



EVL6566A-75WES4

19 V - 75 W SMPS compliant with latest Energy Star® criteria using the L6563 and the L6566A

Data brief

Features

- Universal input mains range: 90 - 264 V_{ac} - Frequency 45 - 65 Hz
- Output voltage: 19 V @ 4 A continuous operation
- Mains harmonics: Acc. to EN61000-3-2 Class-D or JEIDA-MITI Class-D
- Standby mains consumption: < 0.14 W @ 230 V_{ac}, < 0.085 W @ 115 V_{ac}
- Active load average efficiency: better than 87% without synchronous rectification
- EMI: According to EN55022-Class-B
- Safety: According to EN60950
- Dimensions: 78x170 mm, 25 mm component maximum height
- PCB: Single side, 70 μm, CEM-1, Mixed PTH/SMT

Description

This board implements a 75 W SMPS reference design, tailored to the specifications of a typical hi-end portable computer power supply (adapter).

The peculiarities of this design are the very high efficiency at light load and the excellent global efficiency for a two-stage architecture. The high efficiency at high load is achieved without using synchronized rectification at secondary side and therefore offers a very cost effective solution.

The circuit is made up of two stages: a front-end PFC using the L6563 and a flyback converter based on the L6566A. The CV/CC controller TSM1014 allows the correct current limitation on the secondary side. The flyback stage works as master and it is dedicated to controlling the circuit operation, including the standby and protections. Additionally, it switches the PFC stage on and off by means of a dedicated pin (VCC_PFC), therefore helping to achieve an excellent efficiency even at light load, with low complexity.

Efficiency during active load and light load operation are compliant with Energy Star® Eligibility Criteria for both external (EPA rev. 2.0 EPS) and computer integrated (EPA rev. 4.0 COMPUTERS) power supplies. In addition, this design is also compliant with the latest computer requirements.

