

LM3224 Evaluation Board

National Semiconductor
Application Note 1394
Clinton Jensen
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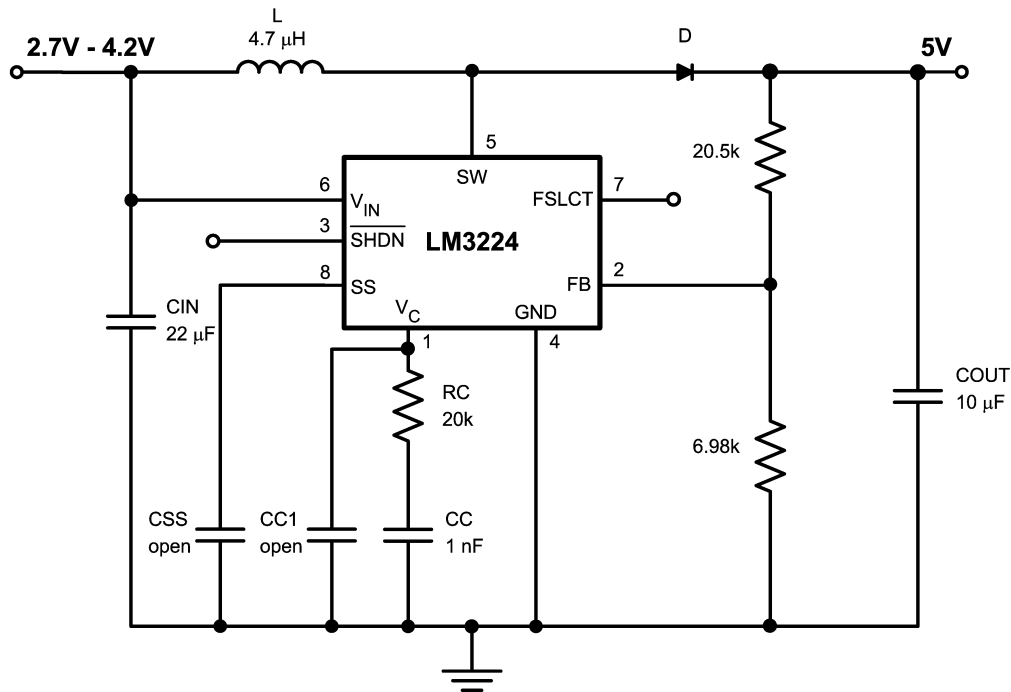
LM3224 Evaluation Board

Introduction

The LM3224 is a step-up DC/DC converter with a 0.15Ω (typ.), 2.45A (typ.) internal switch and pin selectable operating frequency. The LM3224 can be operated at switching frequencies of 615kHz and 1.25MHz allowing for easy filtering and low noise. An external compensation pin gives the user flexibility in setting frequency compensation, which makes possible the use of small, low ESR ceramic capacitors at the output. An external soft-start pin allows the user to control the amount of inrush current during start up.

The LM3224 evaluation board is set up for a 5V output from an input voltage from 2.7V to 4.2V, or the equivalent range of a Li-Ion battery. Included on the board are 2 jumpers, one to select the switching frequency and one to select if the device is on or off. Both may also be controlled externally by removing the jumper. The regulator is capable of supplying up to at least 650mA of load current down to the minimum of 2.7V input at 1.25MHz operation.

Schematic and Layout



Schematic

20162401

Bill of Materials

Designator	Component	Manufacturer
U1	LM3224MM, MSOP-8	National Semiconductor
L	4.7 μH, DO3316P-472	Coilcraft, (800) 322-2645
CIN	22 μF, JMK325BJ226MM	Taiyo Yuden, (408) 573-4150
COUT	10 μF, TMK432BJ106MM	Taiyo Yuden, (408) 573-4150
D	2A, 40V Schottky, MBRS240LT	On Semiconductor
RC	20k, 1206 Case, CRCW12062002F	Dale (Vishay), (402) 564-3131
CC	1 nF, 1206 Case, VJ1206A102KXAA	Vitramon (Vishay), (203) 268-6261
CC1, CSS	Open	
RFB1	20.5k, 1206 Case, CRCW12062052F	Dale (Vishay), (402) 564-3131
RFB2	6.98k, 1206 Case, CRCW12066981F	Dale (Vishay), (402) 564-3131

AN-1394

Notes

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