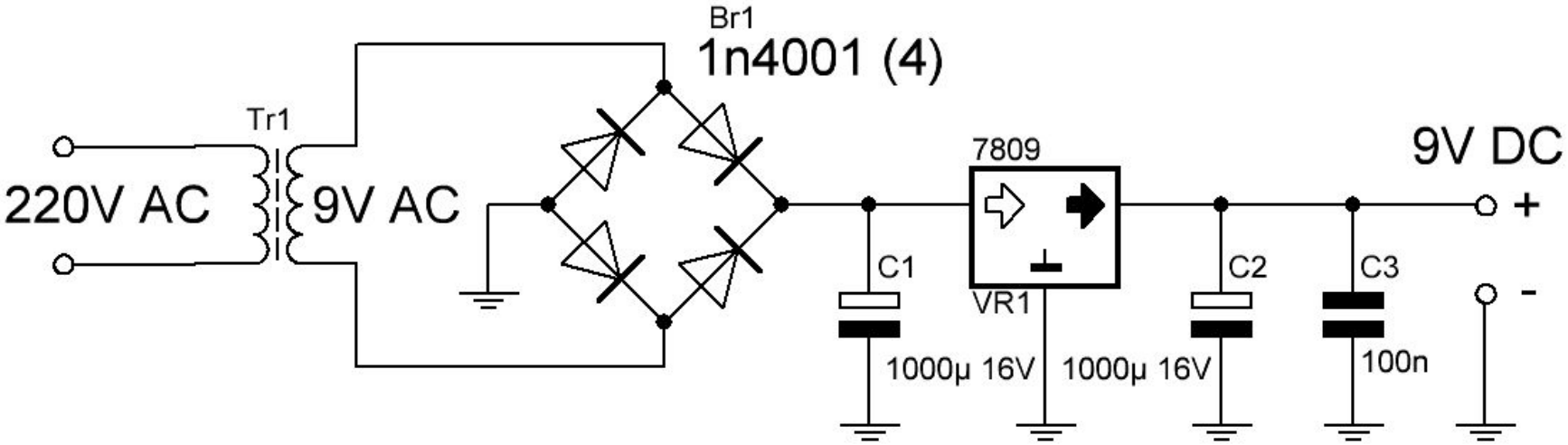
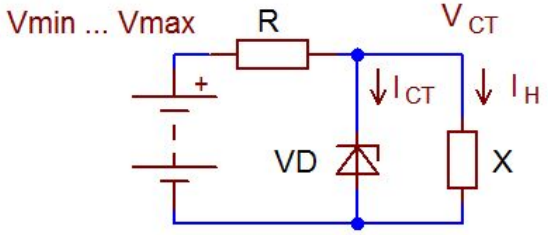
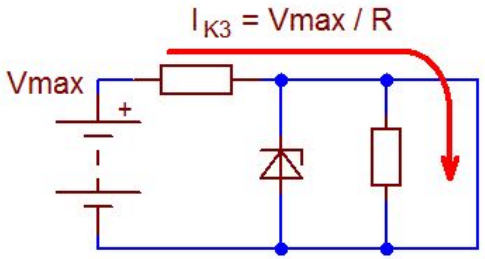
Блоки питания

