation of output ripple is required.



All standard outputs will function with either remote sense or local sense. Lower ESR is achieved with capacitors in parallel. Ripple value measured @ 20MHz bandwidth limit.

#### Filter Components for VI-260-CV (5V Output)

L1 — Vicor P/N 05298 or Micrometals #T38-26/90, 2T #14 (110 nH)

C1, C2 — Vicor P/N 09799, 270  $\mu$ F/10V solid tantalum

Typical data at high line input (worst case):

With full load, ripple = 11 mV p-p

With 50% load, ripple = 8 mV p-p

#### Filter Components for VI-261-CW (12V Output)

(Also applicable for a 15V output)

L1 — Vicor P/N 05298 or Micrometals #T38-26/90, 2T #14 (110 nH)

C1, C2 — Vicor P/N 09800, 120  $\mu$ F/20V solid tantalum

Typical data at high line input (worst case):

With full load, ripple = 5 mV p-p

With 10% load, ripple = 15 mV p-p

#### Filter Components for VI-263-CW (24V Output)

L1 — Vicor P/N 05298 or Micrometals #T38-26/90, 2T #14 (110 nH)

C1, C2 — 68  $\mu$ F/30V solid tantalum

Typical data at high line input (worst case):

With full load, ripple = 6 mV p-p

With 10% load, ripple = 18 mV p-p