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**Eval Kit Manual**

# **AS1313**

**Standard Board**

**AS1313-TD-xx\_EK\_ST**

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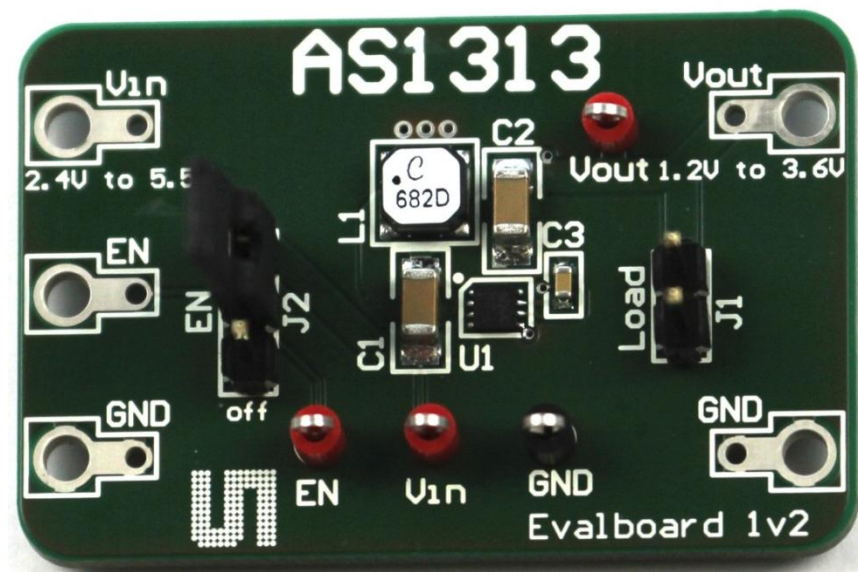
## 1 Introduction

This document describes the AS1313 Evaluation Kit.

The AS1313 is an ultra-low quiescent current hysteretic step-down DC-DC converter optimized for light loads and with efficiencies of up to 95%.

### 1.1 Kit Content

Figure 1: Kit Content



Item	Comment
AS1313 Evaluation Board 1v2	Ultra Low Quiescent Current, DC-DC Step Down Converter



## 2 Getting Started

Drive the AS1313 Step-Down DC/DC Converter only with the recommended settings and values as described in the datasheet.

Please check [www.ams.com](http://www.ams.com) for the latest version.

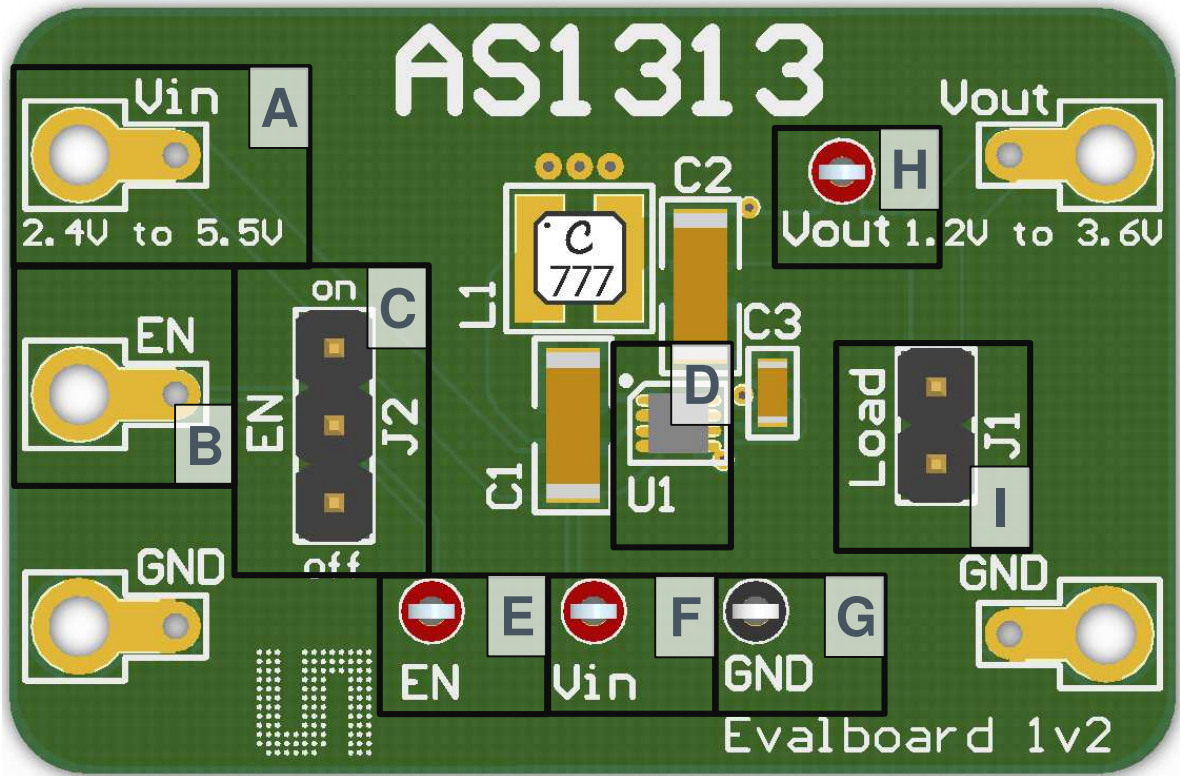
A detailed overview of AS1313 Evaluation Board is given in chapter 3, [Hardware Description](#).