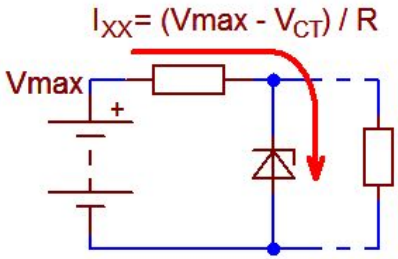


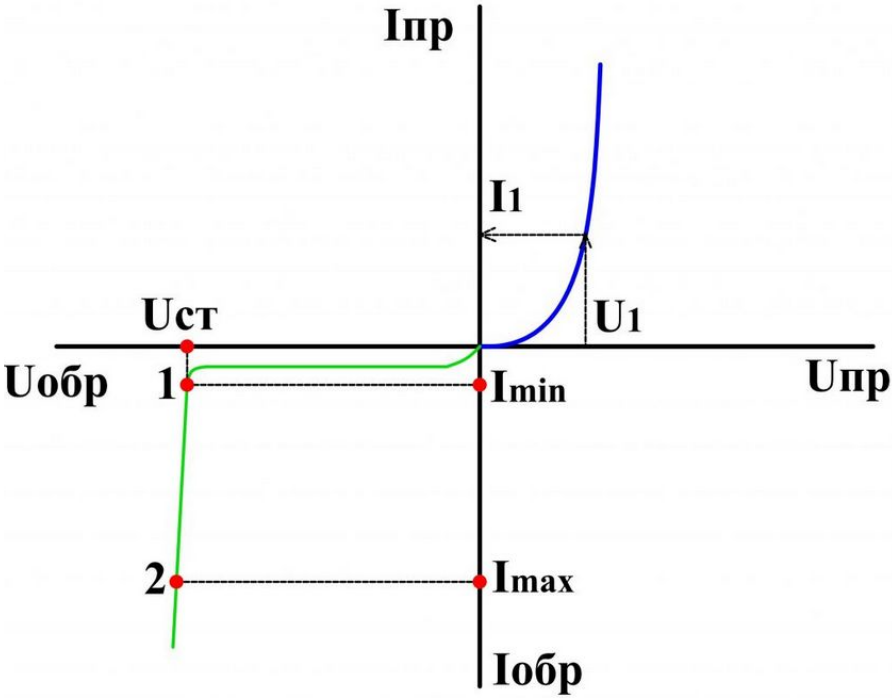
Линейный стабилизатор

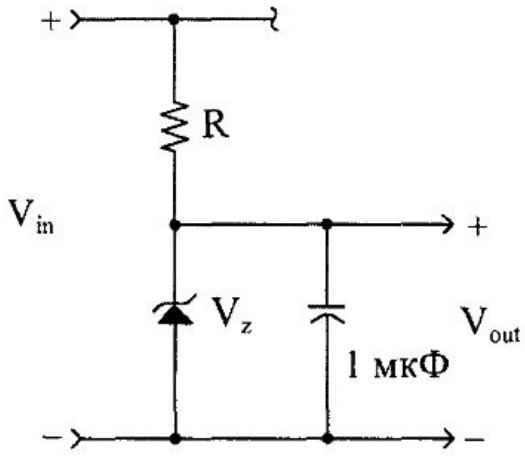
Параллельный стабилизатор
СТАБИЛИТРОН











$$V_{in(min)} > V_{out} + 3V$$

$$V_Z = V_{out}$$

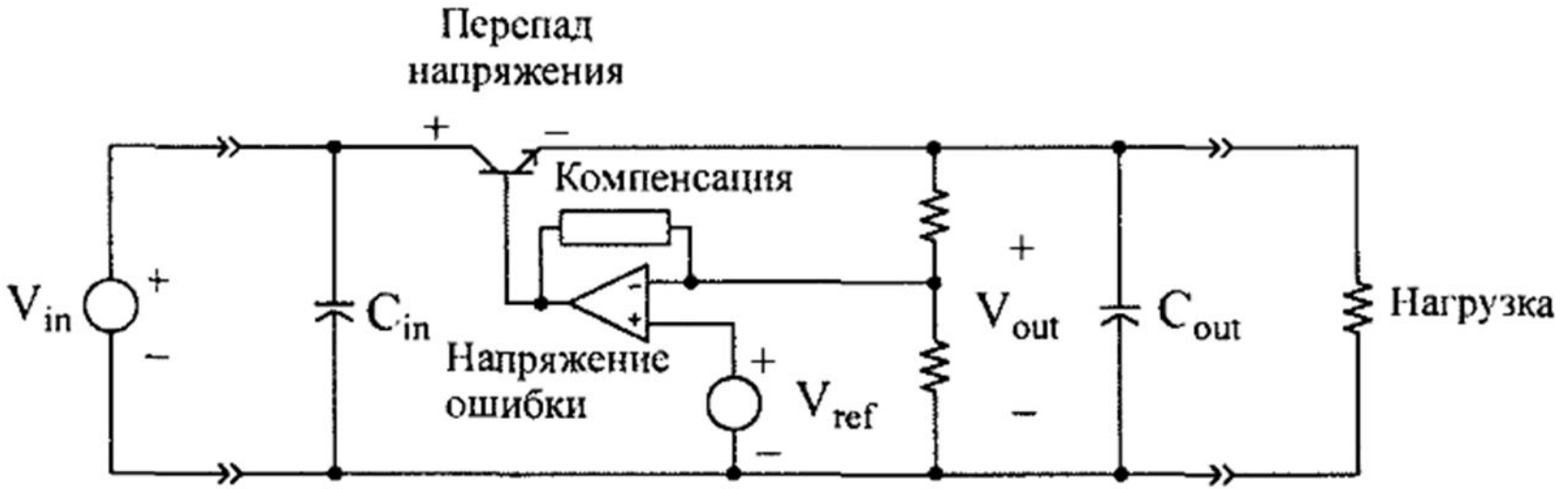
$$R \approx \frac{V_{in(min)}}{1.1\, I_{out(max)}}$$

