

Primary Side Regulated Switching Mode Power Supply Controller

The AP3781 is a high-performance AC/DC power supply controller for battery charger and adapter applications. The controller regulates the output voltage and current in the primary side by Pulse Frequency Modulation in Discontinuous Conduction Mode (DCM).

The AP3781 operates in Pulse Frequency Modulation (PFM) mode and peak current Amplitude Modulation (AM) mode to form a fine tune frequency curve within the whole power range. AP3781 can achieve high efficiency and improve audible noise.

The AP3781 provides comprehensive protections without additional circuitry. It contains VCC over voltage protection, output over voltage protection, output under voltage protection, output short circuit protection, cycle-by-cycle current limit, open loop protection, external OTP and internal OTP.

The AP3781 is packaged in SO-8.



The Diodes' Advantage

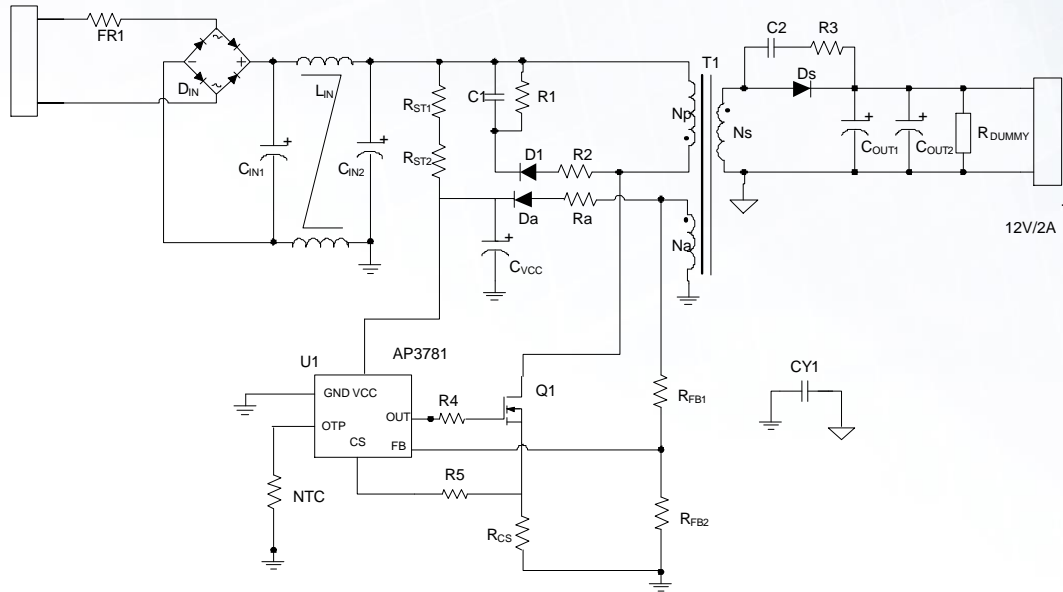
The AP3781 supports wide operating voltage for power tools and small appliances.

- **Accurate Primary Side Regulation**
Eliminates opto-coupler and 431/CC-CV components, reducing overall BOM size and cost.
- **Low Standby Power (<75mW)**
Energy saving advantage.
- **Ultra Low Under Voltage Protection**
Supports wide operating voltage for power tool motor drive.
- **Multiple Segment AM/PFM Control Mode**
Improves audible noise and efficiency.
- **External adjustable Cable Compensation**
Compensate voltage drop on the cable.

Applications

- Power tools, routers, network adaptors, smart speakers.

Typical Application Schematic



Product Portfolio

Part Number	BJT/MOSFET Integrated	V _{cc} Max (V)	Startup Current (μA)	Operating Current (μA)	UVLO Threshold on/off (V)	Power Rating (W)	Standby Power (mW)	Cable Compensation	Package Outlines
AP3781	N.A.	37	1	510	16/6.8	45	75	ADJ	SO-8

To find out more information: <https://www.diodes.com/part/AP3781>

Ordering Information

Package	Temperature Range	Cable Compensation Voltage	Part Number	Marking ID	Packing
SO-8	-40 to +150°C	ADJ	AP3781S-13	3781	4000/Tape & Reel