Application Note: AN01 – Evalboard Description

AS1312

Ultra Low Quiescent Current, Hysteretic DC-DC Step-Up Converter

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3. Getting Started

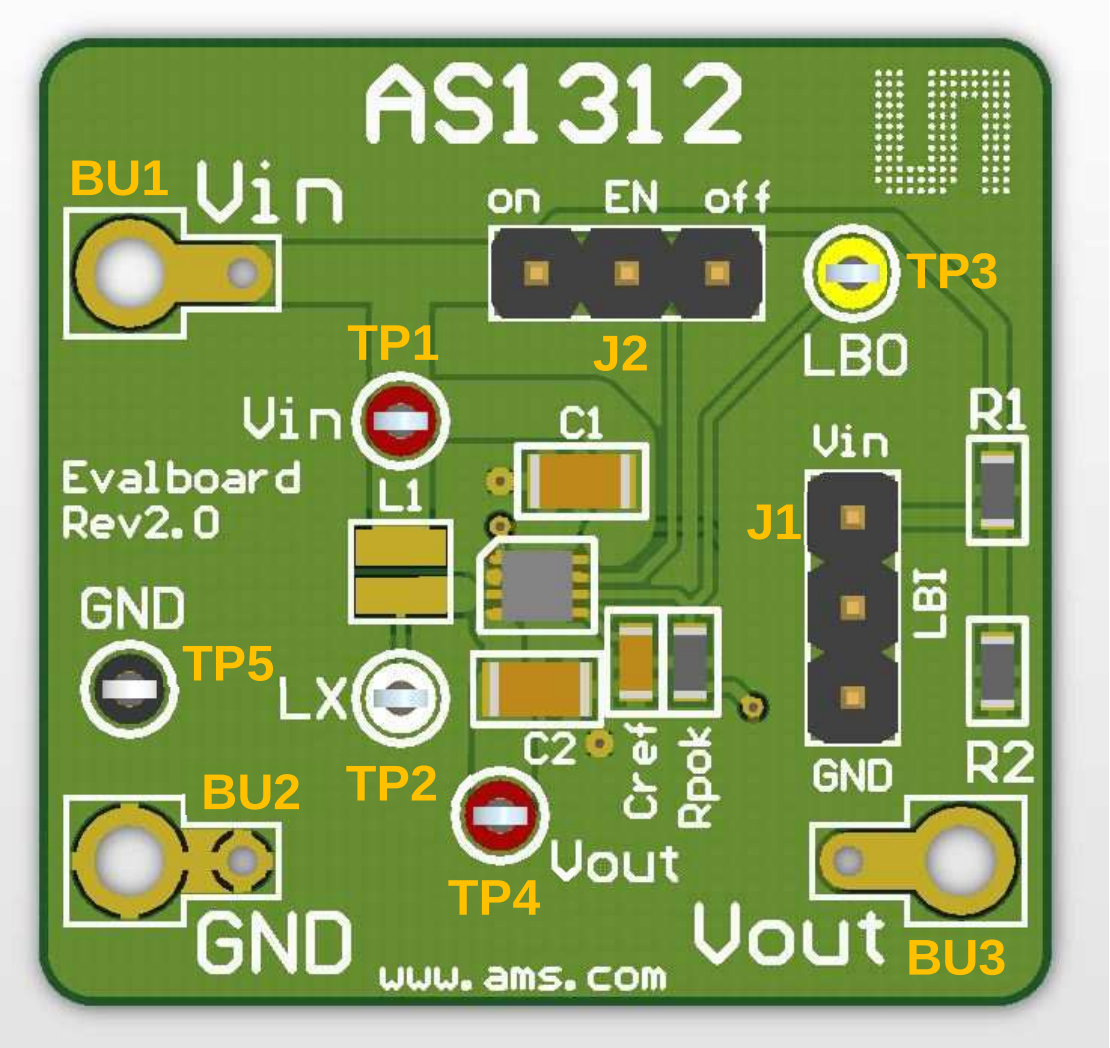
The AS1312 Evalboard is designed to work with all available AS1312 versions. On this Evalboard the AS1312-BTDT-50 variant is mounted.

