Quasi-Resonant IC FA5530/31/32

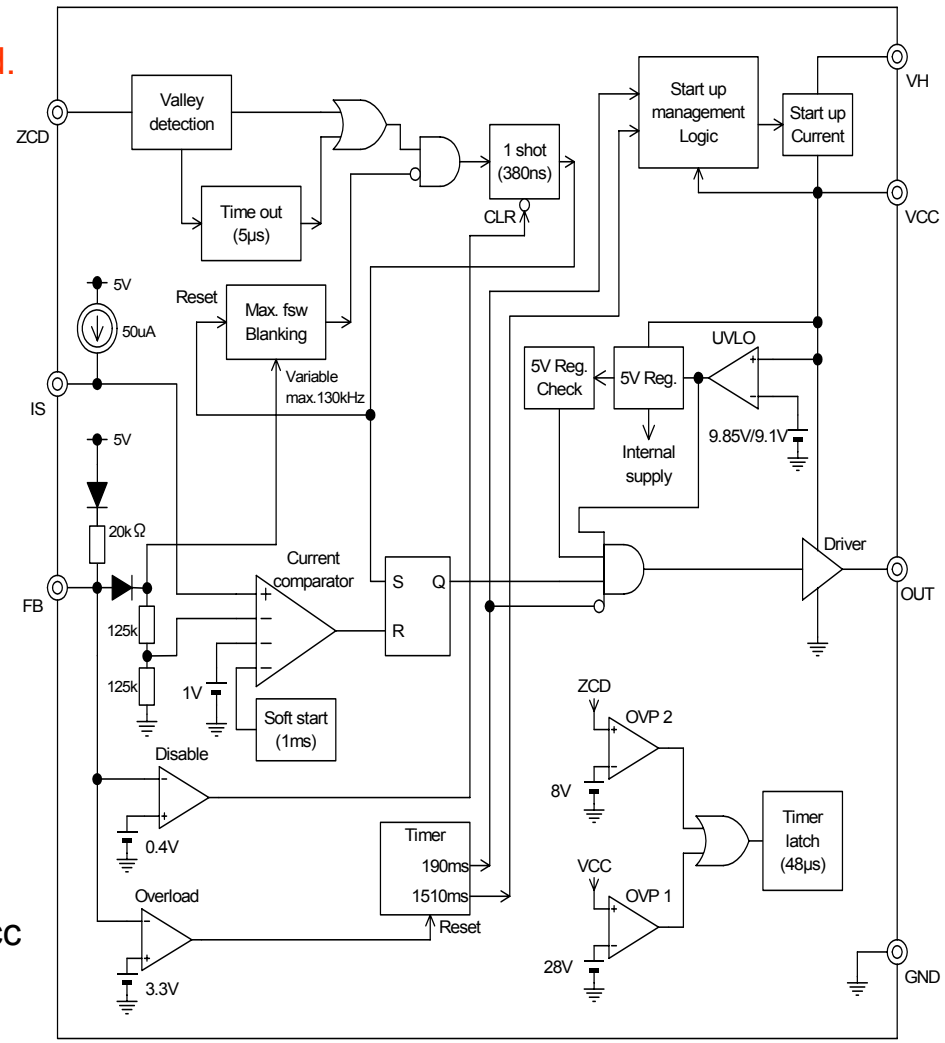
e-Front runners

Features

- Internal start-up circuit with 500V rating and low frequency operation achieves 140mW input at no load.
- Small Output Capacitance : Linearly reduced frequency for lighter load causes small ripple voltage.
- Suitable for Low Noise and High Efficiency about 90%
- Line-up of 3 types for maximum frequency and OLP
  5530: 65kHz max.,16Vmax.-VCC,Auto-restart OLP
  5531:130kHz max.,28Vmax.-VCC,Auto-restart OLP
  5532:130kHz max.,28Vmax.-VCC,Timer-Latched OLP
- High ability of driving Power MOSFET (High / Low side : 17 ohm / 3.5 ohm) : available to 200W output
- Vcc rating 28V allows no series regulator for auxiliary winding to clamp Vcc voltage for FA5531/32.
- 1ms Fixed Soft Start time
- Timer Latched Over-Voltage Protection of 16V/28V Vcc
- 8 pins package (DIP/SO)

Usage : Notebook PC, LCD Monitor, LCD-TV etc.

