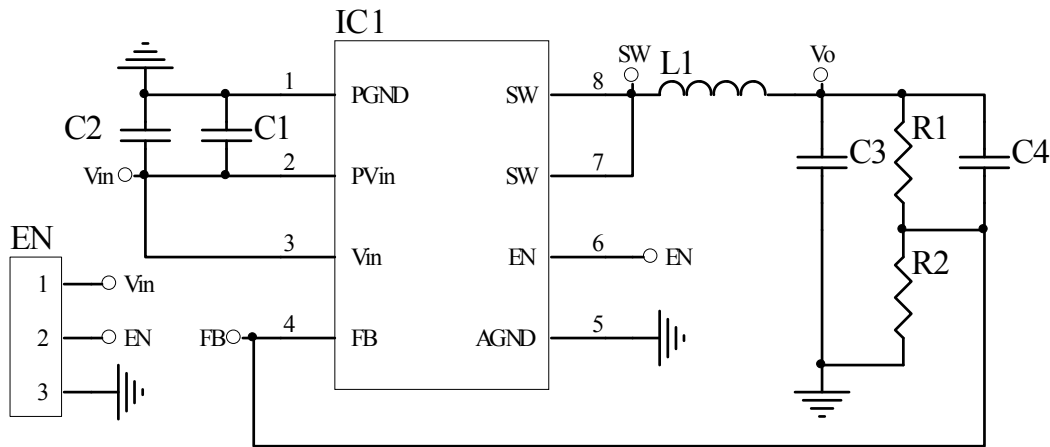


3. Key Features

- 2A Maximum Output Current
 - Tiny 0.47 μ H Chip Inductor
 - Excellent Transient Response
 - Input Voltage: 2.7V to 5.5V
 - Ultra-small, Low Profile 8-pin 2mm x 2mm TDFN Package
 - Fixed or Adjustable Output Voltage
- Options:
- Fixed Output Voltage: 1.2V
 - Adjustable Output Voltage: 1.0V to 3.3V
- High Efficiency with 3MHz Switching Frequency
 - 55 μ A No Load Quiescent Current
 - 100% Duty Cycle Low-Dropout Operation
 - Internal Soft Start
 - Over-Temperature and Current Limit Protection
 - <1 μ A Shutdown Current
 - -40 $^{\circ}$ C to 85 $^{\circ}$ C Temperature Range
 - Pb-Free/Halogen Free Package
 - RoHS/REACH Compliant