For testing the board, please connect a supply voltage (0.7V to 5.0V) between Vin and GND. Set EN (J2) to “on” and the Vout of 5.0V are measureable at TP4 (Vout). When connecting a load to Vout, please use the Vout connector (BU3).

For POK feature, please set LBI (J1) to “GND”. In this case, the LBO is related to the Vout and stays high as long as the Vout is higher than 92.5% of its nominal value.

For input voltage monitoring, set LBI (J1) to “Vin”. In this case, the LBO stays high as long as the voltage on LBI is higher than the threshold of 0.6V. With the resistor divider R1/R2 (not mounted) it´s possible to select a specific Vin threshold.

4. HW – Overview:



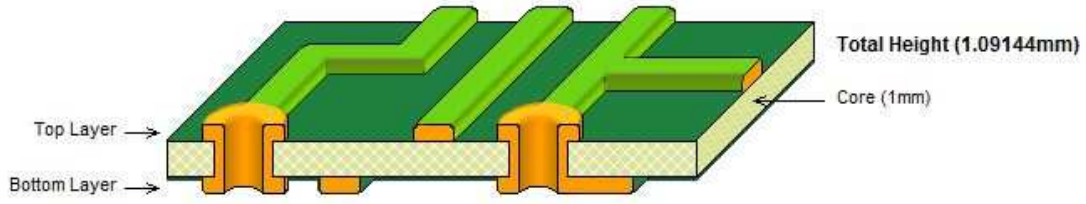
4.1.Jumper and device locations

Label	Name	Description	Info
BU1	Vin	Input voltage	connect the pos terminal of the supply voltage
BU2	GND	GND	connect the neg terminal of the supply voltage
BU3	Vout	Output voltage	for connecting a load to the output voltage
J1	LBI	Low Battery Input	• ***Vin***: The LBI monitors Vin via a resistive divider → LBO goes low, if LBI threshold (0.6V) is reached • ***GND***: The LBI is connected to GND → LBO works like a POK • This jumper may not be left floating
J2	EN	Enable	• ***on***: The AS1312 is enabled • ***off***: The AS1312 is disabled
TP1	Vin	Input voltage	measurement point
TP2	LX	external coil	measurement point
TP3	LBO	LBO/POK output	measurement point
TP4	Vout	Output voltage	measurement point
TP5	GND	GND	measurement point

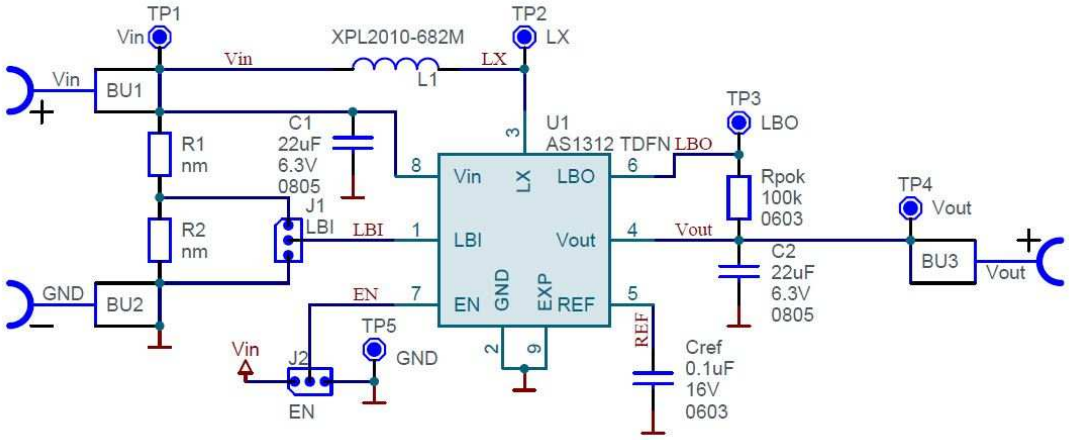
4.2.AS1312 Evalboard BOM

Designator	Function	Part Description	Manufacturer	Part Number
C1	input cap	22uF/6.3V/X5R/0805	Murata	GRM21BR60J226ME39L
C2	output cap	22uF/6.3V/X5R/0805	Murata	GRM21BR60J226ME39L
Cref	reference cap	100nF/6.3V/X7R/0603	Murata	GRM188R71C104KA01D
L1	coil	6.8uH/725mA/336mΩ	Coilcraft	XPL2010-682M
Rpok	POK pull-up	100kΩ/63mW/5%/0603	Multicomp	MC 0.063W 0603 1% 100K

