EVAL-ADM1087EBZ User Guide
UG-617

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Evaluation Kit for ADM1087 Sequencer

FEATURES

Full featured evaluation board for the ADM1087 sequencer
3 LEDs indicate output sequence
Dedicated ENABLE/DISABLE switch
On-board test points to examine ADM1087 operation
On-board expansion feature to add more ADM1087 devices

EVALUATION KIT CONTENTS

ADM1087 evaluation board

GENERAL DESCRIPTION

The ADM1087 evaluation board (EVAL-ADM1087EBZ) is a fully featured board for evaluating ADM1087 sequencers.

The board is designed to power up with a 9 V input supply that can be turned on and off using a dedicated switch (Switch S1, ON/OFF). The two ADM1087 devices on the board can be enabled and disabled using another switch (Switch S2, ENABLE/DISABLE). When enabled, the ADM1087 devices on the board monitor a voltage rail and turn on the corresponding three ADP3334 LDO devices in a sequence. LEDs on the board provide a direct visual indication of the sequencing of three different voltages: 3.3 V, 2.5 V, and 1.8 V.

Complete specifications for the ADM1087 can be found in the ADM1087 data sheet, available at www.analog.com, and should be consulted in conjunction with this user guide when using the evaluation board.

PHOTOGRAPH OF THE EVALUATION BOARD

Figure 1.

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REVISION HISTORY

11/13—Revision 0: Initial Version

EVALUATION BOARD DESCRIPTION

The EVAL-ADM1087EBZ is designed to demonstrate the features of the ADM1087 sequencer. A simplified block diagram of the evaluation board is shown in Figure 2.

Two ADM1087 devices are used to sequence the outputs of three ADP3334 LDO regulators. Separate capacitors on the CEXT pin of each ADM1087 device determine the time delays between enabling the 3.3 V, 2.5 V, and 1.8 V supplies. The LDO regulators and ADM1087 devices are connected in a cascade; therefore, the output of each regulator is dependent on the output of the previous device.

There are two switches included on the board:

- The S1 switch (ON/OFF) is used to power up or power down the board.
- The S2 switch (ENABLE/DISABLE) is used to enable or disable the ADM1087 devices.

A 9 V battery supplies power to the board. The board functions as follows:

1. Place the S1 switch into the ON position to turn on the first ADP3334 LDO regulator.
2. The ADM1087 devices monitor the output of this regulator. When the output reaches 3.3 V, the red LED (D1) illuminates and the second ADP3334 LDO regulator turns on.
3. The ADM1087 devices monitor the output of this regulator. When the output reaches 2.5 V, the yellow LED (D2) illuminates and the third ADP3334 LDO regulator turns on.
4. The ADM1087 devices monitor the output of this regulator. When the output reaches 1.8 V, the green LED (D3) illuminates.