## 3 Hardware Description

The Evaluation Board has to be supplied via the pins VIN and GND in the range of 2.4V up to 5.5V. The jumper “EN”, section C in the picture below, must be set to “on” (upwards) in order to enable the chip. AS1313 supports output voltages between 1.2V and 3.6V and besides the current range of standard variants, any variant with output in 50mV steps are available. The AS1313 is available in an 8-pin MLPD (2mm x 2mm) and a 6-pin WL-CSP (0.4mm pitch).

The offered output voltage and package versions of AS1313 Evaluation Kit are stated under chapter 4, [Ordering & Contact Information](#).

Figure 2: Evaluation Board Overview



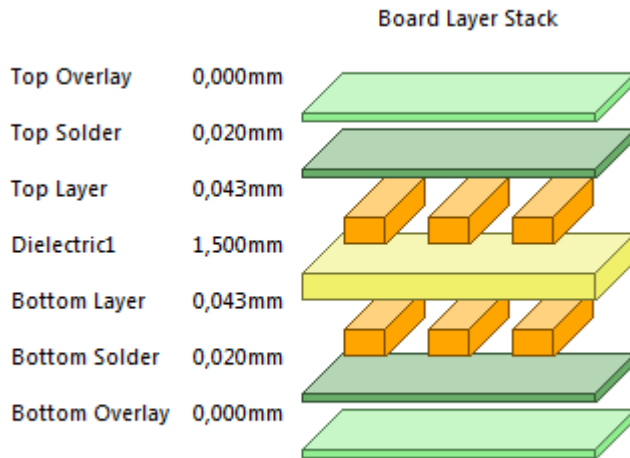
Jumper and device locations

Label	Name	Designator	Description	Info
A	Vin	-	Supply	Voltage Range from 2.4V to 5.5V
B	EN	-	Enable	Active-High Enable Input. A logic low on this pin shuts down the device and reduces the supply current to max. 100nA. "EN" Jumper (J2) must be removed in case this connector is controlled by external signals!
C	EN	J2	Enable ON/OFF	Enable/disable the chip
D	AS1313	U1	8-pin MLCPD (2mm x 2mm) package	Ultra Low Quiescent Current, DC-DC Step Down Converter
E	EN	-	Measuring pin	-
F	Vin	-	Measuring pin	-
G	GND	-	Measuring pin	-
H	Vout	-	Measuring pin	-
I	Load	J1	Load connector	Designated for load connection

