

## 49W DC-DC Flyback Converter Using the MAX17597 and MAX17606

MAXREFDES1256

### Design Verification Testing

#### Introduction

The MAXREFDES1256 is a 7V/7A synchronous rectification, isolated opto-flyback DC-DC converter which uses the MAX17597. This reference design was subjected to design verification testing and the specification has been validated in laboratory conditions at an ambient temperature of +25°C

#### Test Equipment Used

The following equipment was used for design verification:

- GW Instek GPC-3030D 0-60V/0-6A DC Power Supply
- B&K Precision® 120V/120A/750W DC Electronic Load
- Tektronix® MDO3024 Oscilloscope
- Fluke® 87 Digital Multimeters

#### Tests Conducted

The tests listed below were completed on the MAXREFDES1256 and the results follow:

- 1) Output Voltage vs. Load Current
- 2) Output Voltage vs. Input Voltage
- 3) Efficiency vs. Load Current
- 4) Primary MOSFET  $V_{DS}$  Voltage
- 5) Secondary MOSFET  $V_{DS}$  Voltage
- 6) Output Voltage Ripple
- 7) Transient Response 50% to 100% Load at  $V_{INNOM}$

## Test Results

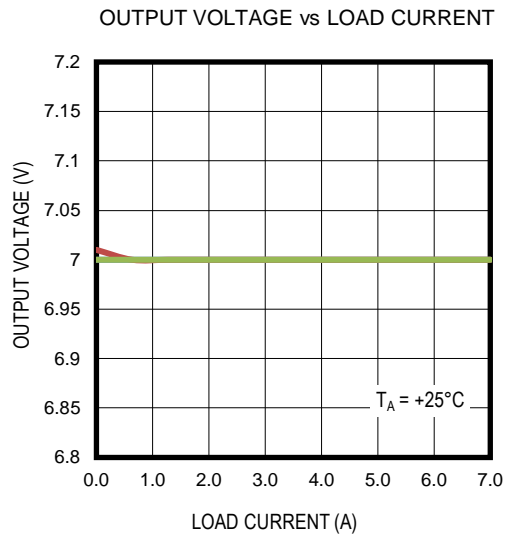


Figure 1: Output Voltage vs Load Current

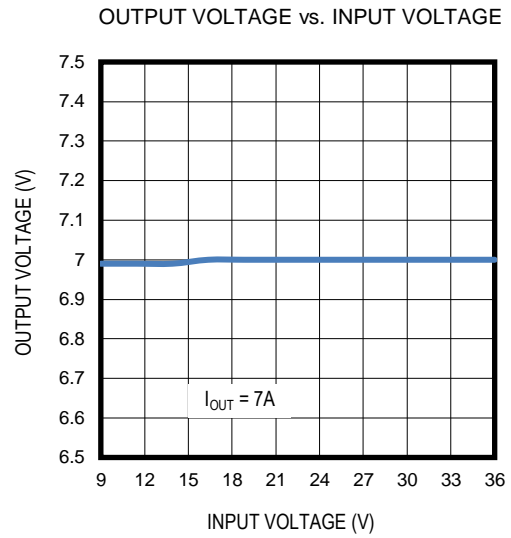


Figure 2: Output Voltage vs. Input Voltage

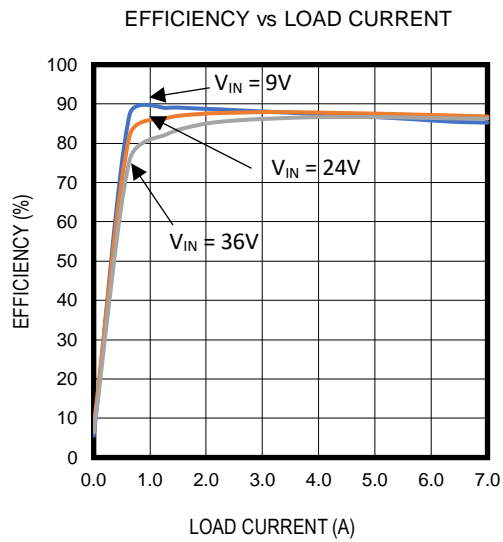


Figure 3: Efficiency vs. Load Current

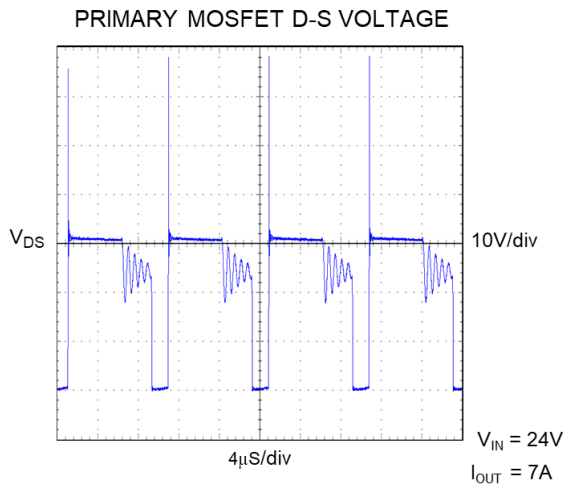


Figure 4: Primary MOSFET  $V_{DS}$  Voltage

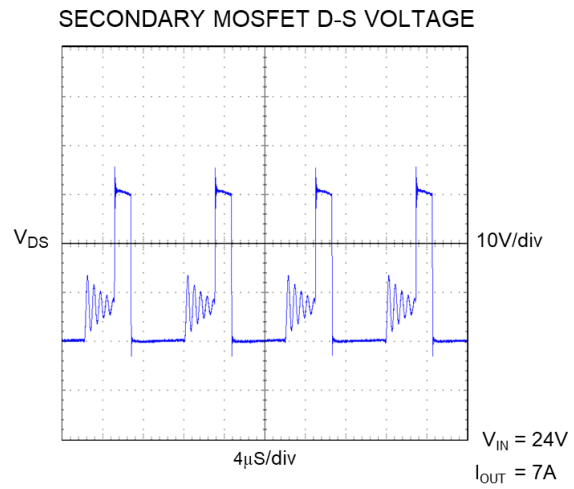


Figure 5: Secondary MOSFET  $V_{DS}$  Voltage

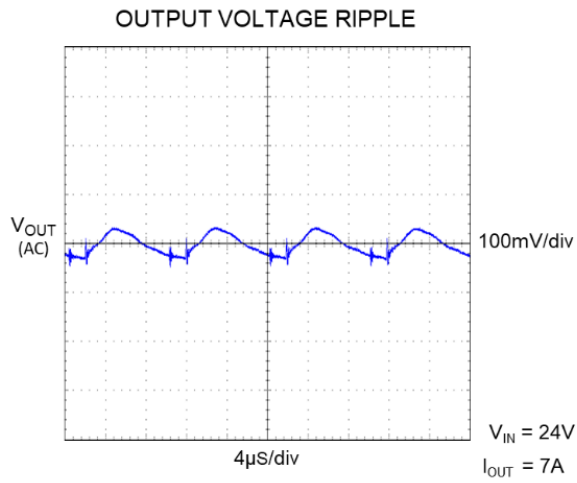


Figure 6: Output Voltage Ripple

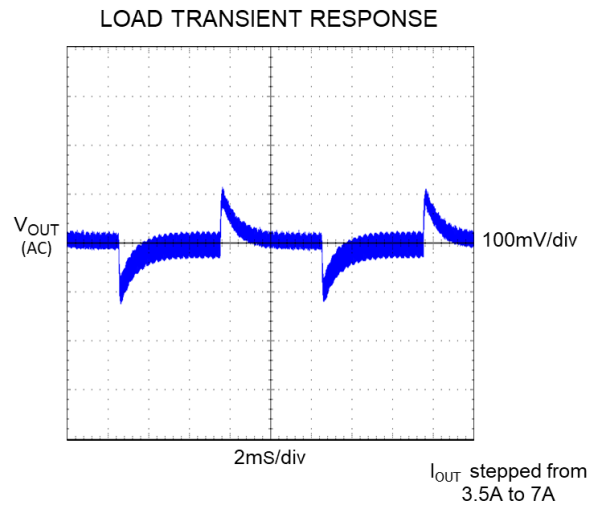


Figure 7: Transient Response 50% to 100% Load at  $V_{IN,NOM}$

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