

Output Voltage

The output voltage on the MIC4721 evaluation board is adjustable. The output voltage is controlled by the feedback resistors (R1 and R2) and can be calculated as follows:

$$V_{OUT} = V_{REF} \times \left(1 + \frac{R1}{R2}\right)$$

Where $V_{REF} = 1V$.

The evaluation board is preset at 1.8V, but can easily be modified by removing R2 and replacing it with the value that yields the desired output voltage. (Removing R2 sets the output to 1V).

$$R2 = \frac{R1 \times V_{REF}}{V_{OUT} - V_{REF}}$$

For $V_{REF} = 1V$, this reduces to:

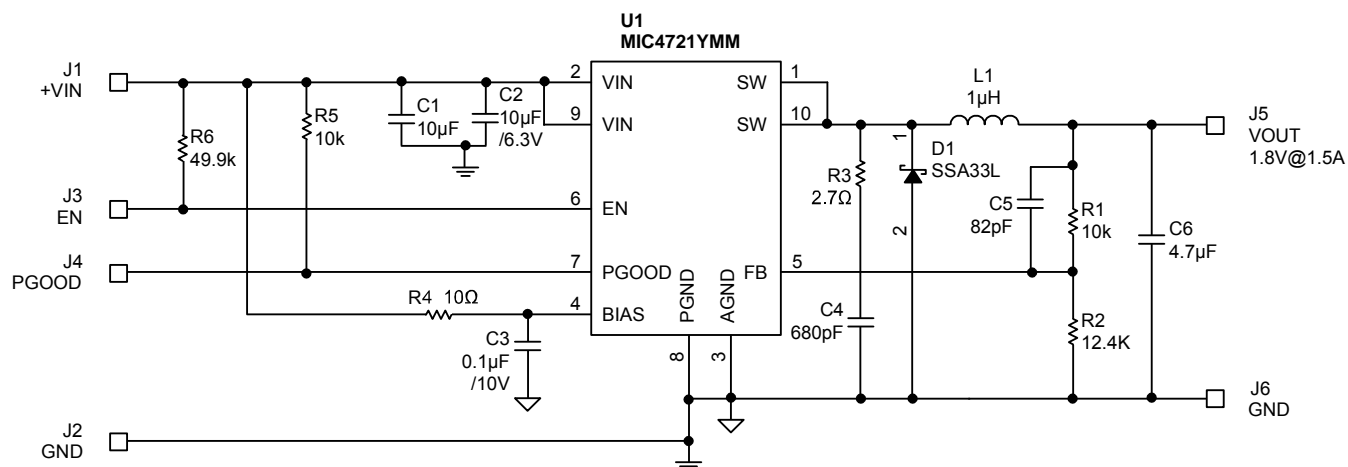
$$R2 = \frac{R1}{V_{OUT} - 1}$$

Power OK

The POK pin is pulled up to V_{IN} through a pull up resistor and is asserted low when V_{OUT} is within the regulation band. An external connection on the board provides easy access to the POK pin.

Ordering Information

Part Number	Description	Package
MIC4721YMM	IC	10-Pin MSOP
MIC4721YMM EV	Evaluation Board	10-Pin MSOP



Bill of Materials

Item	Part Number	Manufacturer	Description	Qty.
C1, C2	C1608 X5R0J106K	TDK ⁽¹⁾	10μF Ceramic Capacitor X5R 6.3V	2
	GRM188R61A106K	Murata ⁽²⁾	10μF Ceramic Capacitor X5R 10V	
	08056D106MAT	AVX ⁽³⁾	10μF Ceramic Capacitor X5R 6.3V	
	JMK107BJ106MA-T	Taiyo Yuden ⁽⁴⁾	10μF Ceramic Capacitor X5R 6.3V	
C3	VJ0402Y104KXQCW1BC	Vishay ⁽⁵⁾	0.1μF Ceramic Capacitor X7R 10V	1
	C1005X7R1A104K	TDK ⁽¹⁾	0.1μF Ceramic Capacitor X7R 10V	
	0402ZD104MAT	AVX ⁽³⁾	0.1μF Ceramic Capacitor X5R 10V	
C4	VJ0402A681KXXCW1BC	Vishay ⁽⁵⁾	680pF Ceramic Capacitor NPO 10V	1
	C1005COG1A681J	TDK ⁽¹⁾	680pF Ceramic Capacitor 10V	
C5	VJ0402A82KXXCW1BC	Vishay ⁽⁵⁾	82pF Ceramic Capacitor NPO 10V	1
	C1005COG1A820J	TDK ⁽¹⁾	82pF Ceramic Capacitor 10V	
C6	C1608X5R0J475K	TDK ⁽¹⁾	4.7μF Ceramic Capacitor X5R 6V	1
	06036D475MAT	AVX ⁽³⁾		
	JMK107BJ475MA-T	Taiyo Yuden ⁽⁴⁾		
	GRM188R60J475KE19D	Murata ⁽²⁾		
D1	SSA33L	Vishay ⁽⁵⁾	3A Schottky 30V	1
	MBRM330-13	Diodes, Inc. ⁽⁶⁾		
L1	CDRH3D23MN-1R0NC	Sumida ⁽⁷⁾	1μH Inductor 2A 3.92x3.92mm	1
	SDH3812-1R0-R	Cooper ⁽⁸⁾	1μH Inductor 2A	
	LTF5022T-1R2N4R2	TDK ⁽¹⁾	1.2μH Inductor 4.3A ±30%	
	IHLP2525AHER1R0M01	Vishay ⁽⁵⁾	1μH Inductor 7A	
R1, R5	CRCW04021002FKEYE3	Vishay Dale ⁽⁵⁾	10k 1% 0402 1/16W	2
R2	CRCW04021242FKEYE3	Vishay Dale ⁽⁵⁾	12.4k 1% 0402 1/16W	1
R3	CRCW04022R70FKEYE3		2.7Ω 1% 0402 1/16W	1
R4	CRCW040210R0FKEYE3		10Ω 1% 0402 Resistor	1
R6	CRCW04024992FKEYE3		49.9k 1% 0402 Resistor	1
U1	MIC4721YMM	Micrel, Inc. ⁽⁹⁾	2MHz 1.5A Buck Regulator	1