$$P_{D(R)} = (V_{in(max)} - V_{out})^2 R$$

$$P_{D(z)} \approx 1.1\, V_Z\, I_{out(max)}$$

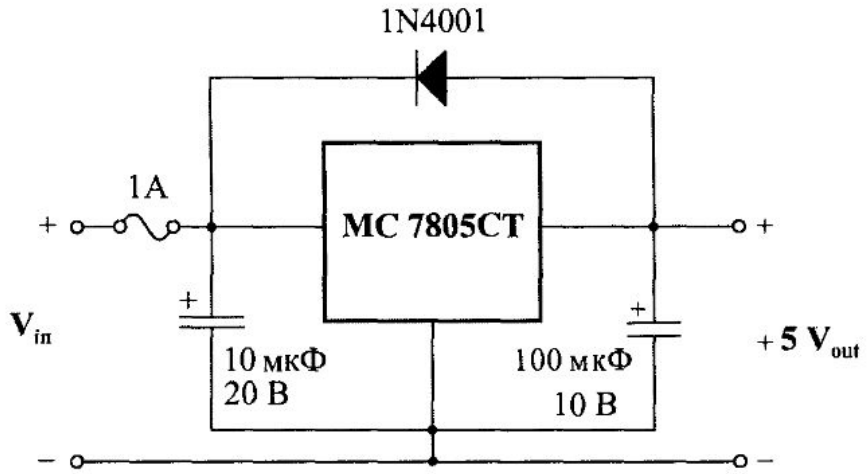
Линейный стабилизатор

Последовательный стабилизатор

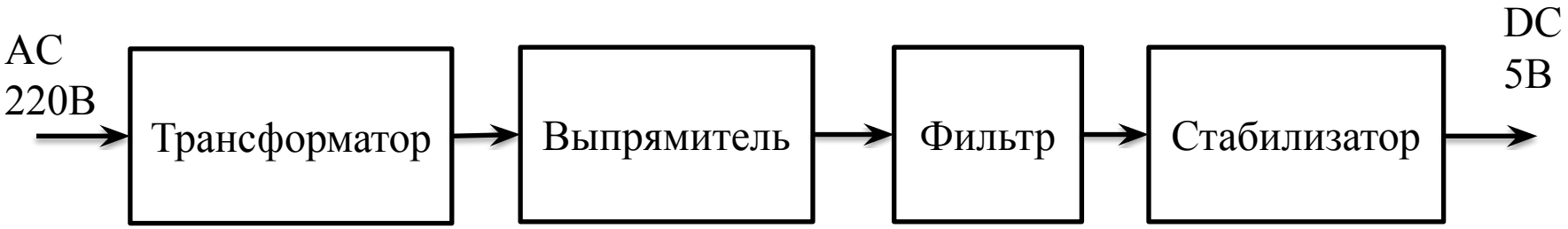


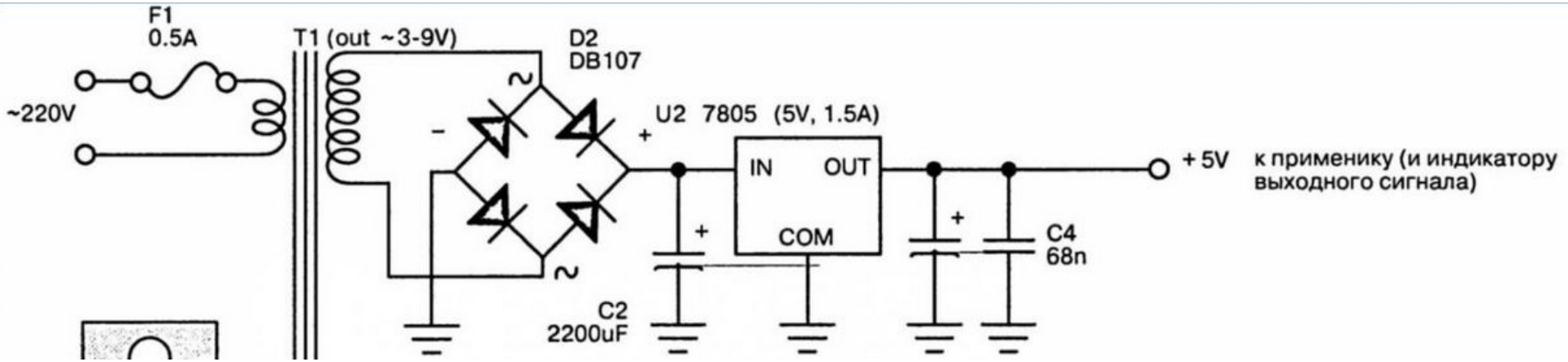
$$P_{HR} = (V_{in(max)} - V_{out}) * I_{load(rated)}$$

Потеря мощности



Блок питания на 7805

