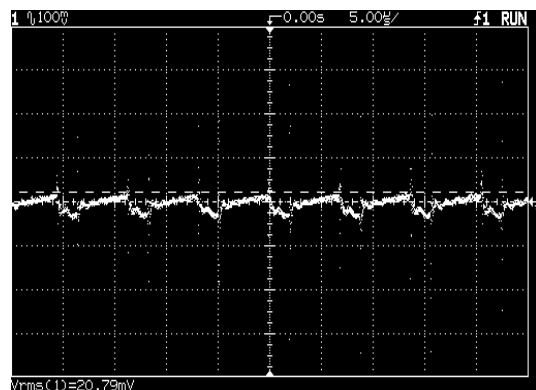
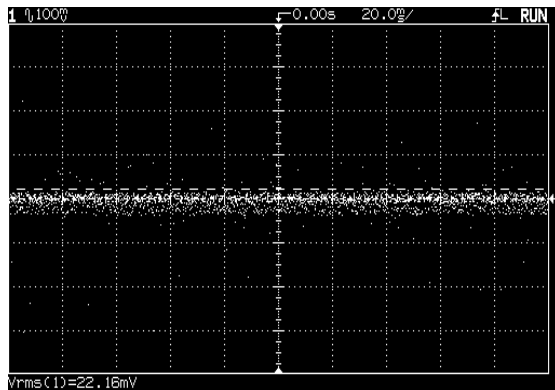


2.7 Noise and Ripple

This is about the most difficult thing to measure with a switching power supply. This is because there are always short range circulating magnetic fields near such a supply, ready to inject noise into the high impedance CRO leads of the unwary.

To reproduce the results below, the earth lead and probe tip were removed, and small wire loops screwed into the output terminals A 12 amp load was applied. The left hand one is with the CRO synchronised to the mains input. The right one is locked to the switching frequency.

The ripple and noise is <25 mV rms in a bandwidth of 150 Mhz.



2.8 Over Voltage Protection

The supply uses a completely independent voltage reference to monitor the output voltage. Should this exceed 16 volts, the converter oscillator is shut down via an independent optical isolator. This makes the supply "hiccup". If the fault is an output-induced transient that clears itself, the supply starts up automatically.

2.9 Isolation to Ground

The supply is DC isolated from the case, but RF bypassed with 1UF ceramic capacitors to ground on both rails. These have a 50 V DC rating.

The input voltage is 240 V AC at 50-Hertz nominal. No auto ranging occurs, and the output degrades gracefully below the minimum A.C. input voltage. The maximum voltage is an absolute, determined by the main electrolytics voltage rating.

Voltage range (for full specification)	180 V A.C. min (175 typical)	280 V A.C. max
Input Frequency range	D.C. to 400 Hertz.	

3. Temperature Rating

Only well specified parts are used from quality suppliers. The supply is designed with 105 °C rated capacitors from Nippon Chemi-Con. Only 1% metal oxide resistors are used. All semiconductors are sourced from Japan, Europe or America.

The fan assist operates on a nominal case temperature of 45 °C, so that at a 20 °C ambient, and 11 amps load, the fan cycles about 25 % of the time. If the ambient exceeds 40 °C, the fan runs all the time. The worst-case rise is around 25°C, so the electrolytics are well within rating, up to an ambient of 60°C.

