



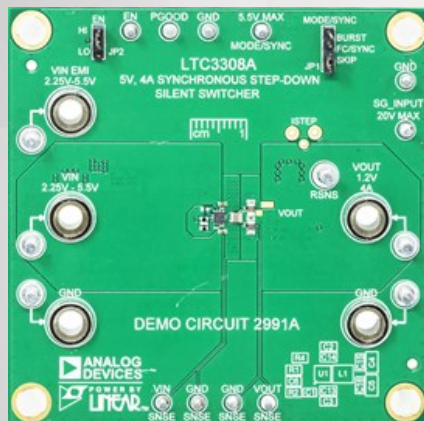
DC2991A

LTC3308A Demo Board | 5V Input to 1.2V Output at 4A
Synchronous Step-Down Silent Switcher Demo Circuit

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Overview

Product Details

Demonstration circuit 2991A features the LTC3308A 5V, 4A synchronous step-down Silent Switcher[®] operating as a 2.0MHz, 3.3V to 1.2V 4A buck regulator. The LTC3308A supports adjustable output voltages from 0.5V to V_N with operating frequencies from 1MHz up to 3MHz. The LTC3308A is a compact, ultralow emission, high efficiency, and high speed synchronous monolithic stepdown switching regulator. A minimum on-time switching of 22ns enables high V_N to low V_{OUT} conversion ratios at high frequencies.

The DC2991A operating mode may be selected as BURST, SKIP or Forced Continuous (FC) mode. Setting JP1 to the FC/SYNC position will allow the LTC3308A to sync to a clock frequency from 1MHz to 3MHz. The LTC3308A operates in forced continuous mode when syncing to an external clock. The DC2991A is set to a fixed 2MHz frequency by connecting RT to V_N through a 0 Ω resistor, R9. The frequency can be easily changed by removing R9 and setting an appropriate resistor in the R4 location to obtain the desired frequency. Refer to the LTC3308A data sheet for the proper RT value for a desired switching frequency.

The DC2991A also has an EMI filter to reduce conducted EMI. This EMI filter can be included by applying the input voltage at the V_N EMI terminal. The EMI performance of the board is shown in the EMI Test Results section. The red lines in the EMI performance graphs illustrate the CISPR25 Class 5 peak limits for the conducted and radiated emission tests.

The LTC3308A data sheet gives a complete description of the device, operation and application information. The data sheet must be read in conjunction with this demo manual. The LTC3308A is assembled in a 2mm \times 2mm LQFN package with exposed pads for low thermal resistance. The layout recommendations for low EMI operation and maximum thermal performance are available in the data sheet section: Low EMI PCB Layout.

The Efficiency vs Load graph shows the efficiency and the power loss of the circuit with a 3.3V input in Burst Mode operation.

Applicable Parts

[LTC3308A](#)

Documentation

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Design & Integration Files

DC2991A - Design Files ZIP 3.75 M

Demo Board Schematic

DC2991A - Schematic PDF 111.33 K

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| DC2991A Production | 5V Input to 1.2V Output at 4A Synchronous Step-Down Silent Switcher Demo Circuit | | Yes |

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