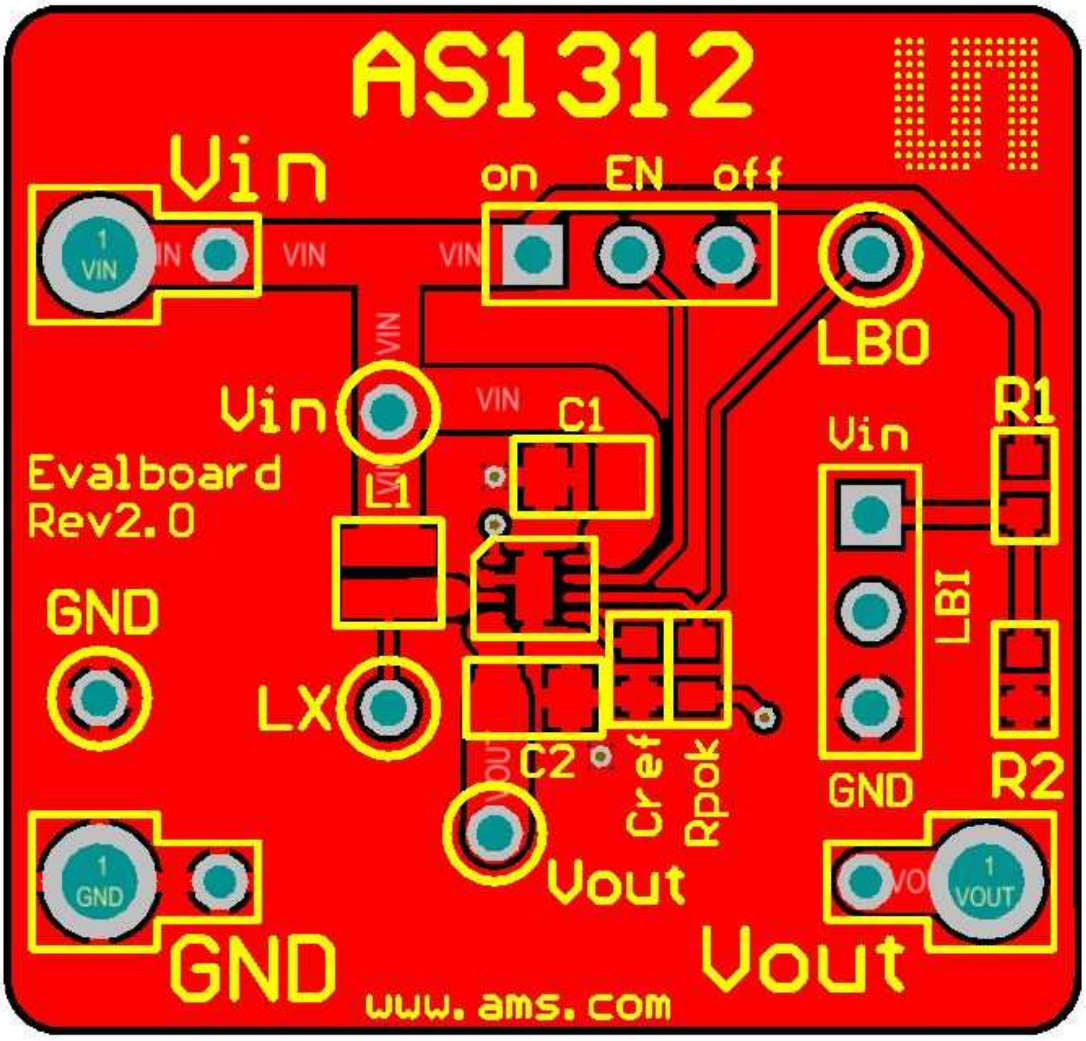
5. PCB Layer Stackup

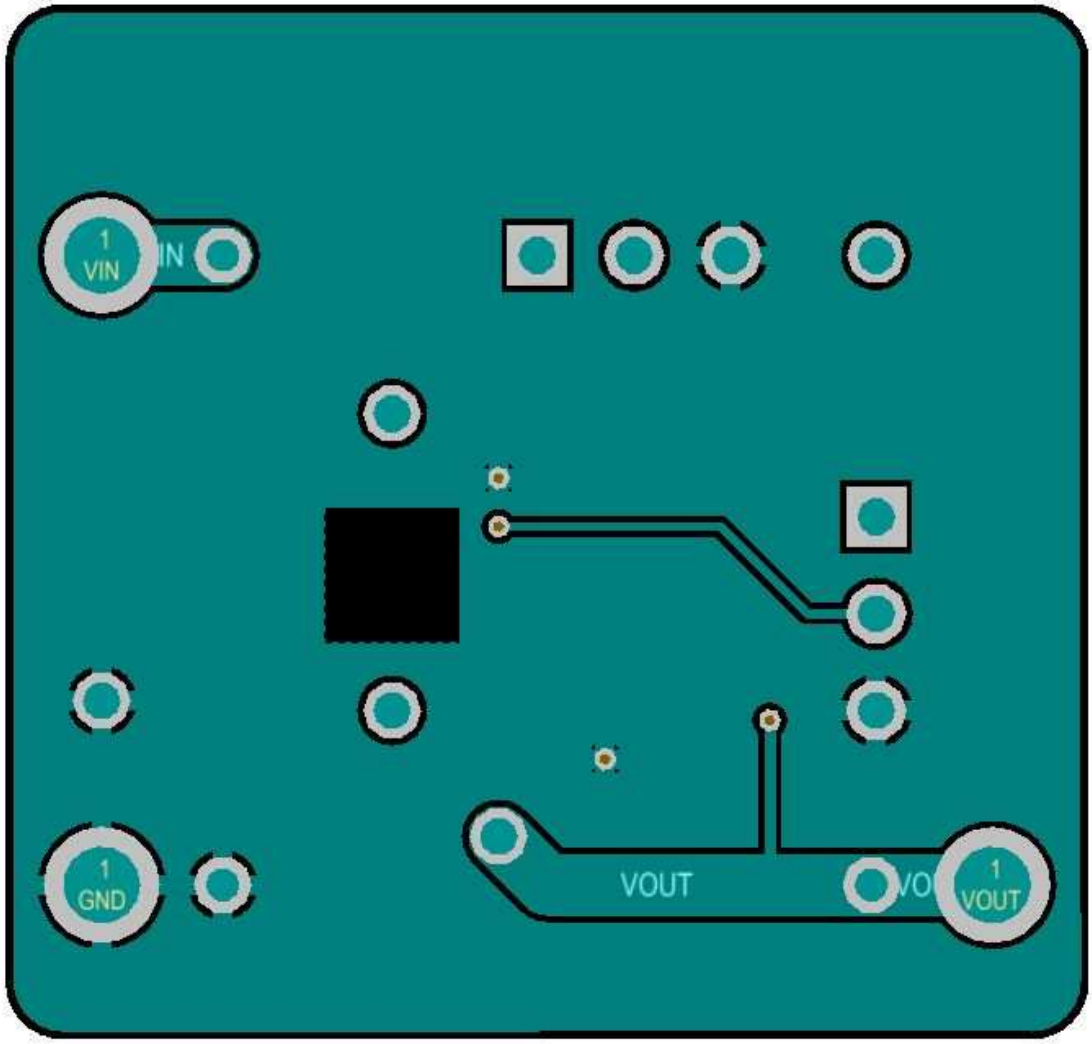


6. Demoboard Schematic



7. Demoboard Layout




1
VIN
IN
1
GND
VOUT
VO
1
VOUT

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Contact Information

Headquarters

ams AG
Tobelbader Strasse 30
8141 Unterpremstaetten
Austria
T. +43 (0) 3136 500 0
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