



Figure 1 Switched-mode-power-supply ICs, which traditionally have required separate passive components, have decreased in size as their frequency has increased. At 500 kHz, the switching magnetics are almost twice the size of the silicon, and, at 6 MHz, the silicon is almost the same size as the magnetics. The decrease in capacitor space is even more dramatic. However, the ICs' buck-converter topology means that switching losses increase with frequency if the quality of the switching device remains the same (courtesy Analog Devices).