



Application Note: AS1345 - AN01 – Evaluation Board Description

AS1345

AN01 – Evaluation Board Description

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Revision History

Revision	Date	Owner	Description
1.0	12.12.2012	tka	Initial release
1.1	11.01.2013	tka	corrections

1 General Description

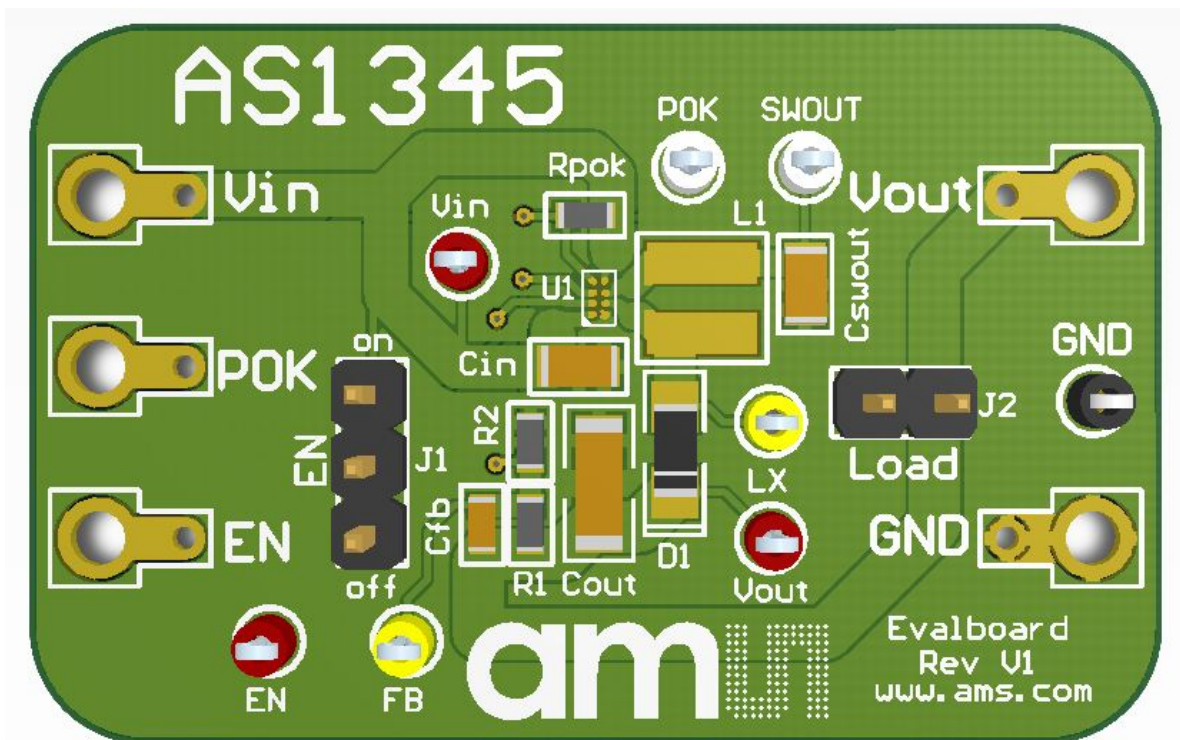
This document describes the AS1345 Evaluation Board.

The AS1345 is a high efficient DCDC Step-up converter, which contains an internal N-channel and an internal P-channel output isolation switch.

The device operates from a 2.9V to 5.0V supply and can boost voltages up to 18V.

1.1 Kit Content

The AS1345 Evaluation Kit includes only the AS1345 Evaluation Board



2 Getting Started

Drive the AS1345 DCDC Step-up converter only with the recommended settings and values as described in the datasheet.

Please check www.ams.com for the latest version.

There are 4 different AS1345 Evaluation Board versions available.

- AS1345A – AD with 100mA peak inductor current and adjustable Vout
- AS1345B – AD with 200mA peak inductor current and adjustable Vout
- AS1345C – AD with 350mA peak inductor current and adjustable Vout
- AS1345D – AD with 500mA peak inductor current and adjustable Vout

All Evaluation Boards have a resistive divider on the PCB to adjust the Vout.