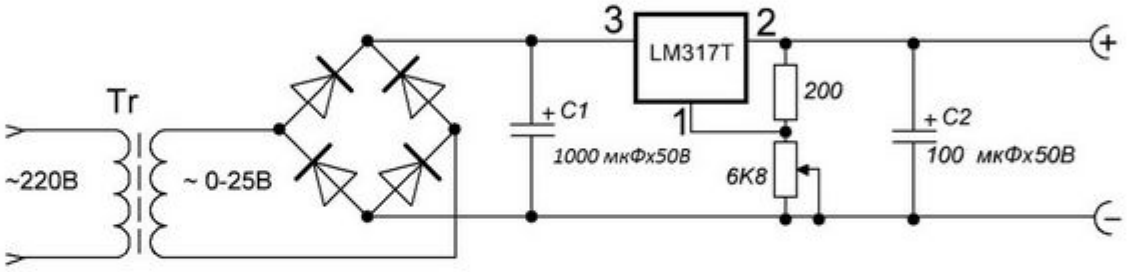


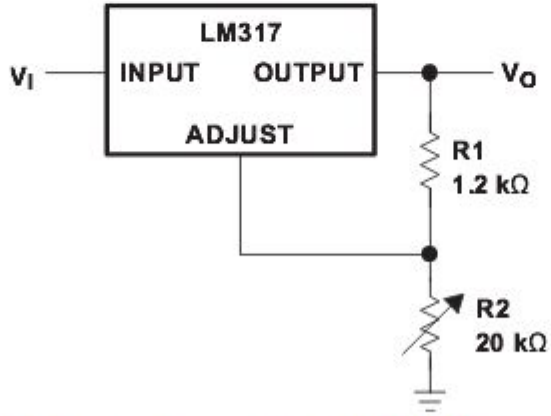


Блок питания на LM317

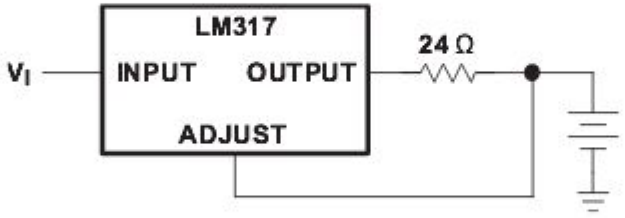
Feature summary

- Output voltage range: 1.2 to 37V
- Output current in excess of 1.5A
- 0.1% Line and load regulation
- Floating operation for high voltages
- Complete series of protections: current limiting, thermal shutdown and SOA control



