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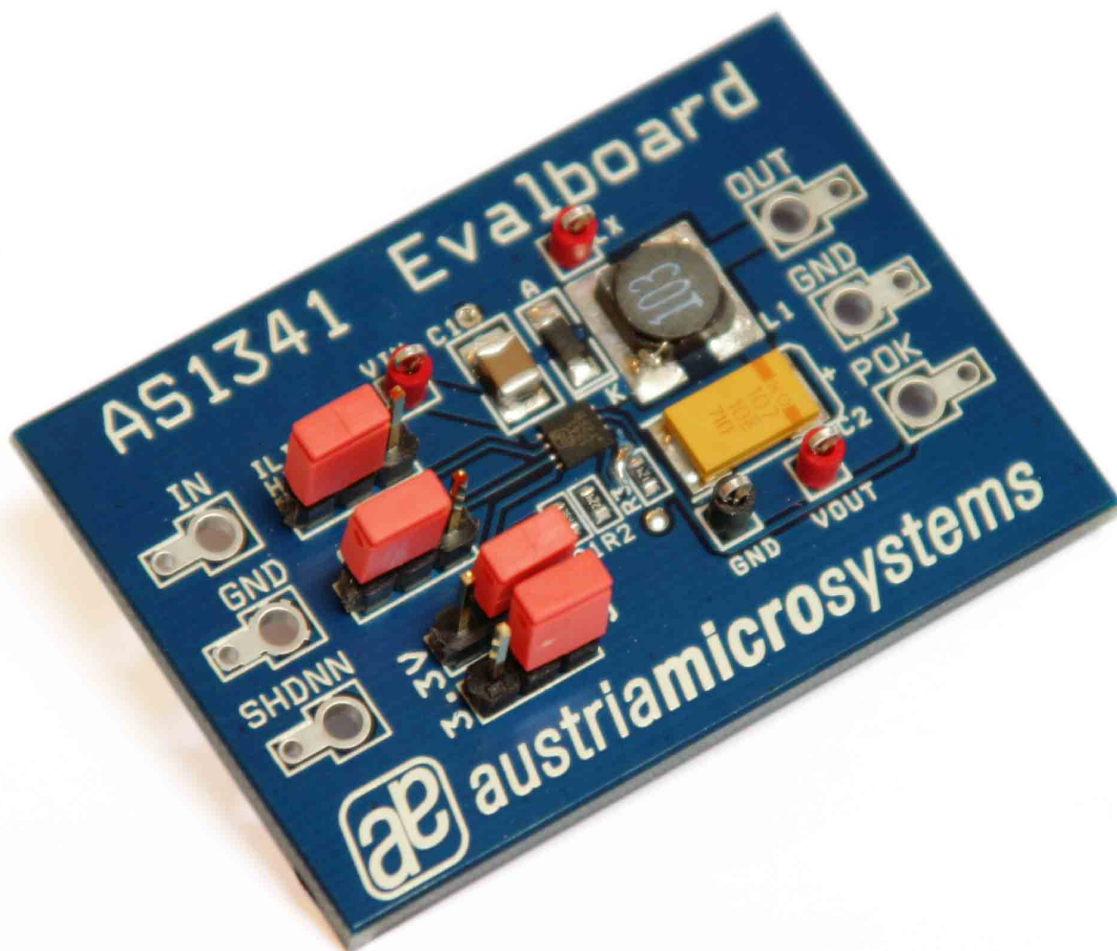
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AS1341