4. EV Board Schematic

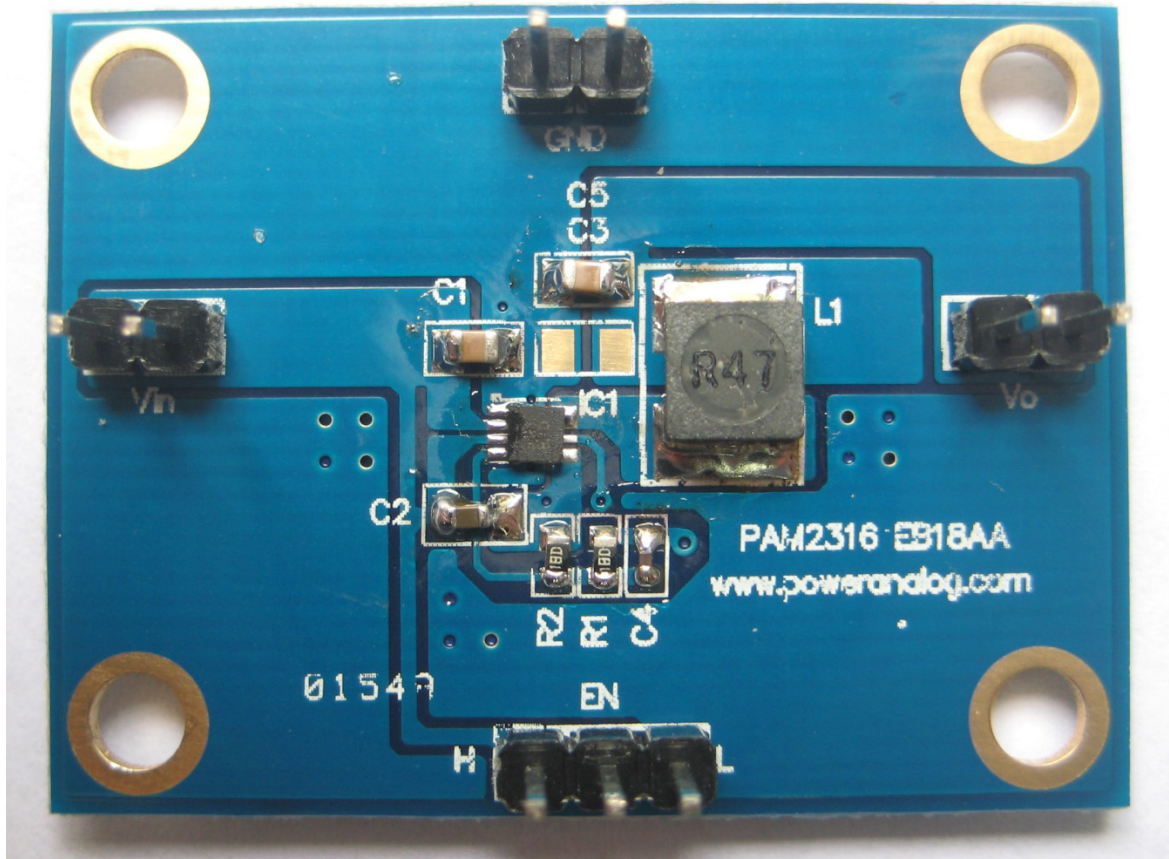


5. EVB PAM2316 EB18AAA Description

PAM2316 EB18AA is an evaluation board for the PAM2316 8pin 2mm x 2mm TDFN, a DC/DC converter. The board is targeted to be used in providing a simple and convenient evaluation environment for the PAM2316. Requires parts, power supply connectors etc. on the board, which makes it easy to be evaluated.

6. EV Board View

Top View



7. Resistor Select for Output Voltage Setting

$$V_{OUT} = (1 + R1/R2) \times V_{REF} \quad (V_{REF} = 0.6V)$$

Vo	R1	R2	L
1.2V	150k	150k	0.47μH
1.5V	225k	150k	0.47μH
1.8V	300k	150k	0.47μH
2.5V	475k	150k	1.0μH
3.3V	680k	150k	1.0μH

8. External Components Selection

Input & output Capacitors (C1, C2, C3)

- (1) For lower output ripple, low ESR is required.
- (2) Low leakage current needed, X5R/X7R ceramic recommend, multiple capacitor parallel connection.

Feed forward capacitor (C4)

- (1) Lower the output ripple
- (2) Low leakage current needed, 100pF, COH/CH ceramic recommend

Output Voltage programmer resistors (R1, R2)

- (1) For programmer output voltage
- (2) For accurate output voltage, 1% tolerance is required.

Inductor (L1)

- (1) Low DCR for good efficiency
- (2) Inductance saturate current must higher than the output current

9. Evaluation Board BOM List:

Item	Value	Type	Rating	Description	Vender and Part No.
C1	10 μ F	X5R/X7R, Ceramic/0805	10V	Input Coupling CAP	TAIYO YUDEN EMK212ABJ106KD-T
C2	1 μ F	X5R/X7R, Ceramic/0603	25V	Input Coupling CAP	TAIYO YUDEN TMK107 BJ105KA-T
C3	10 μ F	X5R/X7R, Ceramic/0805	10V	Output CAP	TAIYO YUDEN EMK212ABJ106KD-T
C4	100pF	COH/CH, Ceramic/0402	50V	Feed Forward CAP	TAIYO YUDEN UMK105CH101JV-F
L1	0.47 μ H		>3A	Inductor	74404300047 Wurth
R1	150K	0603	1%	Voltage Set RES	
R2	150K	0603	1%		
IC1		PAM2316	TDFN 2 x 2 8pin		
PCB		PAM2316 EB18AA			