With the equation $V_{out} = V_{REF} * (1+R1/R2)$ it's possible to calculate the right resistor values to get the desired V_{out} . $V_{REF} = 1.25V$

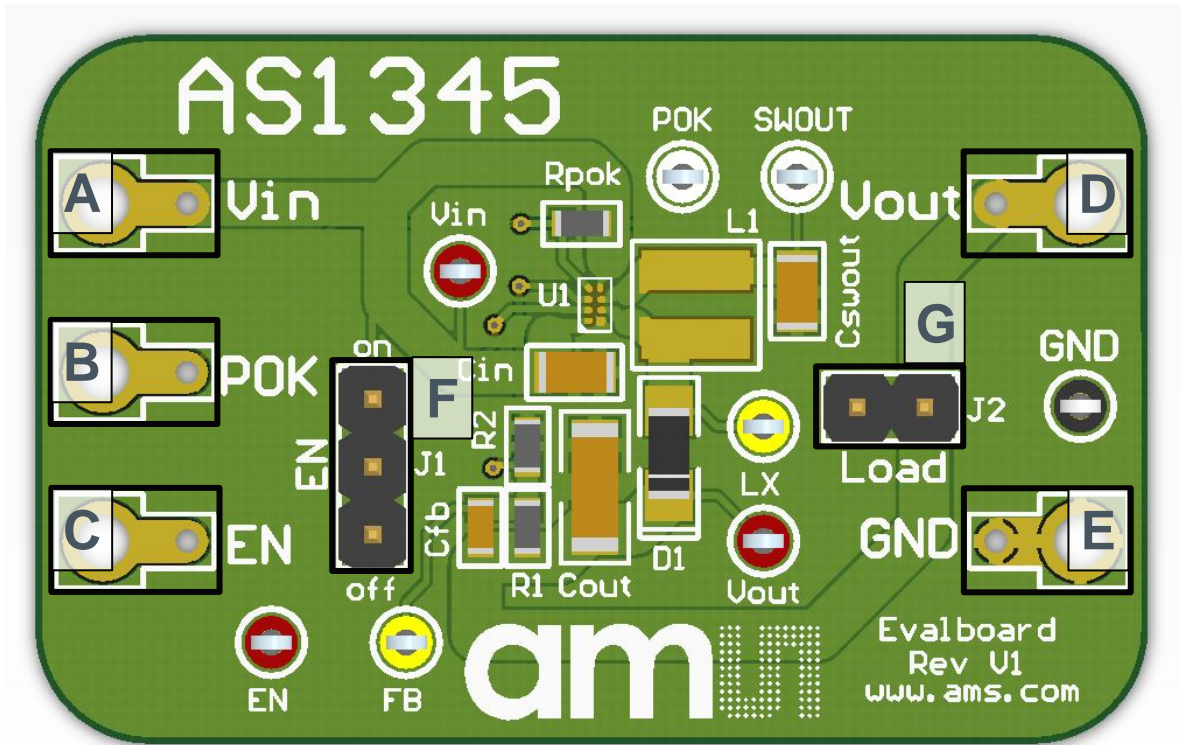
On all Evaluation Boards the output voltage is adjusted to 15V.

- ~ Connect a supply voltage (2.9V to 5.0V) between the connectors "Vin" and "GND".
- ~ Set the "EN" jumper to "on" and the output gives the adjusted 15V.

If there are questions, please contact us.

3 Hardware Description

Figure 1: Evaluation Board Connectors



Label	Name	Designator	Description	Info
A	Vin	BU1	Input Voltage connector	Vin range from 2.9V to 5.0V
B	POK	BU3	POK output connector	POK signal goes high, if the output has reached its nominal value
C	EN	BU2	EN input connector to enable/disable the output	connect an external high/low signal to enable/disable the output, when no "J1" is set
D	Vout	BU4	Output Voltage connector	Vout range from 5.0V to 18V
E	GND	BU5	GND connector	
F	EN	J1	jumper to enable/disable the output	if no external signal is connected to "C", it's possible to enable and disable the output with this jumper "on" → enable "off" → disable
G	Load	J2	Load connector	connector to put a load there

4 Board Schematics, Layout and BOM

The AS1345 Evaluation Board is a 2-layer FR4 board. The main component is the AS1345 with some external passive components, several measurement points and connectors.