## 4 Schematics, Layers and BOM

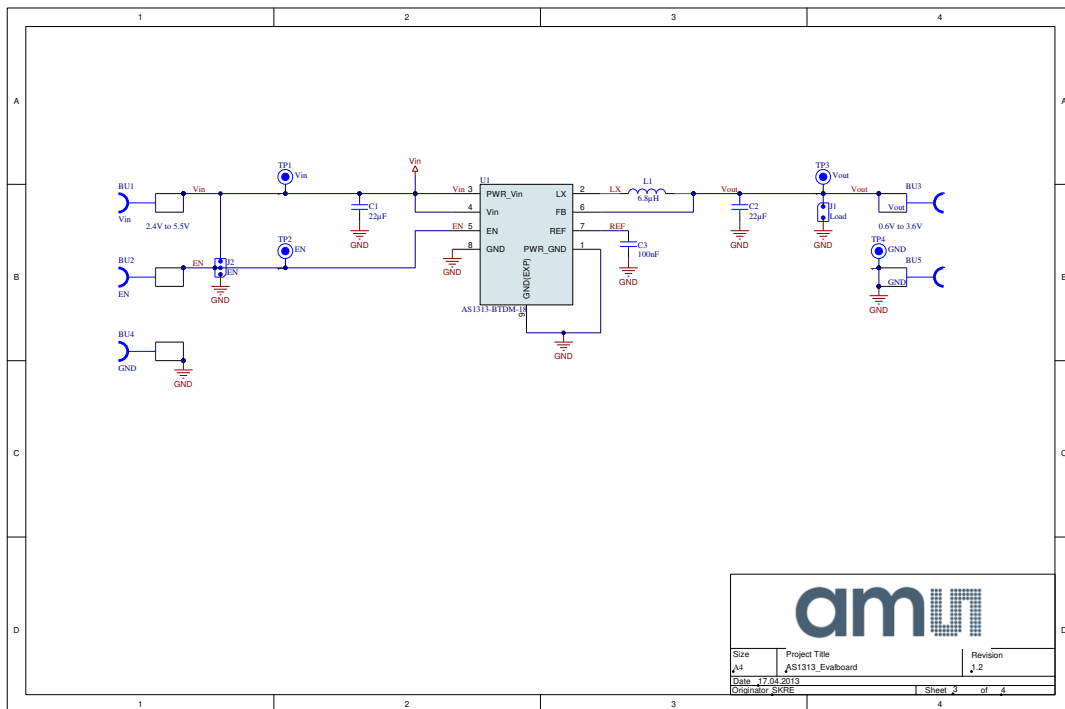
The AS1313 Evaluation Board is a 2-layer FR4 board.

Figure 3: AS1313 PCB Layer Stack up



### 4.1 Schematic of AS1313 Evaluation Board

Figure 4: Schematic



## 4.2 Layers of AS1313 Evaluation Board

Figure 5: Top Layer

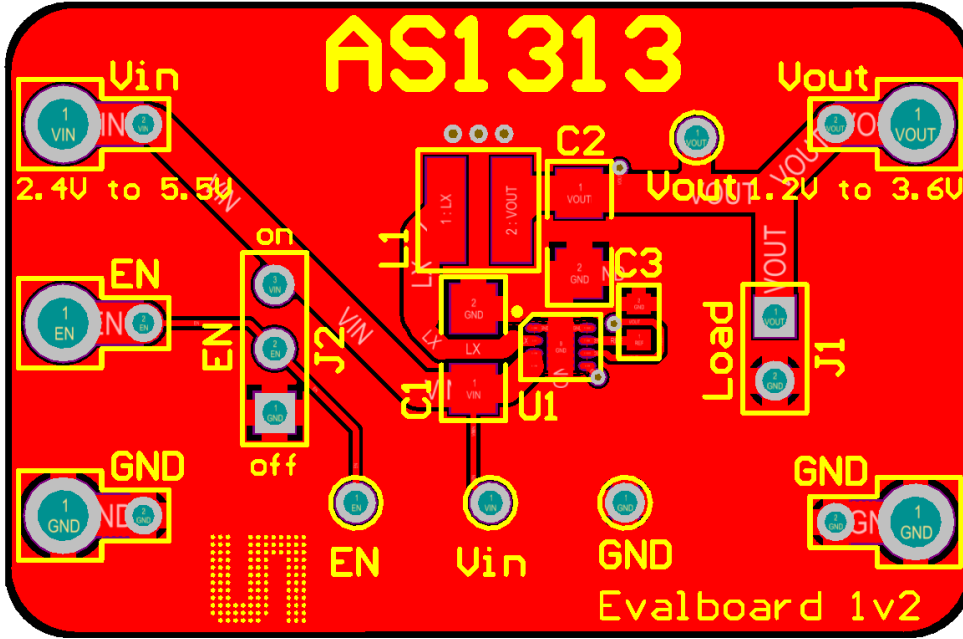
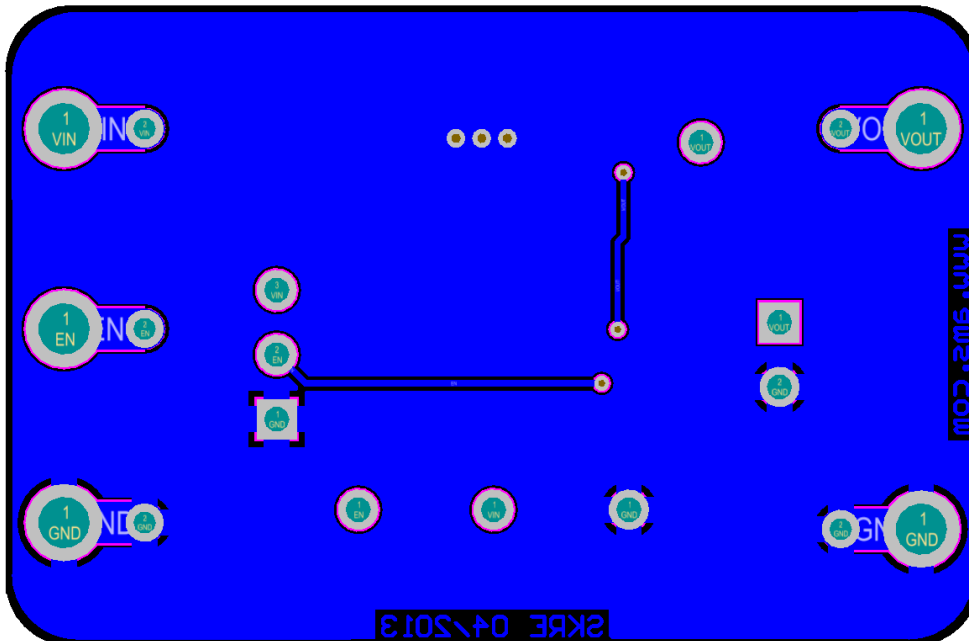