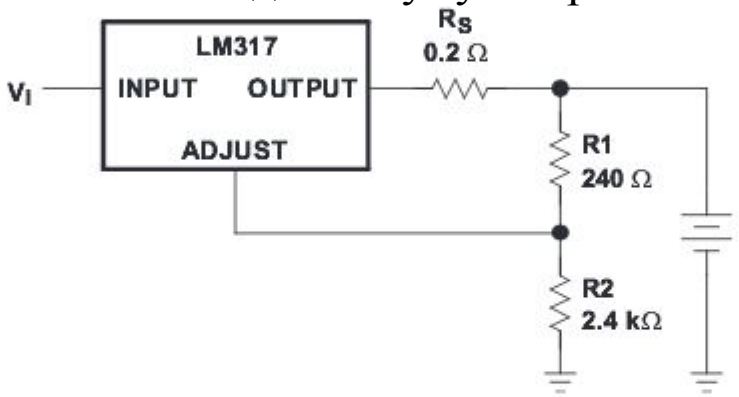


$$V_O = V_{REF}\,(1 + R_2/R_1) + I_{ADJ}\,R_2$$



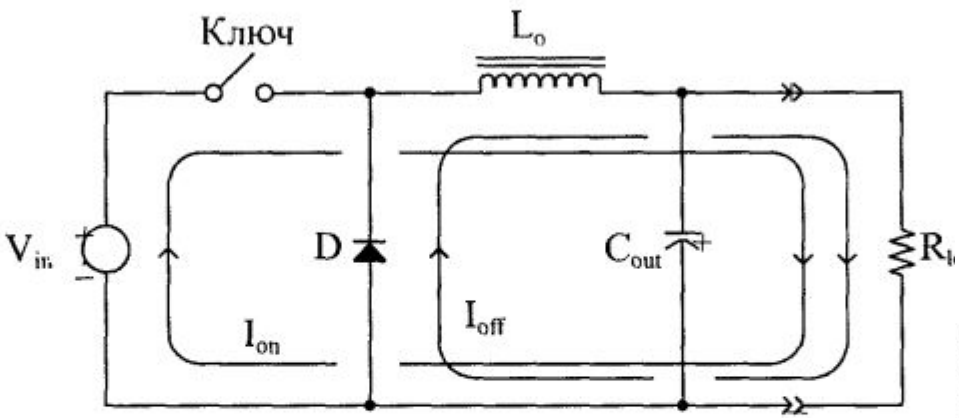
$I_{CHG} = 1.25V \div 24\Omega.\ V_I$

Зарядное устройство для аккумулятора

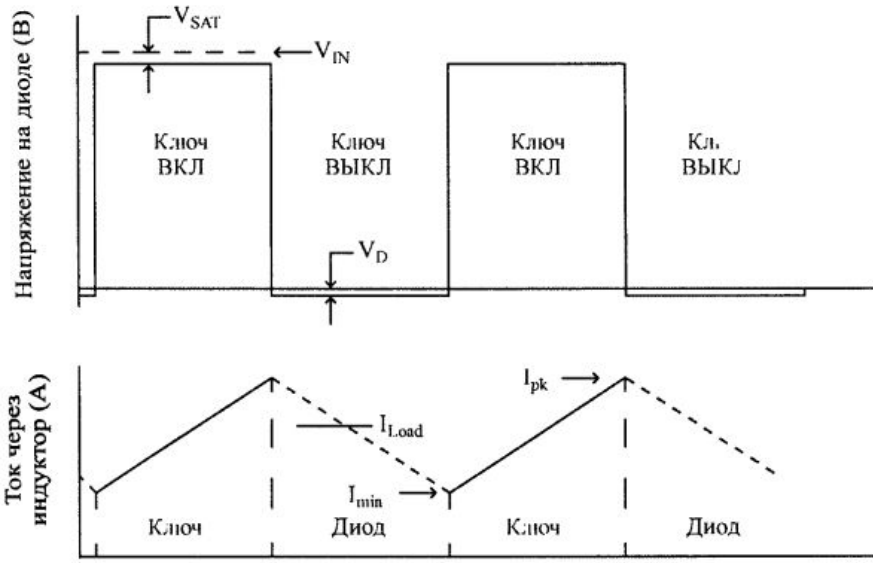