FA5531 Block Diagram



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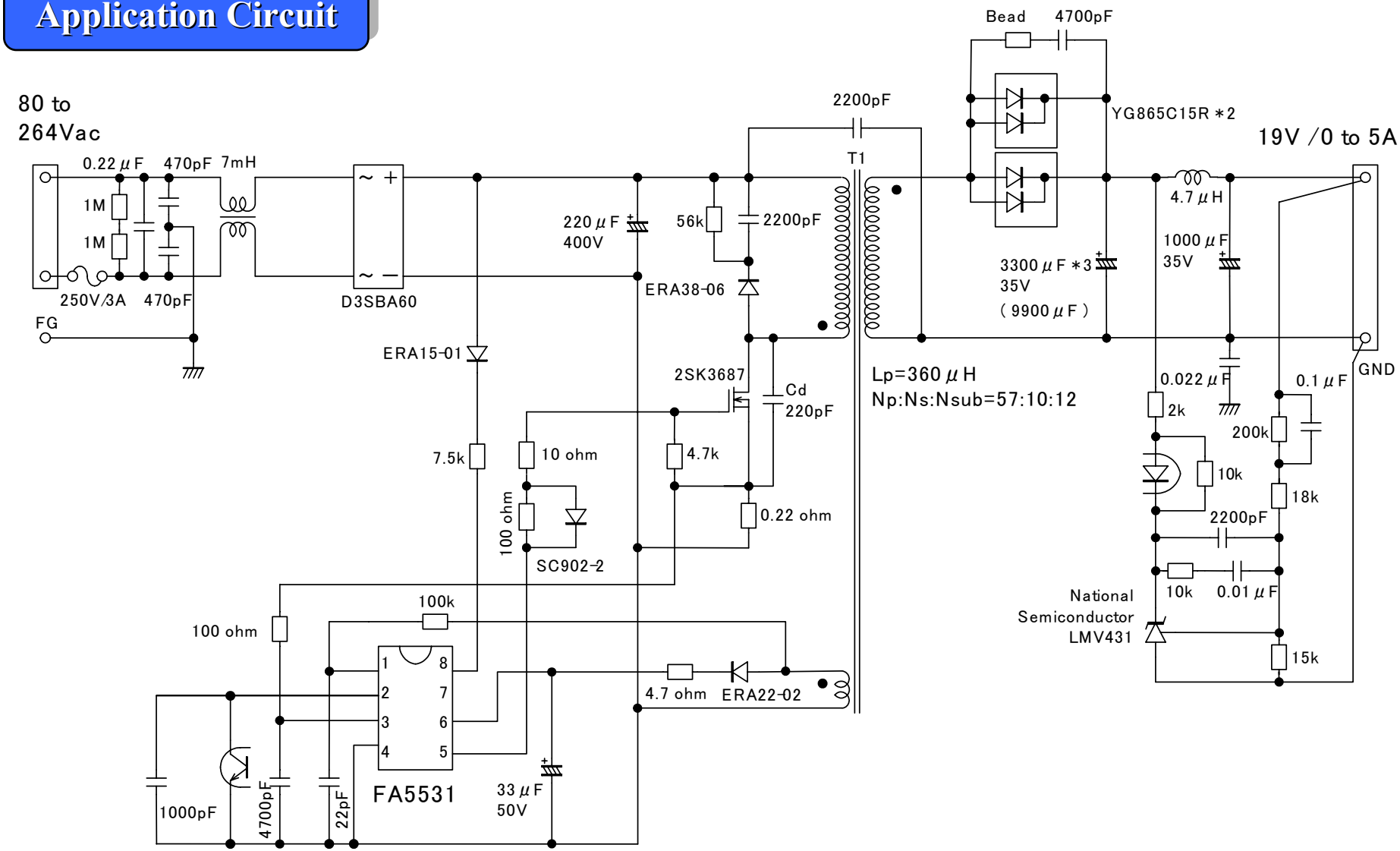
Application Circuit