Figure 6: Bottom Layer





### 4.3 BOM

Figure 7: Bill of Material

Bill of Materials		AS1313_Evalboard				ams
Company:		ams AG				
Originator:		SKRE				
PCB Name:		AS1313_Evalboard				
PCB Version:		1.2				
Report Date:		17.04.2013				
#	Designator	Comment	Component Description	Manufacturer	Manufacturer Part Number	Quantity
1	C1, C2	22µF	MURATA - GRM319R61A226ME15D - CAPACITOR, 1206, 22UF, 10V	MURATA	GRM319R61A226ME15D	2
2	C3	100nF	MURATA - GRM188R71C104KA01D - CAPACITOR, 0603, X7R, 16V, 100NF	MURATA	GRM188R71C104KA01D	1
3	J1, J2	Load, EN	FISCHER ELEKTRONIK - SL11 124 36G - HEADER, 36PIN, 2.54MM PITCH	FISCHER ELEKTRONIK	SL11 124 36G	2
4	L1	6.8µH	COILCRAFT - LPS4018-682MLB - POWER INDUCTOR 6.8UH, 1.5A, 0%.50MHZ	COILCRAFT	LPS4018-682MLB	1
5	TP1, TP2, TP3	Vin, EN, Vout	VERO - 20-313137 - RED BEAD TERMINAL ASSY FOR 1.02mm hole	VERO	20-313137	3
6	TP4	GND	VERO - 20-2137 - BLACK BEAD TERMINAL ASSY FOR 1.02mm hole	VERO	20-2137	1
7	U1	AS1313	ULTRA LOW QUIESCENT CURRENT, DC-DC STEP DOWN CONVERTER	ams	AS1313-BTDM-18 or AS1313-BTDM-30	1
Approved		Notes				11

## 5 Ordering & Contact Information

Ordering Code	Description
AS1313-TD-xx_EK_ST	AS1313 Eval Kit Standard Board On request
AS1313-TD-18_EK_ST	AS1313 Eval Kit Standard Board Vout = 1.8V Version
AS1313-TD-30_EK_ST	AS1313 Eval Kit Standard Board Vout = 3.0V Version

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## 7 Revision Information

Changes from 1-00 (2014-) to current revision 1-01 (2014-Jul)	Page
Update to latest ams design	all

**Note:** Page numbers for the previous version may differ from page numbers in the current revision.