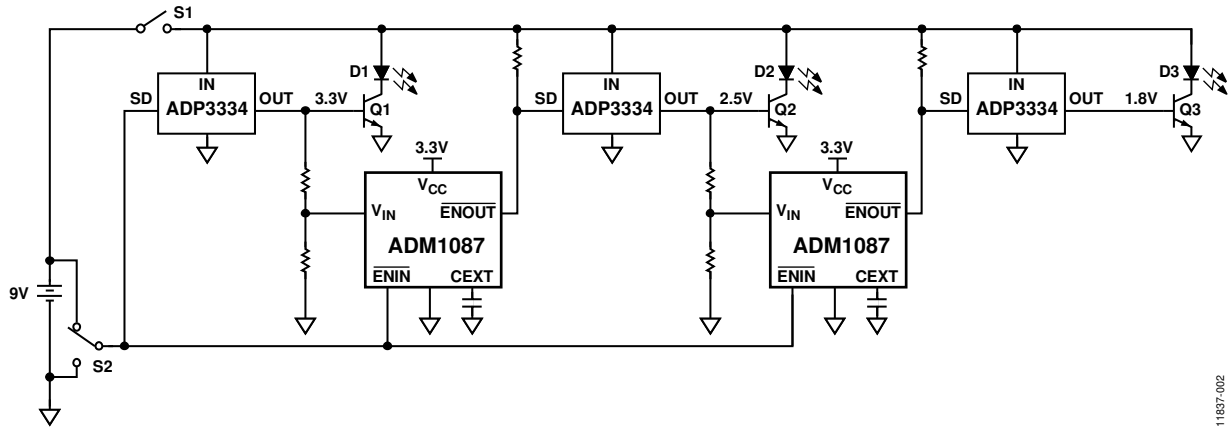

Figure 2. Simplified Block Diagram of EVAL-ADM1087EBZ

EVALUATION BOARD HARDWARE

EVALUATION BOARD CONNECTOR, SWITCH, LED FUNCTIONS

Table 1. Connector Functions

Reference	Function
P1	Connects the positive and negative terminal of a 9 V battery.

Table 2. Switch Functions

Reference	Position	Function
S1	ON	Powers up the board.
	OFF	Powers down the board.
S2	ENABLE	Enables the ADM1087 devices.
	DISABLE	Disables the ADM1087 devices.

Table 3. LED Functions

Reference	LED Color	Function
D1	Red	Illuminates when the first ADP3334 LDO regulator output is 3.3 V.
D2	Yellow	Illuminates when the second ADP3334 LDO regulator output is 2.5 V.
D3	Green	Illuminates when the third ADP3334 LDO regulator output is 1.8 V.

