DESCRIPTION

Demonstration circuit 464 is a termination power supply that sinks or sources up to 12A current. Typical applications include termination power supplies for DDR or QDR memories. DC464 utilizes the LTC3718, a constant on-time, valley current mode synchronous buck controller with an integrated monolithic boost switcher that produces 5V bias for driving logic level MOSFETs. The demo circuit provides additional footprints for paralleling more MOSFETs and input/output capacitors for higher current applications. The output voltage (V_OUT) equals half of the reference voltage (V_REF). The default reference voltage is the input voltage, V_IN. An external reference can be provided to program the output voltage directly.

SPECIFICATIONS

• V_IN 2.5V typical, 1.5V–5V
• V_OUT V_IN/2
• I_OUT ±10A continuous, ±12A_MAX with air flow at 100LFM

SETUP NOTES

JUMPER SETTINGS
JP1: BOOST at ON position
JP2: VIN2 at ON position

EXTERNAL REFERENCE

The output of this demo board can be programmed by the external reference at the VREF pin.

NOTE: R4 must be removed before applying V_REF.

QUICK START PROCEDURE

Refer to Figure 1 and Figure 2 for proper measurement equipment setup and follow the procedure below:

1. Connect the input 2.5V power source to the VIN and GND pins using wires capable of handling 6A current.
2. Turn on the input power supply. VOUT should read about V_IN/2 ±0.05V. If V_IN is fixed at 2.5V, V_OUT =1.25V±0.05V
3. Turn off the input power supply VIN first.
4. Connect the load to the VOUT and GND pins with the positive terminal of the load connecting to VOUT.
5. Turn on VIN.
6. Increase the load current to 10A. V_OUT should always equal to V_IN/2 ±0.05V. If V_IN is fixed at 2.5V, V_OUT should read about 1.25V±0.05V.

SOURCING CURRENT TEST (FIGURE 1)

3. Turn off the input power supply VIN first.
4. Connect the load to the VOUT and GND pins with the positive terminal of the load connecting to VOUT.
5. Turn on VIN.
6. Increase the load current to 10A. V_OUT should always equal to V_IN/2 ±0.05V. If V_IN is fixed at 2.5V, V_OUT should read about 1.25V±0.05V.

SINKING CURRENT TEST (FIGURE 2)

7. Turn off the input power supply VIN first.
8. Connect the load to the VIN and VOUT pins with the positive terminal of the load connecting to VIN and the negative terminal of load connecting to VOUT.
9. Turn on VIN.
10. Increase the load current to 10A. If VREF is fixed at 2.5V, V_OUT should read about 1.25V±0.05V.
Figure 1. Proper Measurement Equipment Setup for Output Sourcing Current

Figure 2. Proper Measurement Equipment Setup for Output Sinking Current