Figure 1. EVL6566A-75WES4 Energy Star® compliant adapter demonstration board

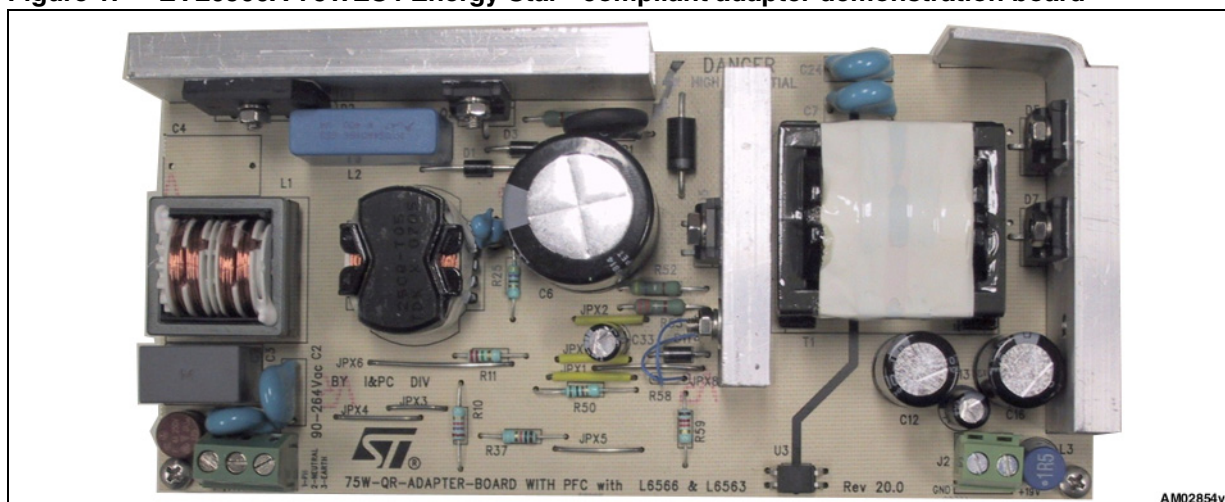


Figure 2. EVL6566A-75WES4 electrical diagram

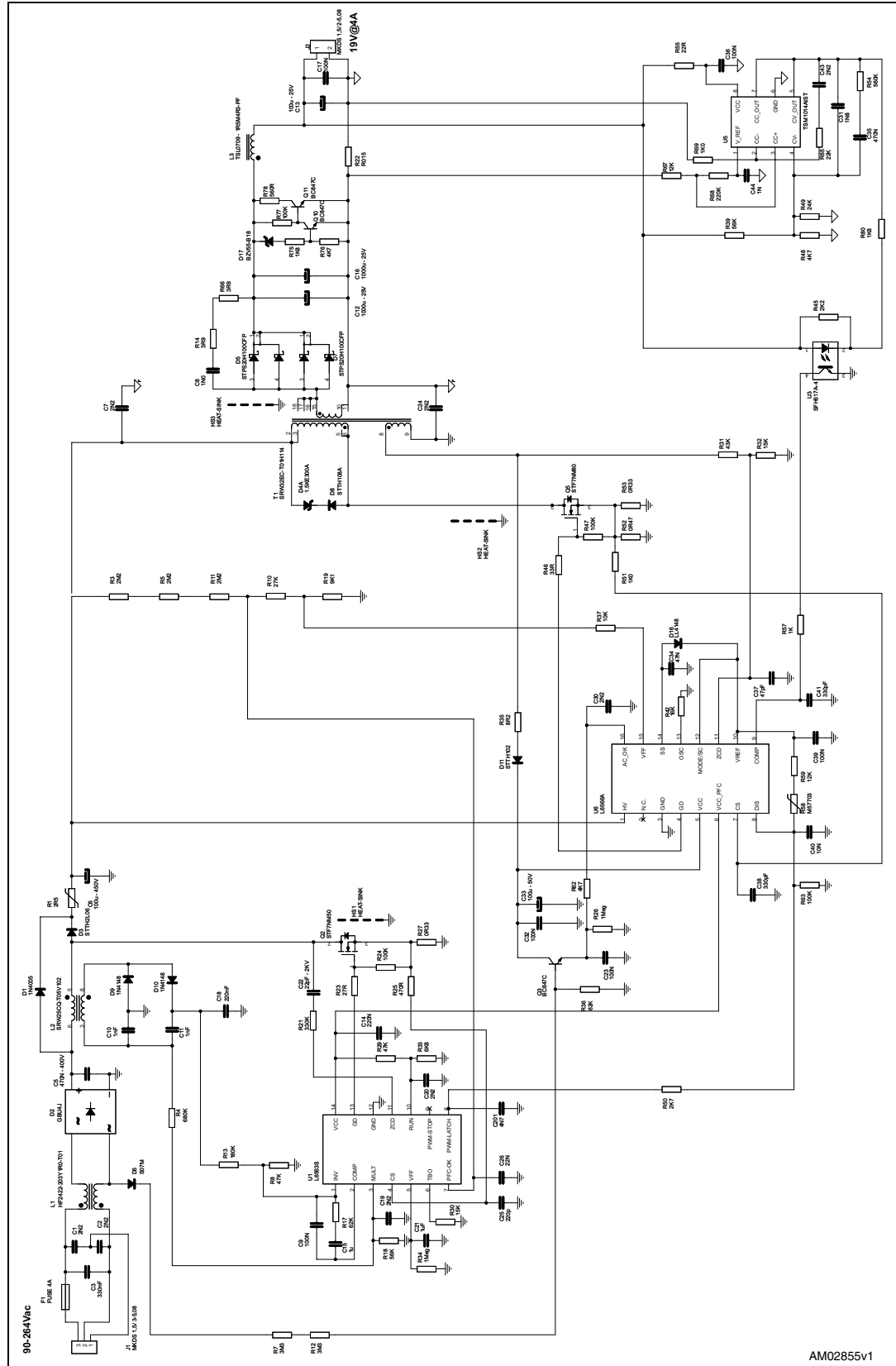
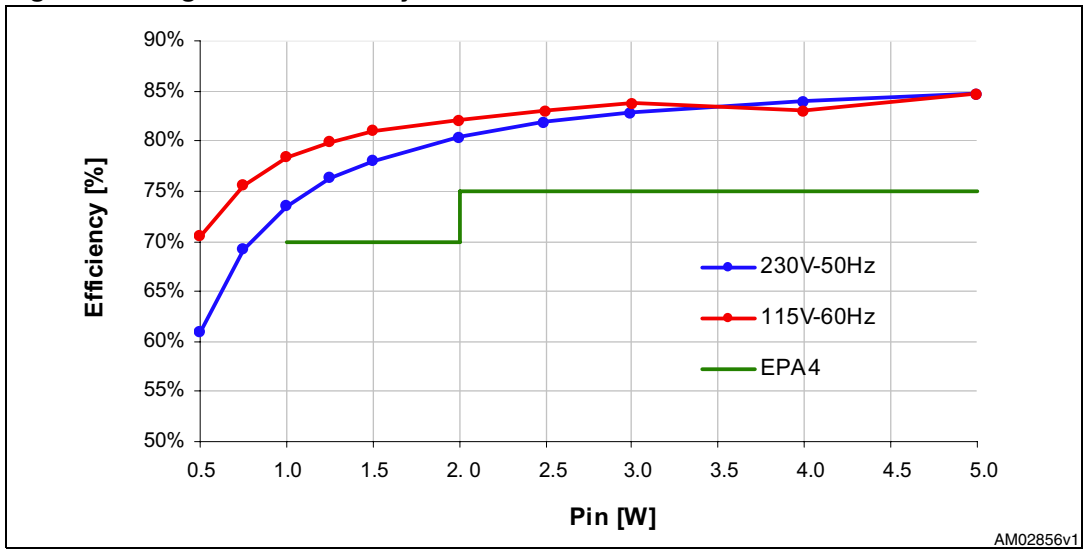


Figure 3. Light load efficiency measurements



Revision history

Table 1. Document revision history

Date	Revision	Changes
28-Nov-2011	1	Initial release.

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