Figure 2: AS1345 Evaluation Board Schematic

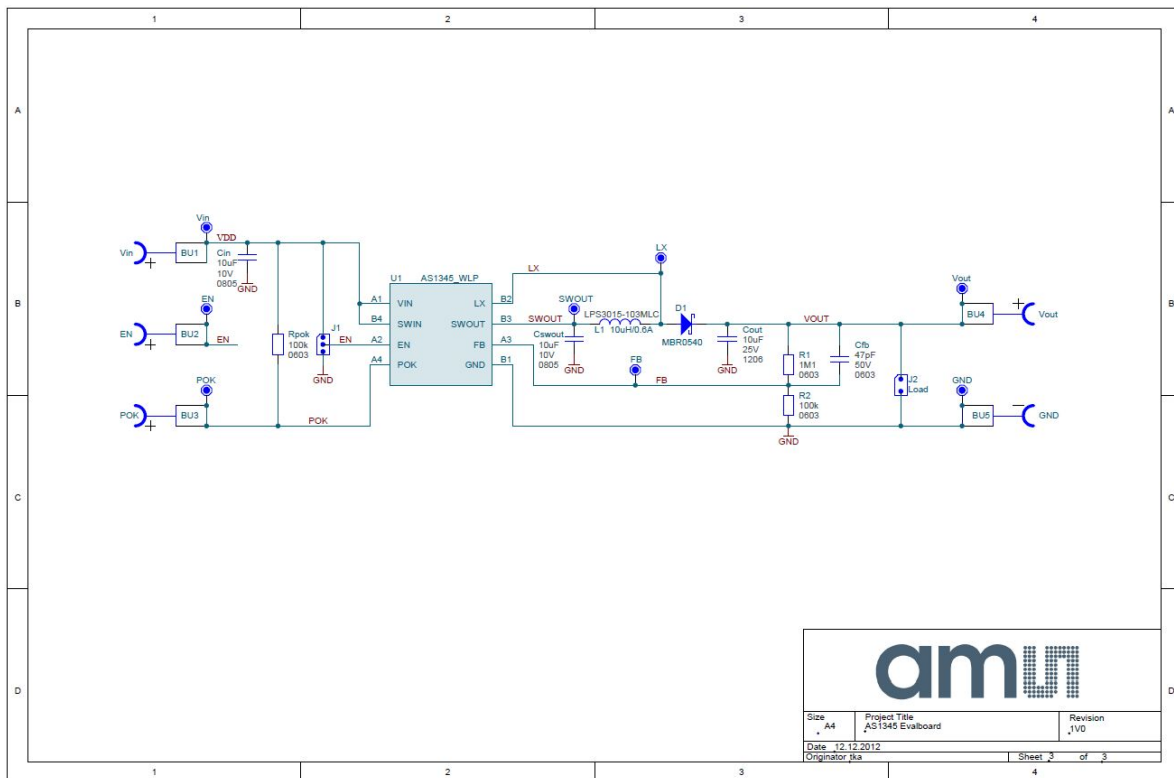


Figure 3: AS1345 Evaluation Board TOP Layer & Silkscreen

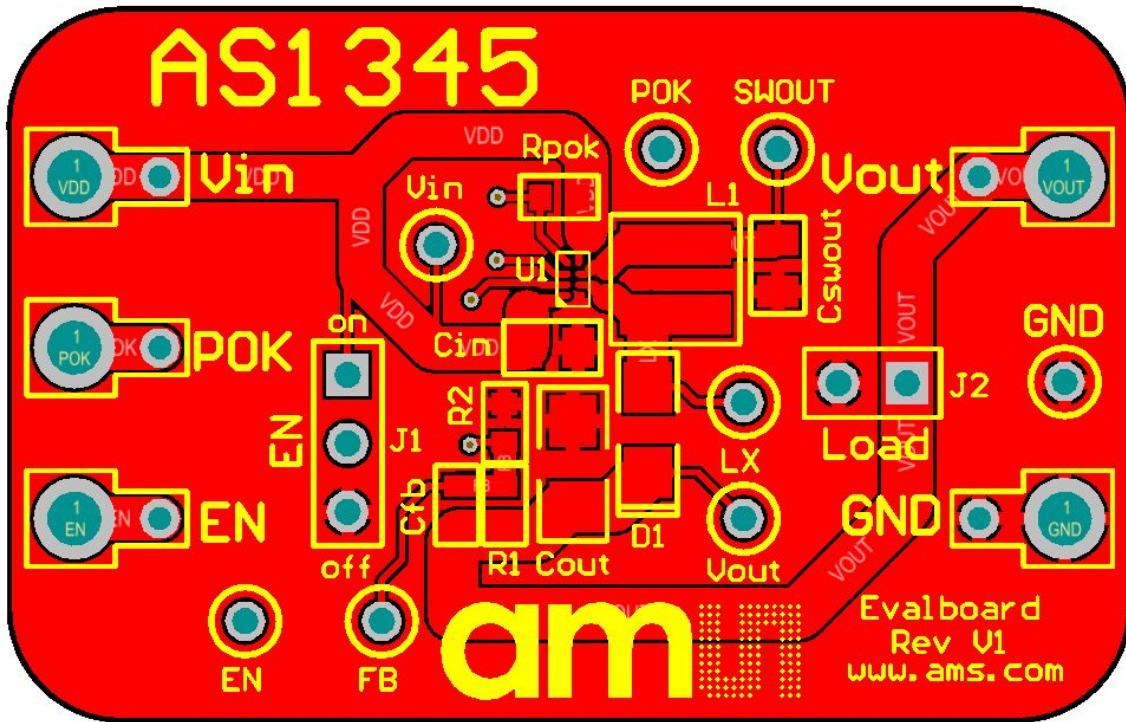


Figure 4: AS1345 Evaluation Board BOTTOM Layer

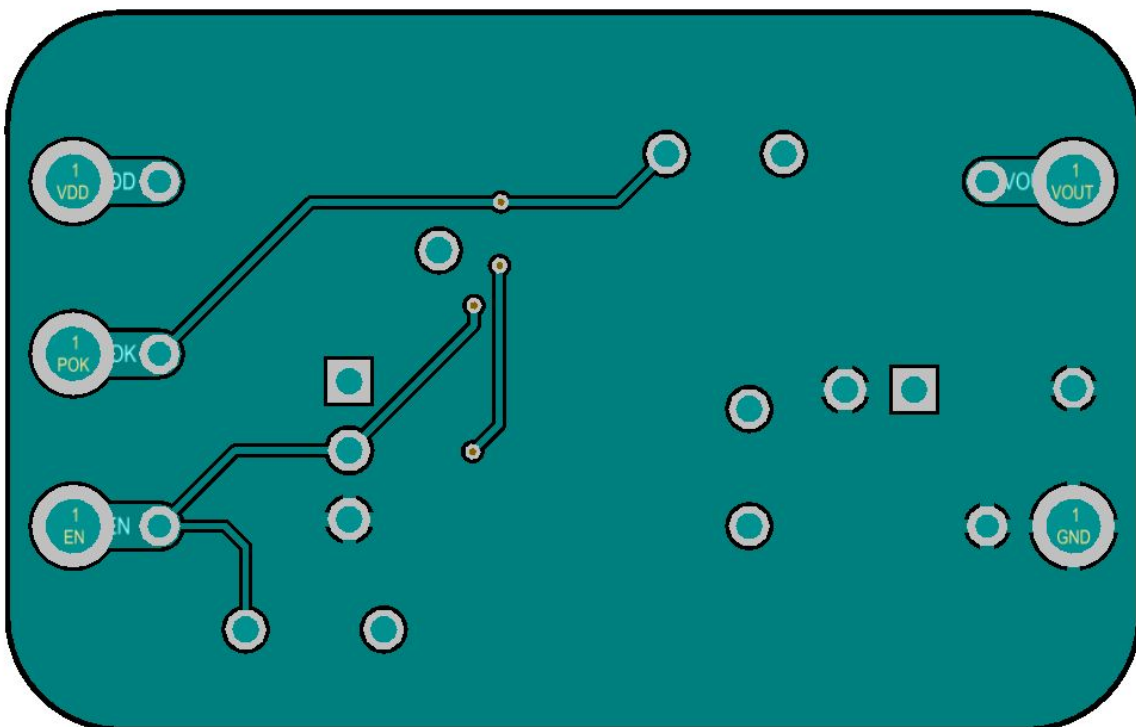




Figure 5: AS1345 Evaluation Board BOM

Bill of Materials			AS1345_Evalboard_WLP_1V0			
Company:		ams AG				
Originator:		tka				
PCB Name:		AS1345_Evalboard_WLP_1V0				
PCB Version:		1V0				
Report Date:		12.12.2012				
#	Designator	Comment	Part Description	Manufacturer	Manufacturer Part Number	Quantity
1	C1b	47p	MURATA - GRM1885C1H470JA01D - KONDENSATOR, 0603, 47PF, 50V	MURATA	GRM1885C1H470JA01D	1
