

**LOW FEEDBACK** - Despite the many advantages in subjective sound quality offered by low overall feedback, 95% of amplifier manufacturers still use very high feedback ratios. This is to linearise an otherwise high gain very non-linear amplifier to give an acceptable static distortion specification.

The *superamp* and *supermos* are different in that they use complex multiple local feedback loops with nested split compensation and very LOW OVERALL feedback. The low feedback ensures great stability with good transient fidelity essential for accurate music reproduction.

**LOW DISTORTION** - To achieve the virtually unmeasurable harmonic distortion levels without high feedback has meant a radical departure from the usual, almost universal high gain single ended driver stage, which is the heart of an amplifier.

In place of the usual two or three transistors are EIGHT transistors in a novel (patent pending) constant current, constant VCE superlinear gain block. This being a development from our own SA1 ultra low distortion oscillator. The harmonic distortion of this stage open loop is almost beyond even our own measurement limits.

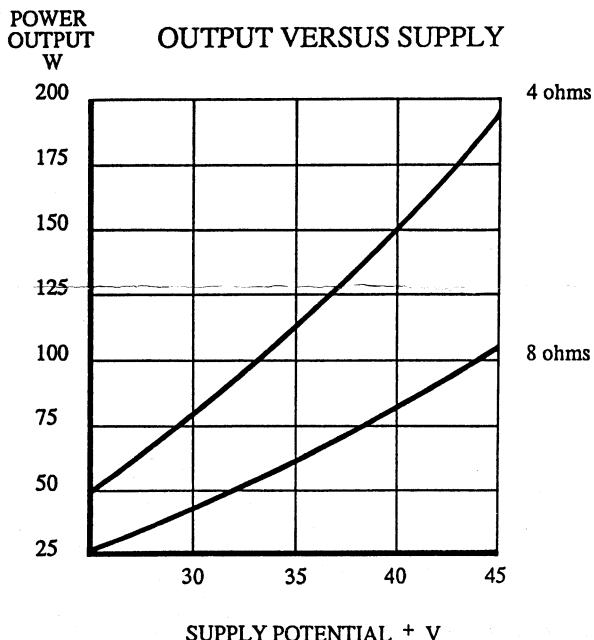
A large amount of negative feedback is unnecessary for linearisation and only a modest amount of feedback is used to control the overall gain.

**HIGH FREQUENCY COMPENSATION** - All conventional high feedback amplifiers require some measure of single pole compensation to remain stable. This compensation has disastrous effects upon slew rate and also HF and transient distortions, despite many manufacturers leading us to believe it is not so.

The *superamp* and *supermos* do not have just single pole compensation but a combination of 'local', compensation and feedback loops.

**NESTED COMPENSATION LOOPS** - Low feedback systems are characterised by their inherent stability with little compensation. Both *superamp* and *supermos* take full advantage of this fact and employ the most up to date complex multiple nested compensation loops together with 'pole zero' (cancelling) compensation giving a superb transient HF response. A deliberate 125KHz (200KHz *supermos*) filter is introduced at the input to limit the input rise time. This combined with an output phase correcting network means the amplifiers cannot, under normal conditions enter internal slew limiting and therefore cannot generate any transient intermodulation distortion (TIM). It is also virtually impossible even under laboratory conditions to cause the *supermos* to enter internal slew limiting.

Transient distortions are not just reduced to insignificance by the high speed design but are now virtually impossible making this possibly the fastest HiFi audio amplifier available today.



#### SPECIFICATION -

Power Output 50 - 150W,  
Load Impedance 4 - 16 OHMS,  
Supply  $\pm 30V$  -  $\pm 45V$ ,  
Damping Factor 800,  
Signal to Noise Ratio 120dB CCIR/ARM,  
Sensitivity 0.775V into 20K,  
Size 120mm x 75mm x 50mm.

**SAGE AUDIO**

Construction House, Whitley Street, Bingley, West Yorkshire, BD16 4JH. Tel: (0274) 568647