



STEVAL-ISA018V1

150 W (240 W peak) resonant SMPS
demonstration board based on the L6599

Data brief

Features

- Input voltage range:
 - 185 to 265 Vac
 - 85 to 185 Vac (with voltage double)
- Input frequency range 50/60 Hz
- Output voltage $24\text{ V} \pm 2\%$
- Output power 150 W (240 W peak)
- Compliant with standards:
 - EN60950 for safety
 - EN55014 for EMI
- RoHS compliant

Description

The STEVAL-ISA018V1 demonstration board presents a high efficiency solution for industrial switched-mode power supplies (SMPS) up to 150 W continuous output power, with peak power of 240 W. The design takes advantage of a resonant approach to minimize switching losses, resulting in efficiency higher than 90%.

The design is based on a half-bridge topology operated in a resonant manner by means of a resonant LC tank, driven by a dedicated L6599 high-voltage resonant controller.

The board provides one regulated output, $V_O = 24\text{ V}$ with $I_O = 6\text{ A}$ and overload capability up to $I_O = 10\text{ A}$.

Output voltage and current are controlled by a secondary-side IC (TSM1011), which provides square output regulation, while the overload is managed by thermal protection (PTC) on the output rectifiers.



STEVAL-ISA018V1

Figure 1. Circuit schematic



2 Revision history

Table 1. Document revision history

| Date | Revision | Changes |
|-------------|----------|------------------|
| 27-Apr-2010 | 1 | Initial release. |

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