

ASHLY

ASHLY AUDIO, INC.

# SC50 PEAK LIMITER COMPRESSOR



The Ashly Audio SC-50 Peak Limiter Compressor is used to place a "ceiling" on the peak level of program material. When peaks exceed this ceiling, gain is reduced to keep peaks within specified limits. The amount of reduction, how fast reduction takes place, and the speed at which levels are returned to normal are all precise and independent adjustments. This makes the SC-50 extremely useful for loud-speaker protection, broadcast limiting or compression, tape to disc transfer, special effects, vocal level control and musical instrument sustain.

## FEATURES:

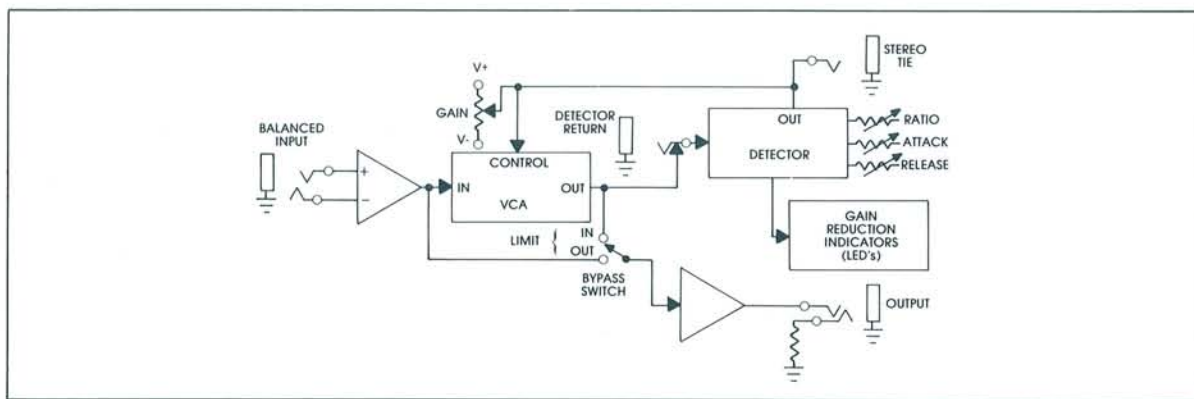
- Extremely low noise and distortion
- Detector patch point for frequency selective limiting
- Stereo tie patch point for accurate stereo or quad tracking when multiple units are used
- Double time constant release action
- Accurate and specific control calibrations
- Inputs and outputs that can be used balanced or unbalanced
- Rugged 16 gauge steel chassis
- In/out bypass switching



The two important components of the SC-50 are the VCA (Voltage Controlled Amplifier) and the Detector. The Ashly SC-50 VCA is an all NPN current ratio multiplier circuit using integrated "supermatch" transistor pairs. It has low noise (-90 dBV), low distortion (.05%), excellent response time and tracking and does not suffer from thermal drift. It is a little complex - there are 5 supporting op-amps involved - but today's low-cost, high-quality op-amps make this feasible. The circuit is consistent in mass production with no trimming or hand selection of transistors necessary.

On the surface it would seem that the VCA is more critical than the detector since audio passes through the VCA and the detector only provides it with a control voltage. However, experience showed us

that both are crucial to the overall sound. The detector must constantly adjust the gain of the audio path in a manner which keeps the level under control while sounding acceptable to the listener. This constantly changing gain is a DYNAMIC action, and conventional audio measurements like noise and distortion checks are static (constant level). This led us to use a purely subjective approach in the design of the detector; we did a lot of listening to determine what sounded good and what didn't. As a result of this research we designed the detector to let the attack and release times speed up as more and more limiting occurs (the compression ratio also increases), and a double release time constant was incorporated to minimize "pumping" and "breathing".



### SPECIFICATIONS:

**CONTROLS**  
 defeat switch  
 gain  $\pm 30\text{dB}$   
 ratio 2:1 -  $\infty$   
 attack time 200 $\mu\text{s}$  - 20 mS.  
 release time 100 mS - 2S  
**INPUT IMPEDANCE** 10K  $\Omega$  balanced bridging  
**OUTPUT IMPEDANCE** 50  $\Omega$  term, with 600  $\Omega$  or more  
**DETECTOR PATCH POINT** allows the connection of an equalizer in the detector loop to produce frequency selective limiting.

**MAX. IN-OUT LEVEL** +20dBm  
**FREQUENCY RESPONSE**  $\pm 5\text{dB}$  20Hz-20kHz  
**DISTORTION** < .05% THD, 0dBV, 20Hz-20kHz, no limiting  
 < .2% +18dBV worst case.  
**HUM AND NOISE** -90dBV, unity gain  
**POWER** 120 VAC, 50-60Hz, 5W  
**SIZE** 19"L x 1 3/4"H x 6"D  
**SHIPPING WEIGHT** 8 lbs.