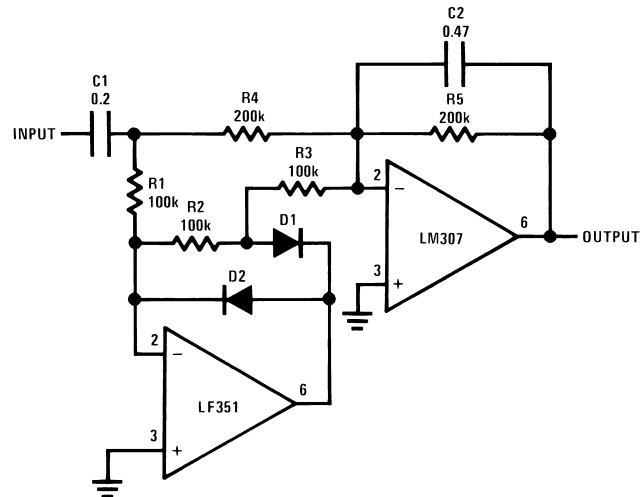


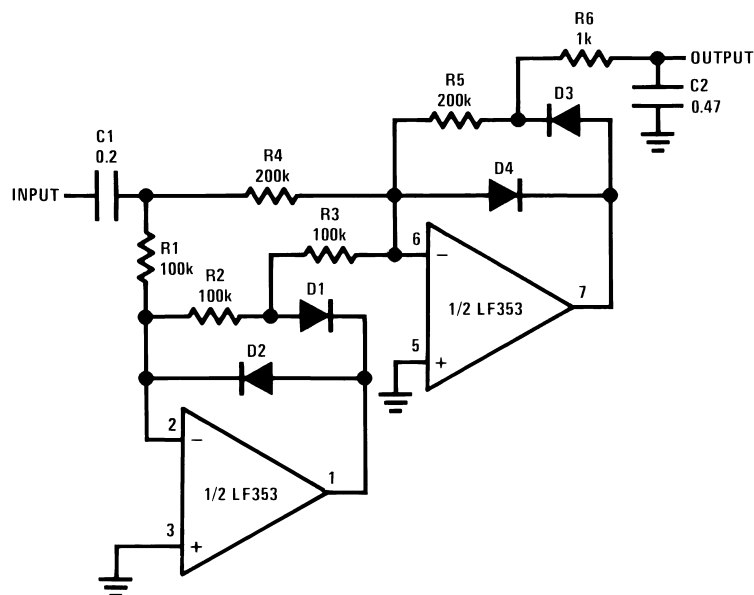
## Application Hints (Continued)



00510411

D1, D2: 1N914 or 1N4148

FIGURE 3. Precision Full-Wave Average Detector



00510412

D1, D2, D3, D4: 1N914 or 1N4148

FIGURE 4. Precision Full-Wave Peak Detector

### CASCADING THE LM3915

To display signals of 60 dB or 90 dB dynamic range, multiple LM3915s can be easily cascaded. Alternatively, it is possible to cascade an LM3915 with LM3914s for a log/linear display or with an LM3916 to get an extended range VU meter.

A simple, low cost approach to cascading two LM3915s is to set the reference voltages of the two chips 30 dB apart as in *Figure 5*. Potentiometer R1 is used to adjust the full scale voltage of LM3915 #1 to 316 mV nominally while the second IC's reference is set at 10V by R4. The drawback of this method is that the threshold of LED #1 is only 14 mV and,

since the LM3915 can have an offset voltage as high as 10 mV, large errors can occur. This technique is not recommended for 60 dB displays requiring good accuracy at the first few display thresholds.

A better approach shown in *Figure 6* is to keep the reference at 10V for both LM3915s and amplify the input signal to the lower LM3915 by 30 dB. Since two 1% resistors can set the amplifier gain within  $\pm 0.2$  dB, a gain trim is unnecessary. However, an op amp offset voltage of 5 mV will shift the first LED threshold as much as 4 dB, so that an offset trim may be required. Note that a single adjustment can null out offset