Figure 6
Discrete Component "Op-amp" using Matrix Geometry Transistors for Minimal Thermal Noise Generation.

Discrete Component "Operational Amplifier". This form of circuit is very popular within the audio industry for low noise pre-amplification of mV level signals, particularly from low impedance sources such as moving coil transducers. The advantage of a discrete implementation is that it allows the designer to employ relatively large area, high gain input devices. These devices present a low value of base spreading resistance to the input circuit, thereby minimising the amount of thermal noise generated. (Figure 6).