

Reference Design RD-FAN6756MR_T03U065A

Flyback Power- 65W/19V Design

Featured Device	Application	Input Voltage Range	Output Voltage/ Rated Current	Rated Output Power	Topology
FAN6756	SMPS Notebook Adapter	90~264V _{AC}	19V/3.42A	65W	Flyback

Key Features

- Low No-Load Power Consumption: Less than 30mW at 230V_{AC} (EMI Filter Loss Included)
- AX-CAP™ Technology to Eliminates X Capacitor Discharge Resistor Loss
- Linearly Decreases Switching Frequency to 23KHz
- Burst Mode Operation at Light-Load Condition
- Feedback Impedance Switching in Standby Mode for “Deep” Burst Mode Operation
- Low Operating Current:450μA in Standby Mode
- 500V High-Voltage JFET Startup Circuit to Eliminate Startup Resistor Loss

1. Schematic

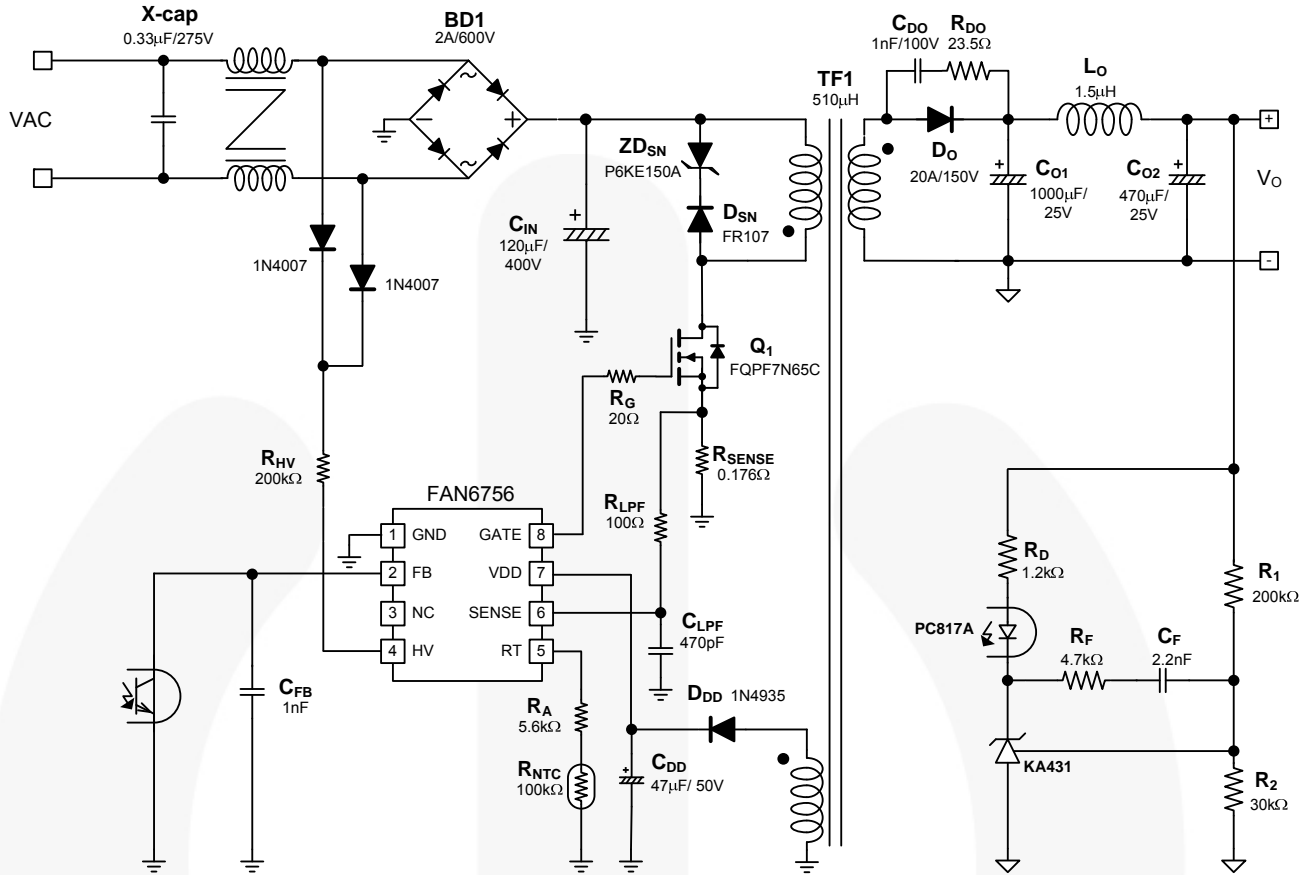


Figure 1. Flyback Power 65W Application Schematic

2. Transformer

2.1. Transformer Schematic Diagram

- Core: Ferrite Core RM-10
- Bobbin: RM-10

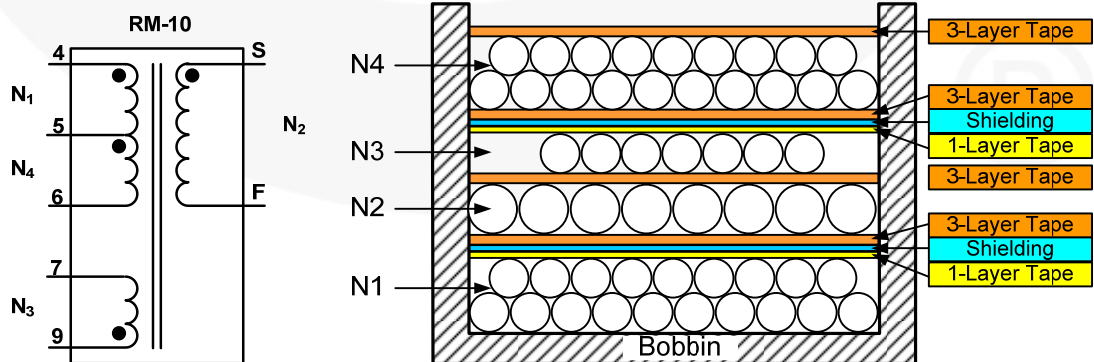


Figure 2. Main Transformer

2.2. Winding Specification

	Pin (Start → Finish)	Wire	Turns	Winding Method	Remark
N1	4 → 5	0.5φ×1	19	Solenoid Winding	Enameled Copper Wire
Insulation: Polyester Tape, t = 0.025mm, 1-Layer					
Shielding: Adhesive Tape of Copper Foil, t = 0.025×7mm, 1.2 Layer Open Loop, Connected to Pin 4.					