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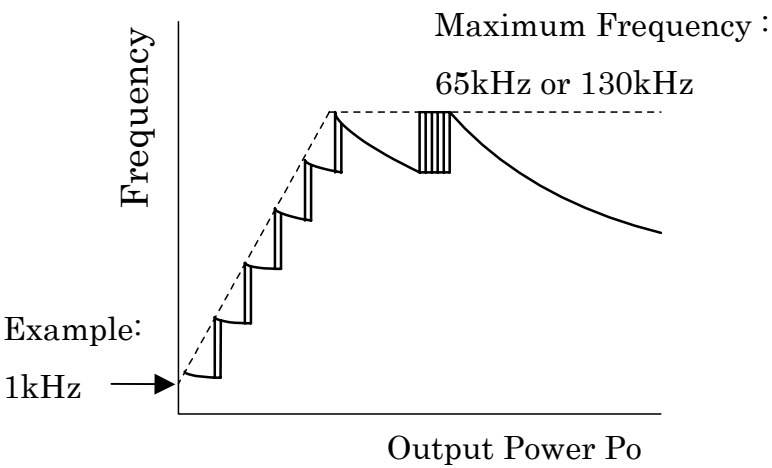
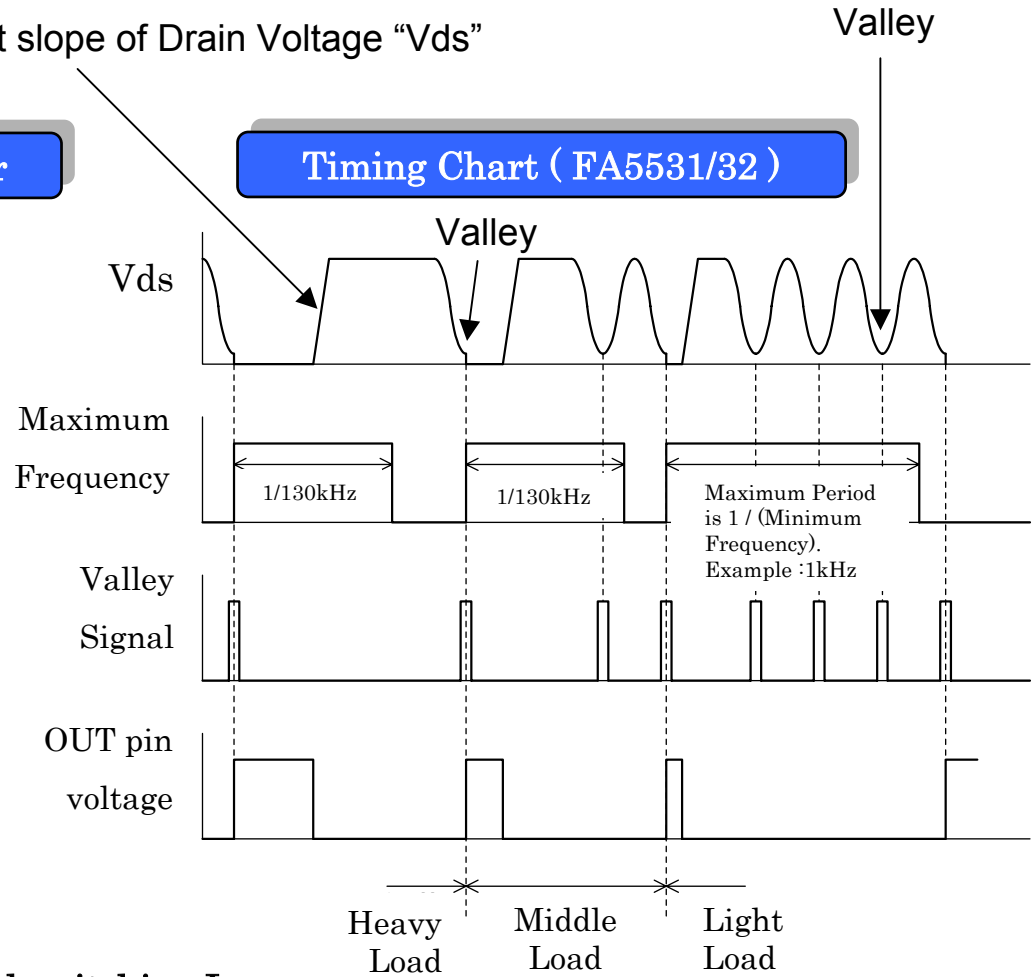
Switching Frequency vs. Output Power

