



## STEVAL-ISA052V1

High efficiency step-down controller with embedded 2 A LDO regulator demonstration board based on the PM6675S

Data brief

### Features

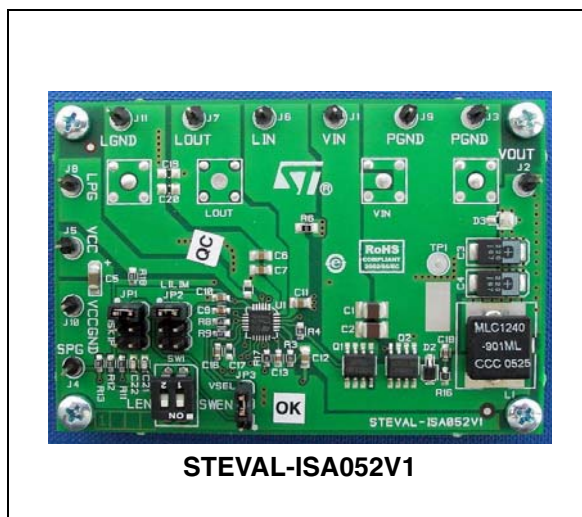
- 4.5 V to 28 V input voltage range
- 0.6 V,  $\pm 1\%$  voltage reference
- 1.5 V fixed output voltage
- 0.6 V to 3.3 V adjustable output voltage
- 1.237 V  $\pm 1\%$  reference voltage available
- Very fast load transient response constant on-time loop control
- No-RSENSE current sensing using low-side MOSFETs'  $R_{DS(on)}$
- Negative current limit
- Latched OVP, UVP and thermal shutdown
- Fixed 3 ms soft-start
- Selectable pulse-skipping at light load
- Selectable no-audible (33 kHz) pulse-skip mode
- All ceramic output capacitors application supported
- Output voltage ripple compensation
- Output soft-end
- RoHS compliant

### Description

The STEVAL-ISA052V1 demonstration board is based on the PM6675S device which consists of a single high efficiency step-down controller and an independent low drop-out (LDO) linear regulator.

The constant on-time (COT) architecture assures fast transient response supporting both electrolytic and ceramic output capacitors. An embedded integrator control loop compensates the DC voltage error due to the output ripple.

Selectable low-consumption mode allows the highest efficiency over a wide range of load conditions. The low-noise mode sets the minimum switching frequency to 33 kHz for audio-sensitive



applications. The LDO linear regulator can sink and source up to 2 Apk. Two fixed current limits ( $\pm 1$  A and  $\pm 2$  A) can be chosen.

An active soft-end is independently performed on both the switching and the linear regulator outputs when disabled.

1

**Figure 1. Circuit schematic**



## 2 Revision history

**Table 1. Document revision history**

| Date        | Revision | Changes          |
|-------------|----------|------------------|
| 12-Nov-2010 | 1        | Initial release. |

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