Evaluation Board Application Note



General Description

Board Description

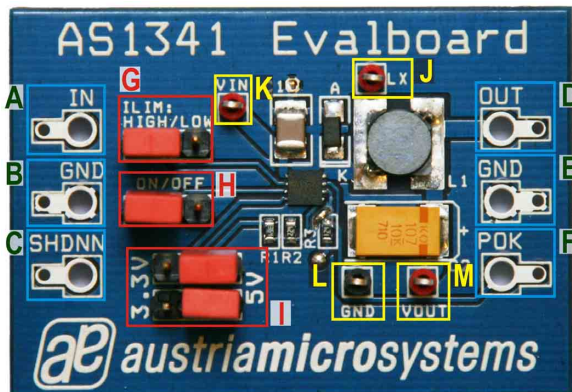


Figure 1: Board Description

Connector Description

Label	Name	Description	Info
A	VIN	Input Voltage	Input voltage ranging from 4.5V to 20V
B	GND	Ground	
C	SHDNN	Enable Jumper	
D	OUT	Power Output Connector	
E	GND	Ground	
F	POK	Power-OK Signal	

Jumper Description

Label	Name	Description	Info
G	ILIM: HIGH/LOW	Current Limiter	<input type="checkbox"/> LOW ILIMIT: 0.7A <input type="checkbox"/> HIGH ILIMIT: 1.4A
H	ON/OFF	Enable Jumper	<input type="checkbox"/> ON <input type="checkbox"/> OFF
I	3.3V 5V		

Measurement Points Description

Label	Name	Description	Info
J	LX	External Conductor	
K	GND	Power Supply Connectors for VBATT and Ground.	
L	VIN	Power Supply Connectors for VBATT and Ground.	
M	OUT	Power Output Connector	

Operational sequence

This evaluation board comes with the AS1341.

1. If not present get the [datasheet](#) for the [AS1341](#) from www.austriamicrosystems.com. Drive the IC on the Demoboard only with the recommended settings and values as described in the datasheet.
2. Connect a 4.5V to 20V power supply (VIN “A” and GND “B”).
3. Perform measurements at the measurement points “J” to “K”.

If there are questions do not hesitate to contact us. See contact information at the end of the application note.

Optional Features

Setting the output voltage

The AS1326 has a default output voltage of 3.3V. Additionally the output voltage can be set between 2.5 and 5V via an additionally resistor R1 which can be placed at “P”. The required resistor value for a certain output voltage can be calculated as shown in equation 1.

$$R1=R2*(V_{OUT}/V_{FB}-1) \text{ (Eq1)}$$

$$R1=270k\Omega*(V_{OUT}/1.24V-1) \text{ (Eq2)}$$

Using the current limiter

The ISET pin is used to adjust the inductor current limit and to implement the soft-start feature. With pin ISET connected to pin REF, the inductor current limit is set to 1.6A. With ISET connected to a resistor-divider network from pin REF to GND, the current limit is calculated as:

$$I_{LIMIT}=1.6A*RSS2/(RSS+RSS2) \text{ (Eq3)}$$

$$I_{LIMIT}=1.6A*RSS2/(220k\Omega+RSS2) \text{ (Eq4)}$$

Setting the soft-start

On default the soft-start feature is disabled. The soft-start feature can be implemented by placing a resistor RSS (already soldered) between pin ISET and pin REF and a capacitor CSS between pin ISET and GND. At power-up, ISET is 0V and the LX current is

$$t_{ss}=RSS*CSS \text{ (Eq5)}$$

$$t_{ss}=220k\Omega*CSS \text{ (Eq6)}$$

If the current limiter resistance is also in use, the equation for the soft-start time would be:

$$t_{ss}=(RSS*RSS2/(RSS+RSS2))*CSS \text{ (Eq7)}$$

$$t_{ss}=(220k\Omega*RSS2/(220k\Omega+RSS2))*CSS \text{ (Eq8)}$$

Layout of evaluation board

Board schematics and layout

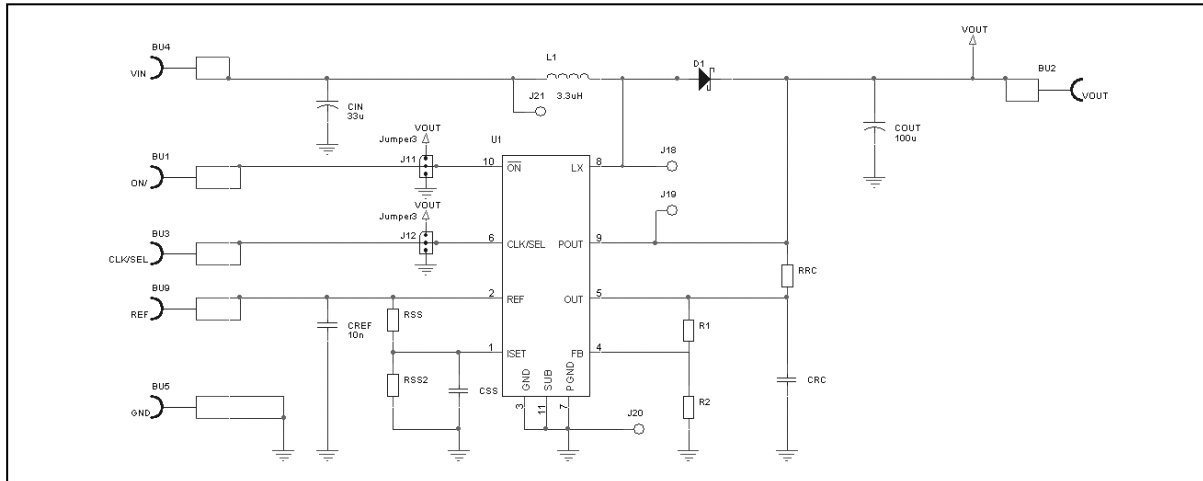


Figure 3: Schematics

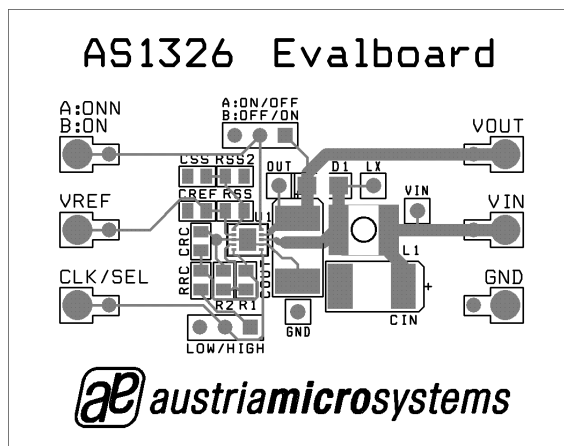


Figure 4: Top view

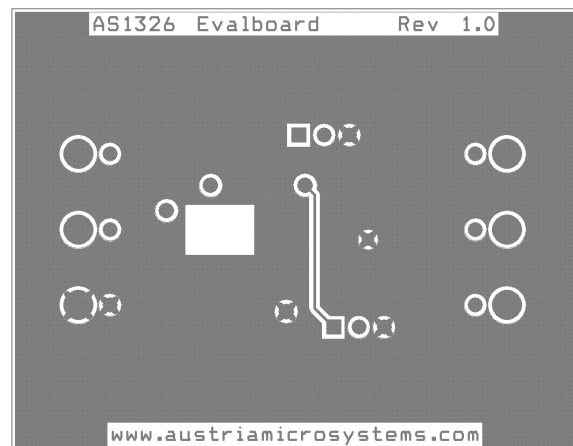


Figure 5: Bottom view

Assembly List

Label	Info	Type	Manufacturer
CIN	33µF, ±10%, 10V, 150mΩ	TPSC336K010R0150	AVX
COUT	100µF, ±10%, 10V, 50mΩ	T495D107M010ATE050	Kemet
	or 82µF, ±20%, 6.3V, 18mΩ	A700V826M006ATE018	Kemet
L1	3.3µH, 46mΩ, 1.8A	MOS6020-332	Coilcraft
RSS	220kΩ		
R1	270kΩ		
RCC	10Ω		
CRC	330nF		
RCC	10nF		

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