LP38692-ADJ Evaluation Board

National Semiconductor
Application Note 1424
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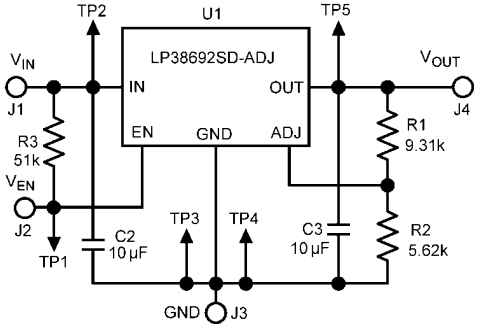
Introduction

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

Basic Application Circuit

The basic application circuit shown below provides the component designators used on the evaluation board.



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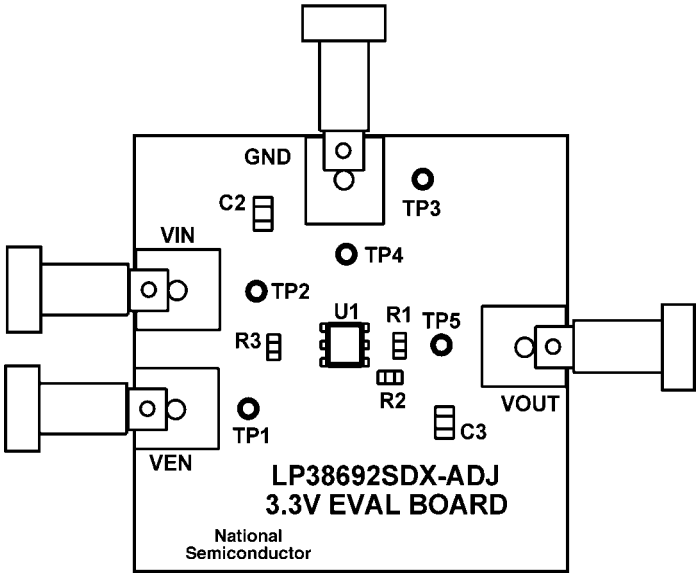
Evaluation Board Basic Application Circuit



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Evaluation Board Component Layout (Top View)

Setting the Output Voltage

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

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

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

R2 is required to be less than 12 kΩ for mimimum load. On these boards, R2 is 5.62 kΩ. Using these values for R2 and V_{ADJ}, the appropriate value for R1 can be calculated for any value of V_{OUT} between 1.25V and 9V. 3.3V output can be set using a 9.31 kΩ resistor for R1.

Component List

Higher voltage rated capacitors may be substituted, but only X5R or X7R dielectric types may be used.

PCB	551012806-001
U1	IC, LP38692SD-ADJ
TP1, TP2, TP3, TP4 TP5	test point terminal, NEWARK 97H6311
J1, VIN CONNECTOR	banana jack (RED): DIGI-KEY 108-0902-001
J4, VOUT 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, 0805 case, 9.31 kΩ, 1%, DIGI-KEY 311- (9.31k) CCT-ND
R2	resistor, 0805 case, 5.62 kΩ, 1%, DIGI-KEY 311- (5.62k) CCT-ND
R3	resistor, 0805 case, 51 kΩ, 5%, DIGI-KEY 311-(51k) ACT-ND
C2, C3	ceramic capacitor, 10 µF, Taiyo-Yuden LMK325BJ106MN

Notes

Notes

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