EVALUATION BOARD SCHEMATIC

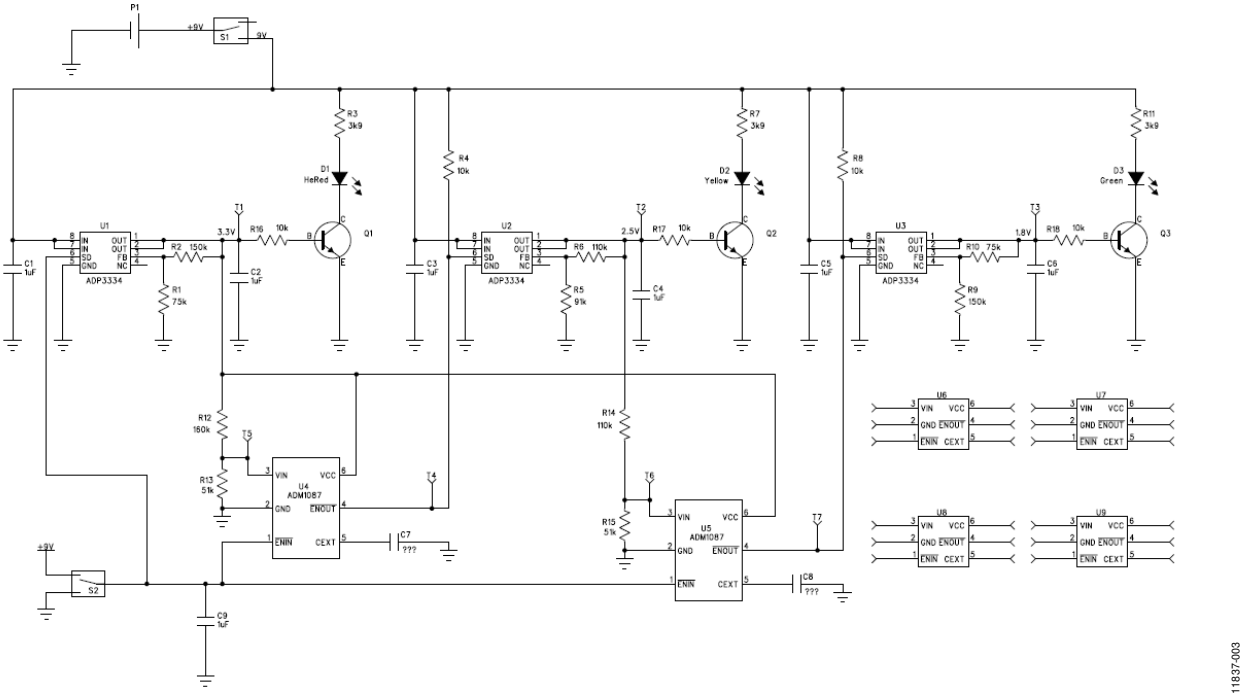

Figure 3. EVAL-ADM1087EBZ Schematic, Page 1

BILL OF MATERIALS

Table 4. Bill of Materials for the EVAL-ADM1087EBZ

Name	Part Type	Value	Description	Stock Code
C1	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
C2	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
C3	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
C4	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
C5	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
C6	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
C7	Capacitor	100 nF	35 V through-hole tantalum capacitor	FEC 1100483
C8	Capacitor	100 nF	35 V through-hole tantalum capacitor	FEC 1100483
C9	Capacitor	1 µF	16 V, Y5V, ceramic capacitor	FEC 318-8899
D1	LED		Red LED	FEC 114-2512
D2	LED		Yellow LED	FEC 114-2515
D3	LED		Green LED	FEC 114-2509
P1	BATT_PP3		Pair battery connectors	FEC 723-988
Q1	BC850B		General-purpose transistor	FEC 108-1239
Q2	BC850B		General-purpose transistor	FEC 108-1239
Q3	BC850B		General-purpose transistor	FEC 108-1239
R1	Resistor	75 kΩ	0.1 W resistor	FEC 933-3541
R2	Resistor	150 kΩ	0.1 W resistor	FEC 933-2626
R3	Resistor	3.9 kΩ	0.1 W resistor	FEC 933-3169
R4	Resistor	10 kΩ	0.1 W resistor	FEC 933-2391
R5	Resistor	91 kΩ	0.1 W resistor	FEC 933-3649
R6	Resistor	110 kΩ	0.1 W resistor	FEC 933-2464
R7	Resistor	3.9 kΩ	0.1 W resistor	FEC 933-3169
R8	Resistor	10 kΩ	0.1 W resistor	FEC 933-2391
R9	Resistor	150 kΩ	0.1 W resistor	FEC 933-2626
R10	Resistor	75 kΩ	0.1 W resistor	FEC 933-3541
R11	Resistor	3.9 kΩ	0.1 W resistor	FEC 933-3169
R12	Resistor	160 kΩ	0.1 W resistor	FEC 933-2685
R13	Resistor	51 kΩ	0.1 W resistor	FEC 933-3339
R14	Resistor	110 kΩ	0.1 W resistor	FEC 933-2464
R15	Resistor	51 kΩ	0.1 W resistor	FEC 933-3339
R16	Resistor	10 kΩ	0.1 W resistor	FEC 933-2391
R17	Resistor	10 kΩ	0.1 W resistor	FEC 933-2391
R18	Resistor	10 kΩ	0.1 W resistor	FEC 933-2391
S1	SW-SPDT-SLIDE		SPDT slide switch	FEC 112-3875
S2	SW-SPDT-SLIDE		SPDT slide switch	FEC 112-3875
T1	Test point		Test point	FEC 873-1144
T2	Test point		Test point	FEC 873-1144
T3	Test point		Test point	FEC 873-1144
T4	Test point		Test point	FEC 873-1144
T5	Test point		Test point	FEC 873-1144
T6	Test point		Test point	FEC 873-1144
T7	Test point		Test point	FEC 873-1144
U1	LDO regulator		High accuracy, low I_Q, anyCAP® adjustable low dropout regulator in 8-lead MSOP	ADP3334ARMZ-REEL7
U2	LDO regulator		High accuracy, low I_Q, anyCAP adjustable low dropout regulator in 8-lead MSOP	ADP3334ARMZ-REEL7
U3	LDO regulator		High accuracy, low I_Q, anyCAP adjustable low dropout regulator in 8-lead MSOP	ADP3334ARMZ-REEL7
U4	Sequencer		Voltage Sequencer with Active Low, Open-Drain Enable Output in 6-lead SC70	ADM1087AKSZ-REEL7
U5	Sequencer		Voltage Sequencer with Active Low, Open-Drain Enable Output in 6-lead SC70	ADM1087AKSZ-REEL7

NOTES

NOTES

ESD Caution

ESD (electrostatic discharge) sensitive device. Charged devices and circuit boards can discharge without detection. Although this product features patented or proprietary protection circuitry, damage may occur on devices subjected to high energy ESD. Therefore, proper ESD precautions should be taken to avoid performance degradation or loss of functionality.

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