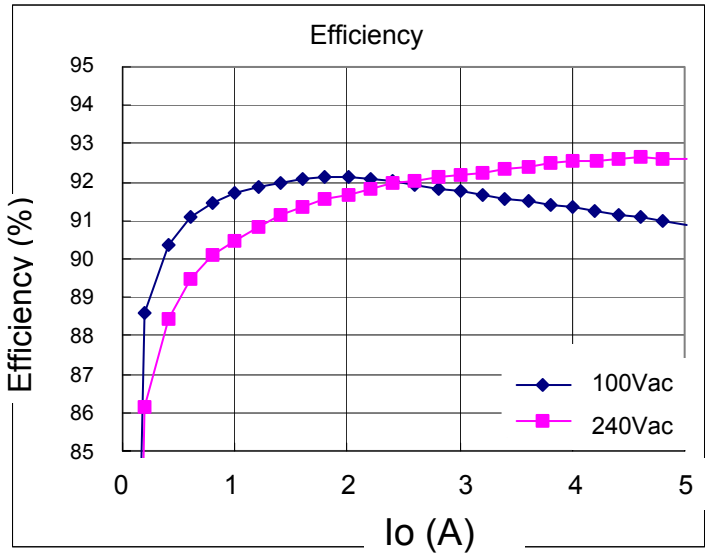
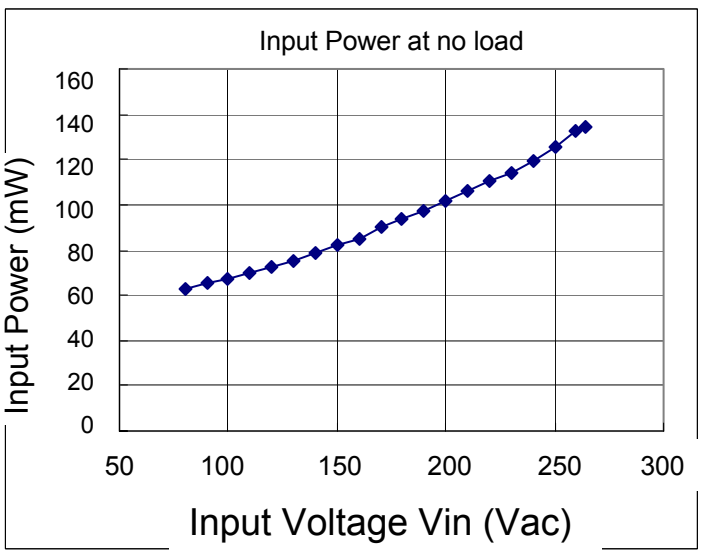
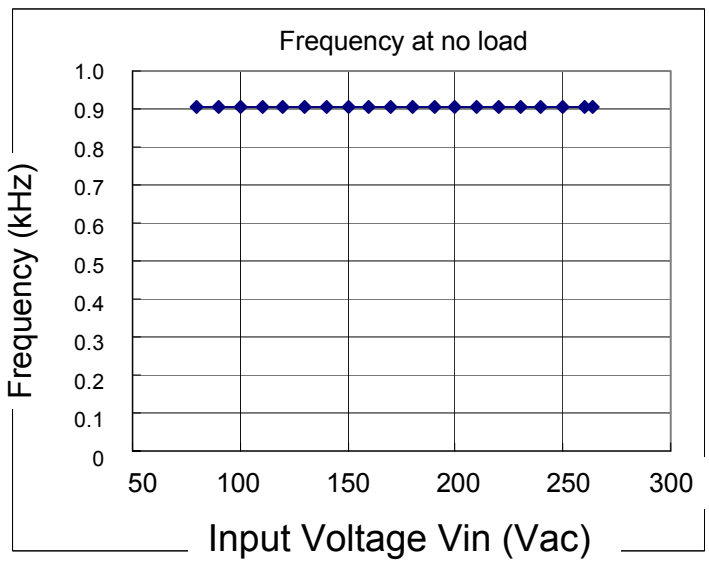


Timing Chart (FA5531/32)



- **Low frequency switching such as 1kHz at light load reduces standby power.**
- **Maximum frequency limits EMI noise and switching Loss.**
- Switching at Valley of Vds : **Turn-ON Loss and Noise are very small.**
- Low dV/dt of Vds at Turn-OFF by a capacitor connected between Drain and Source of Power MOSFET : **Turn-OFF Loss and Noise are also very small.**

Demo Board Data

- Demo Board Specification
  Input Range : 80Vac to 264Vac
  Output Rating : 95W (19V / 5A)

- Demo Board Data
  60mW to 140mW at no load, 0.9kHz
  Efficiency : 86 to 91% (20W to 95W)
  → satisfies the standard of energy star