

### STEVAL-ISA121V1

# Wide range single-output demonstration board based on the VIPER37LE

Data brief

### **Features**

- Universal input mains range:
  - input voltage 90 264 V<sub>AC</sub>
  - frequency 45 65 Hz
- Single-output voltage: 5 V @ 3 A continuous operation
- Standby mains consumption: < 30 mW @ 230 V<sub>AC</sub>
- Average efficiency: > 75%
- Complies with EuP Lot 6 requirements
- Fully protected against faults overload, overvoltage, transformer saturation and overheating
- Compliant with EMC norm EN55022-Class-B
- RoHS compilant

### **Description**

The STEVAL-ISA121V1 demonstration board implements a 15 W single-output wide range mains power supply to be used as an auxiliary adapter in applications such as LCD, plasma or LED TVs, desktop computers, etc., when the main power supply is OFF or in standby mode and the auxiliary power supply must provide energy only to some specific parts of the equipment such as USB ports, remote receiver, etc.

The board uses the new VIPER37LE, an offline high voltage converter from the VIPerPlus family, specifically designed for fixed frequency flyback converters, which combines a high-performance low voltage PWM controller chip and a max. 4.5  $\Omega$   $R_{DS(on)},\,800$  V  $B_{V(DSS)},\,$  avalanche-rugged power MOSFET in the same package.

The application is optimized for less than 30 mW standby consumption and meets EPA 2.0 limits, thereby helping to meet the most stringent energy-saving requirements.



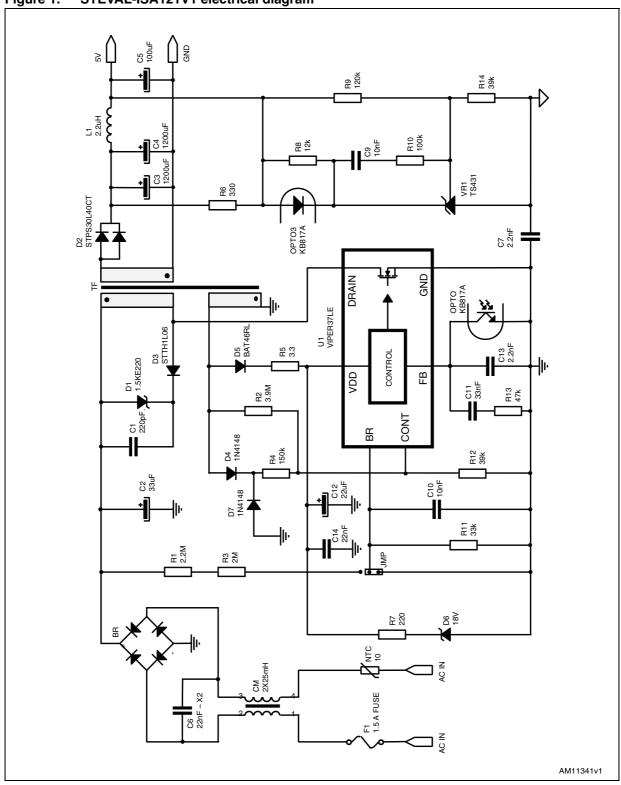
STEVAL-ISA121V1

The board implements several protection features that considerably increase end-product safety and reliability: overload protection, overvoltage protection, brownout protection, hysteretic thermal protection, shorted secondary rectifier detection, and transformer saturation protection, all of which are in auto-restart mode.

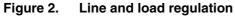
Schematic diagram STEVAL-ISA121V1

## 1 Schematic diagram

Figure 1. STEVAL-ISA121V1 electrical diagram



#### **Output characteristics** 2



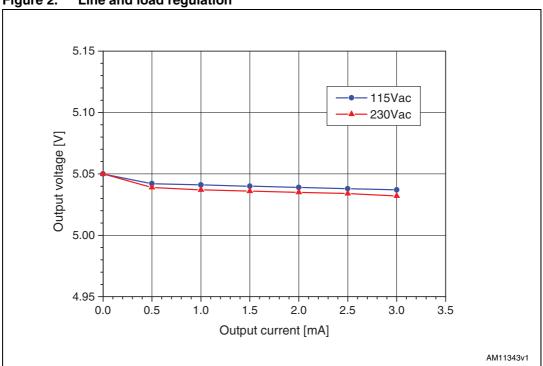


Figure 3. No load consumption

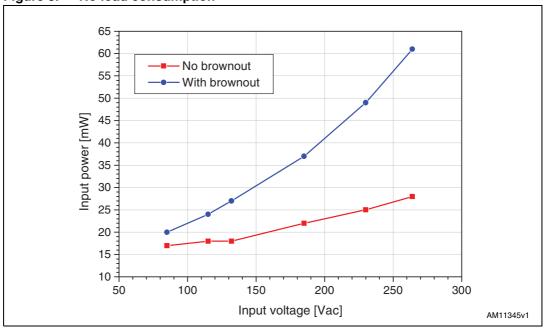
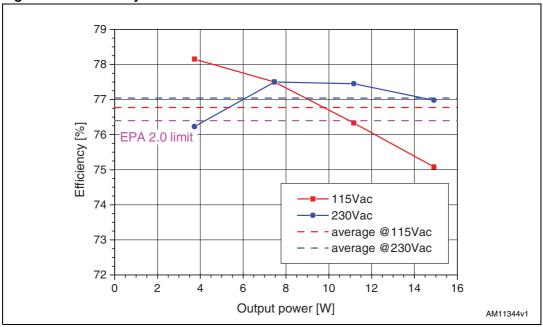


Figure 4. Efficiency



STEVAL-ISA121V1 Revision history

# 3 Revision history

Table 1. Document revision history

Date	Revision	Changes
09-Jan-2013	1	Initial release.

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