Notes:

1. TDK: www.tdk.com
2. Murata: www.murata.com
3. AVX: www.avx.com
4. Taiyo Yuden: www.t-yuden.com
5. Vishay: www.vishay.com
6. Diodes, Inc.: www.diodes.com
7. Sumida: www.sumida.com
8. Cooper: www.copperet.com
9. **Micrel, Inc.: www.micrel.com**

Printed Circuit Board Layouts

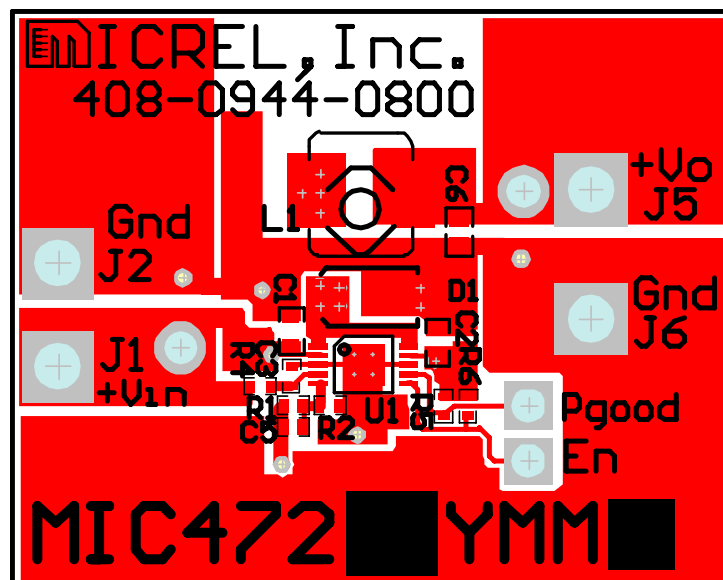


Figure 1a. Top Layer

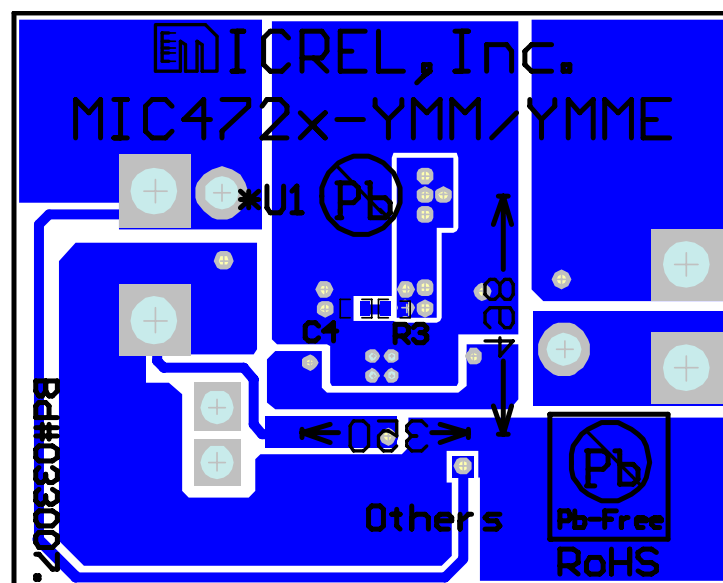


Figure 1b. Bottom Layer

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