Insulation: Polyester Tape t = 0.025mm, 3-Layer					
N2	S → F	0.9φ×1	8	Solenoid Winding	Triple Insulated Wire
Insulation: Polyester Tape, t = 0.025mm, 3-Layer					
N3	9 → 7	0.4φ×1	7	Solenoid Winding	Enameled Copper Wire
Insulation: Polyester Tape, t = 0.025mm, 1-Layer					
Shielding: Adhesive Tape of Copper Foil, t = 0.025×7mm, 1.2 Layer Open Loop, Connected to Pin 4.					
Insulation: Polyester Tape t = 0.025mm, 3-Layer					
N4	5 → 6	0.5φ×1	19	Solenoid Winding	Enameled Copper Wire
Insulation: Polyester Tape t = 0.025mm, 3-Layer					

2.3. Electrical Characteristics

Main Transformer	Pin	Specification	Remark
Primary-Side Inductance	4 – 6	510μH ±5%	1kHz, 1V
Primary-Side Effective Leakage Inductance	4 – 6	20μH Maximum	Short All Other Pins

3. Typical Performance

3.1. Power Consumption

Output Power		Actual Output Power	Input Power	Specification
No Load	230V _{AC}	0W	0.024W	Input Power < 0.03W
0.25W	230V _{AC}	0.232W	0.339W	Input Power < 0.5W
0.5W	230V _{AC}	0.495W	0.643W	Input Power < 1W

3.2. Efficiency

Output Power	16.25W	32.5W	48.75W	65W	Avg.
115V/ 60Hz	88.48%	88.58%	87.45%	86.22%	87.68%
230V/ 60Hz	88.00%	87.89%	87.92%	87.47%	87.82%

Related Resources

[FAN6756 — mWSaver™ PWM Controller](#)

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