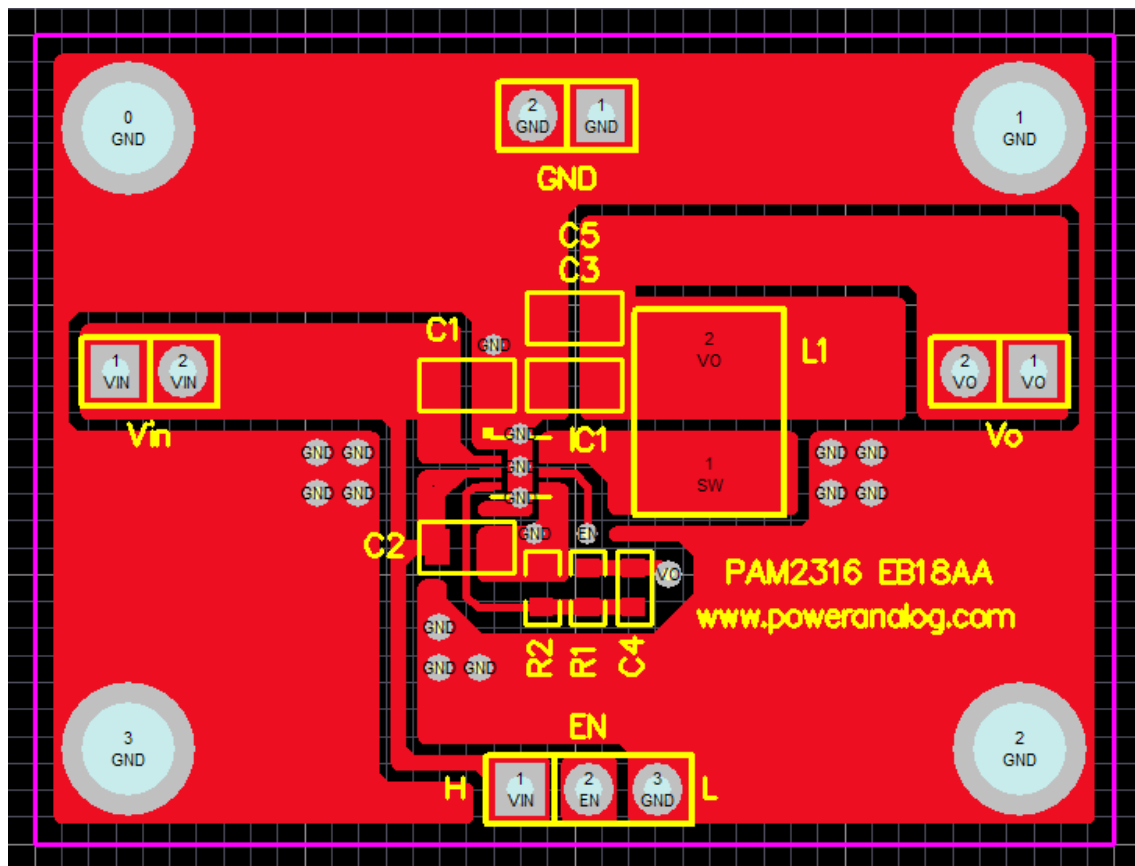
10. PCB Layout Guideline

The following guidelines should be used to help ensure a proper layout:

- 1). The input capacitor should be close to IC as close as possible.
- 2). Must put a small decoupling capacitor between Vin Pin and AGND Pin.
- 3). Minimize the switching loop area to avoid excessive switching noise.
- 4). AGND and PGND should connect at input capacitor GND.
- 5). For the good thermal dissipation, PAM2316 has a heat dissipate pad in the bottom side, it should be soldered to PCB surface. For the copper area can't be large in the component side, so we can use multiple vias connect to other side of the PCB.

11. PCB Layout Example

Top Layer



Bottom Layer