2	Cin, Cswout	10u	MURATA - GRM21BR71A106KE51L - CAPACITOR, 0805, X7R, 10V, 10UF	MURATA	GRM21BR71A106KE51L	2
3	Cout	10u	MURATA - GRM31CR61E106KA12L - CAPACITOR, 1206, X5R, 25V, 10UF	MURATA	GRM31CR61E106KA12L	1
4	D1	MBR0540	FAIRCHILD SEMICONDUCTOR - MBR0540 - SCHOTTKY RECTIFIER, 500mA, 40V, SOD-123	FAIRCHILD SEMICONDUCTOR	MBR0540	1
5	J1, J2	Jumper3_THMD, Load	FISCHER ELEKTRONIK - SL1112436G - STIFTLISTE, 36POL, 2.54MM PASTER	FISCHER ELEKTRONIK	SL1112436G	2
6	L1	10uH/0.6A	LPS3015-103MLC	Coilcraft	LPS3015-103MLC	1
7	R1	R_0603	MULTICOMP - MC0.063W06031%1M10 - RESISTOR, 0603, 1M1, 1%	MULTICOMP	MC0.063W06031%1M10	1
8	R2, Rpok	100k, R_0603	MULTICOMP - MC 0.063W 0603 1% 100K - WIDERSTAND, 0603 100K	MULTICOMP	MC 0.063W 0603 1% 100K	2
9	TP1, TP3, TP4	EN, Vin, Vout	VERO - 20-313137 - LÖTSTÜTZPUNKT ROT BIS MAX 475 100ST	VERO	20-313137	3
10	TP2, TP5, TP6, TP7	FB, LX, POK, SWOUT	VERO - 20-313139 - LÖTSTÜTZPUNKT WEISS BIS MAX 475 100ST	VERO	20-313139	4
11	TP8	GND	VERO - 20-2137 - LÖTSTÜTZPUNKT SCHWARZ BIS MAX 475 100ST	VERO	20-2137	1
12	U1	AS1345_WLP	AS1345w-BwLT-AD	ams AG	AS1345w-BwLT-AD	1
Approved			Notes			20

5 Ordering Information

The AS1345 Evaluation Kit can be ordered via www.ams.com.

Figure 6: Ordering Information

Ordering Code	Description
AS1345A-AD	AS1345A-BWLT-AD Evalboard Rev1.0
AS1345B-AD	AS1345B-BWLT-AD Evalboard Rev1.0
AS1345C-AD	AS1345C-BWLT-AD Evalboard Rev1.0
AS1345D-AD	AS1345D-BWLT-AD Evalboard Rev1.0

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