MP6910A

Fast Turn-off Intelligent Rectifier

The Future of Analog IC Technology

PRELIMINARY SPECIFICATIONS SUBJECT TO CHANGE

DESCRIPTION

The MP6910A is a fast turn-off intelligent rectifier for Flyback converters that combines a 100V power switch that replaces diode rectifiers for high efficiency. The chip regulates the forward voltage drop of the internal power switch to about 70mV and turns it off before the voltage goes negative.

FEATURES

- Integrated 12mΩ 100V Power Switch
- Compatible with Energy Star, 1W Standby Requirements
- V_{DD} Range From 8V to 24V
- 70mV V_{DS} Regulation Function (1)
- Max 250kHz Switching Frequency
- Light Load Mode Function (1) with <300uA Quiescent Current
- Supports High-side and Low-side Rectification
- Power Savings of Up to 1.5W in a Typical Notebook Adapter

APPLICATIONS

- Industrial Power Systems
- Distributed Power Systems
- Battery Powered Systems
- Flyback Converters

All MPS parts are lead-free, halogen free, and adhere to the RoHS directive. For MPS green status, please visit MPS website under Quality Assurance.

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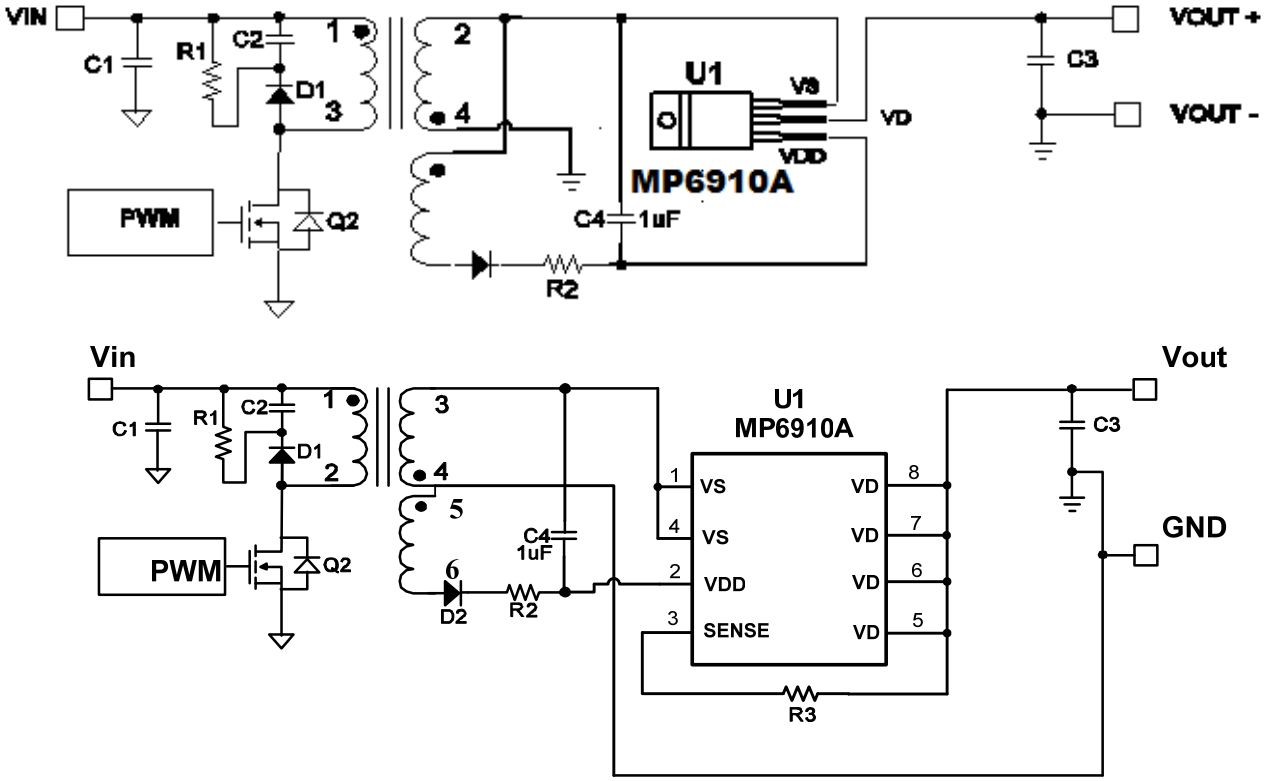
Notes:

1) Related issued patent: US Patent US8, 067,973; US8,400,790. CN Patent ZL201010504140.4; ZL200910059751.X. Other patents pending

TYPICAL APPLICATION



ORDERING INFORMATION

Part Number	Package	Top Marking
MP6910AGS*	SOIC8	*See Below*
MP6910AGZ**	TO220-3	*See Below*

* For Tape & Reel, add suffix –Z (e.g. MP6910AGS–Z).

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TOP MARKING (MP6910AGS)

MP6910A
LLLLLLLL
MPSYWW

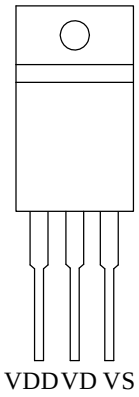
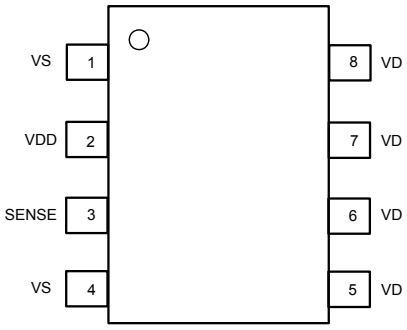
MP6910A: part number;
LLLLLLLL: lot number;
MPS: MPS prefix:
Y: year code;
WW: week code:

TOP MARKING (MP6910AGZ)

MPSYYWW
MP6910A
LLLLLLLLL

MPS: MPS prefix:
YY: year code;
WW: week code:
MP6910A: part number;
LLLLLLLLL: lot number;

PACKAGE REFERENCE

TOP VIEW	TOP VIEW
	
TO220-3	**SOIC-8**

ABSOLUTE MAXIMUM RATINGS (2)

V_{DD} to V_S .....-0.3V to +27V
V_D to V_S .....-0.7V to +100V
SENSE to V_S.....-0.7V to +180V
Maximum Operating Frequency..... 250kHz
Continuous Drain Current (T_C=25°C) 25A
Continuous Drain Current (T_C=100°C) 15A
Maximum Power Dissipation (3) 2.7W
Junction Temperature .....150°C
Lead Temperature (Solder).....260°C
Storage Temperature ..... -55°C to +150°C

Recommended Operation Conditions (4)

V_{DD} to V_S .....8V to 24V
Operating Junction Temp. (T_J). -40°C to +125°C

Thermal Resistance (5)	θ_{JA}	θ_{JC}	
TO220-3	45	10	°C/W
SOIC8	45	10	°C/W

Notes:

2) Exceeding these ratings may damage the device.
3) T_A=+25℃. The maximum allowable power dissipation is a function of the maximum junction temperature T_J (MAX), the junction-to-ambient thermal resistance θ_{JA}, and the ambient temperature T_A. The maximum allowable continuous power dissipation at any ambient temperature is calculated by P_D (MAX) = (T_J (MAX)-T_A)/θ_{JA}. Exceeding the maximum allowable power dissipation will cause excessive die temperature, and the regulator will go into thermal shutdown. Internal thermal shutdown circuitry protects the device from permanent damage.
4) The device is not guaranteed to function outside of its operating conditions.
5) Measured on JESD51-7, 4-layer PCB.