Импульсный блок питания

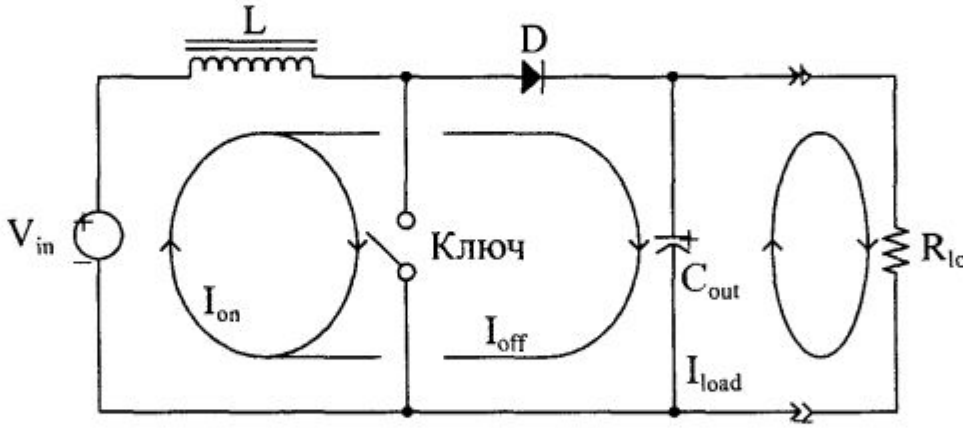
Понижающий преобразователь

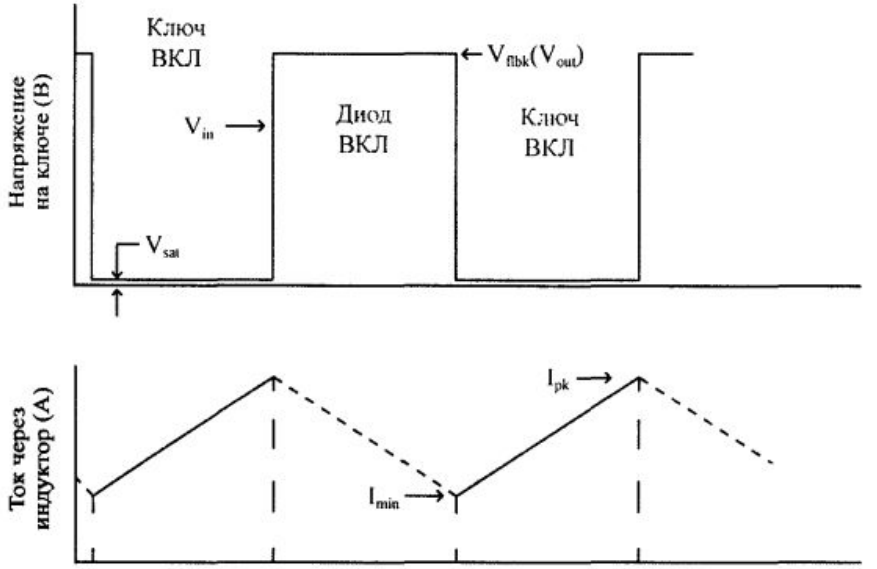


*Vout=Vin*Ton/Tall*



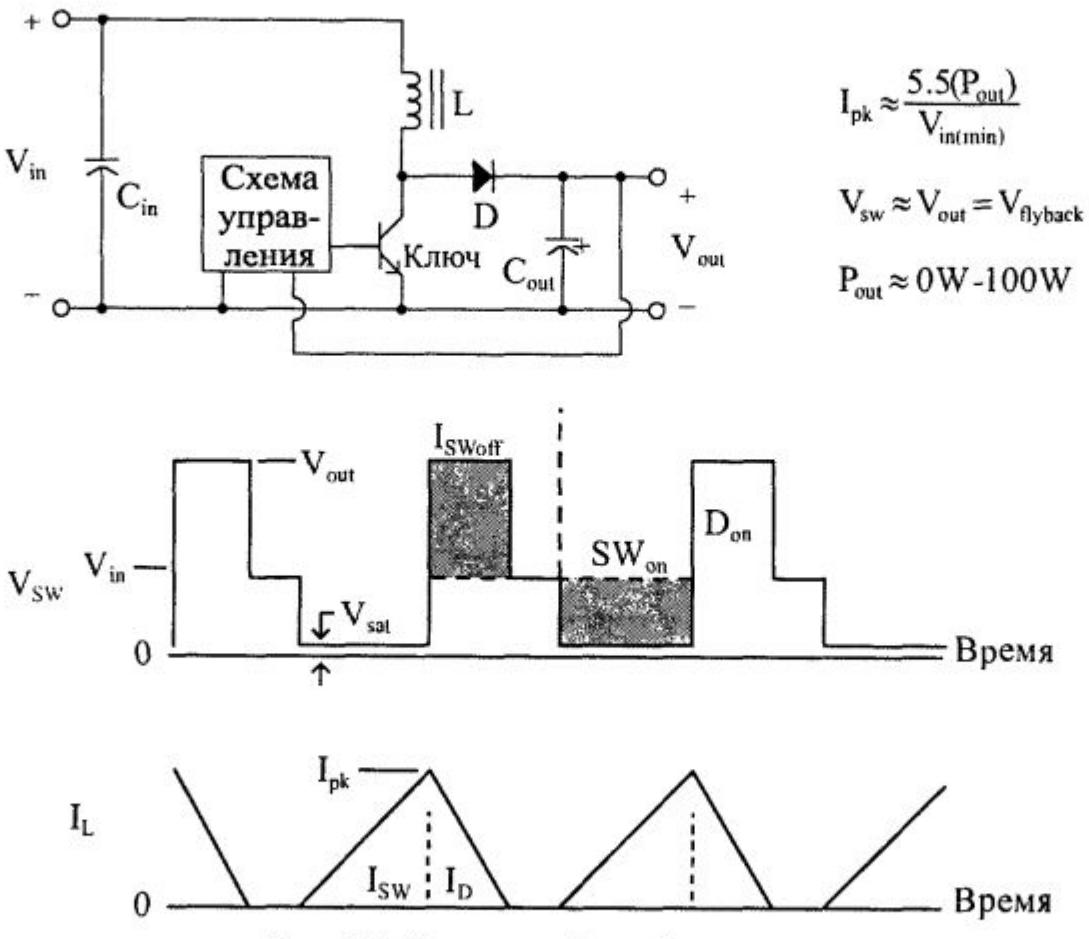
Повышающий преобразователь





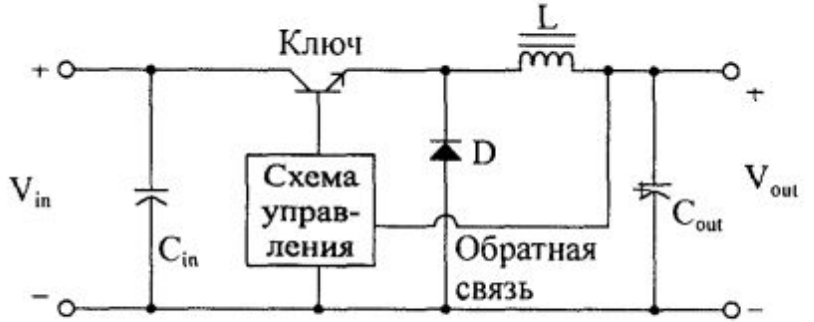
Импульсный блок питания

Повышающий преобразователь



Импульсный блок питания

Понижающий преобразователь



$$I_{pk} \approx \frac{1.4(P_{out})}{V_{in(min)}}$$

$$V_{sw} \approx V_{in}$$

$$P_{out} \approx 0W\text{-}1kW$$