AN-1424 LP38692-ADJ Evaluation Board

1 Introduction

The LP38692-ADJ is a 1A low-dropout linear regulator whose output voltage can be externally set to any value between 1.25 V and 9 V using two resistors. This document provides information about the evaluation board to demonstrate the function of this part.

2 Basic Application Circuit

The basic application circuit shown in Figure 1 provides the component designators used on the evaluation board.

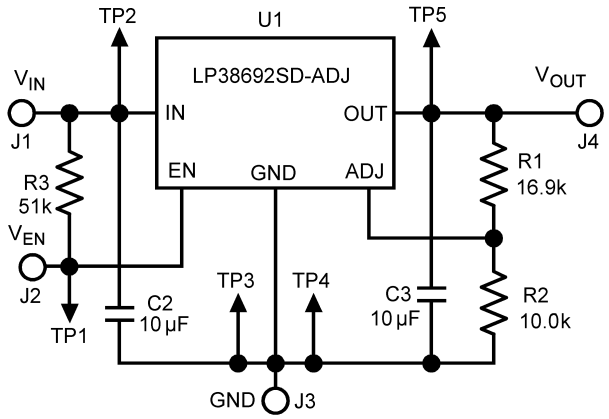

Figure 1. Evaluation Board Basic Application Circuit

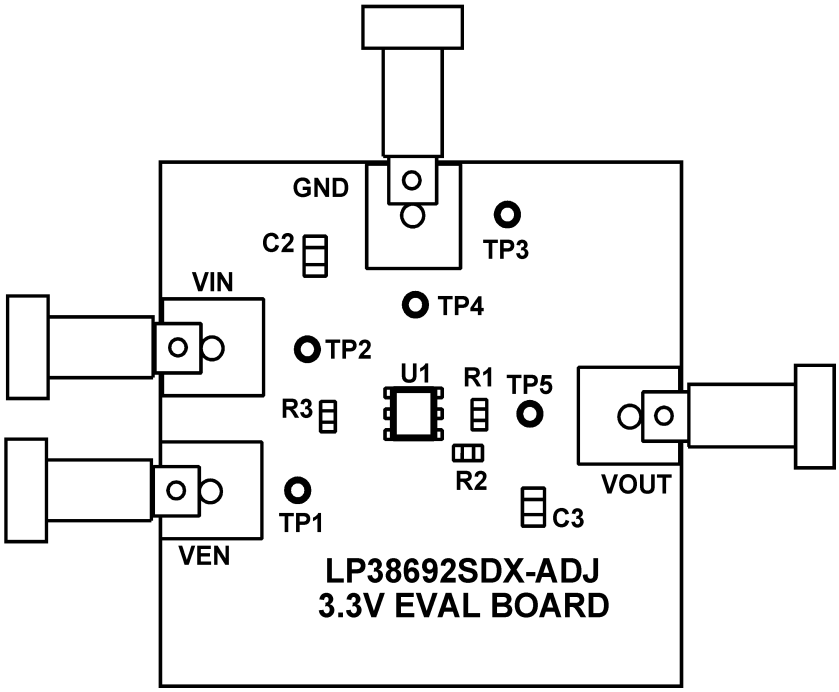

Figure 2. Evaluation Board Component Layout (Top View)

3 Setting the Output Voltage

The output voltage is set using the two external resistors: R1 and R2.

$$V_{OUT} = V_{ADJ} \times (1 + R1/R2) \quad (1)$$

It can be assumed that V_{ADJ} = 1.25 V.

R2 is required to be less than 12 kΩ for minimum load. On these boards, R2 is 10.0 kΩ. Using these values for R2 and V_{ADJ}, the appropriate value for R1 can be calculated for any value of V_{OUT} between 1.25 V and 9 V. 3.3 V output can be set using a 16.9 kΩ resistor for R1.

Table 1. Component List Higher Voltage Rated Capacitors Can Be Substituted, But Only X5R or X7R Dielectric Types Can Be Used

PCB	551012806-001
U1	IC, LP38692SD-ADJ
TP1, TP2, TP3, TP4 TP5	Test point terminal, NEWARK 97H6311
J1, V_{IN} connector	Banana jack (RED): DIGI-KEY 108-0902-001
J4, V_{OUT} connector	Banana jack (BLUE): DIGI-KEY 108-0910-001
J3, ground connector	Banana jack (BLACK): DIGI-KEY 108-0903-001
J2, VEN connector	Banana jack (WHITE): DIGI-KEY 108-0901-001
R1	Resistor, 16.9 kΩ, 1%, 0.125W, 0805; Panasonic ERJ-6ENF1692V
R2	Resistor, 10.0 kΩ, 1%,0.125W, 0805; Panasonic ERJ-6ENF1002V
R3	Resistor, 51.0 kΩ, 1%, 0.125W, 0805; Panasonic ERJ-6ENF5102V
C2, C3	Ceramic capacitor, 10 µF, Taiyo-Yuden LMK325BJ106MN

Revision History

Changes from B Revision (April 2013) to C Revision **Page**

- Changed R1 and R2 values 1
- Added orderable number suffix 2
- Changed Changed R1, R2 and R3 components 2

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

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