

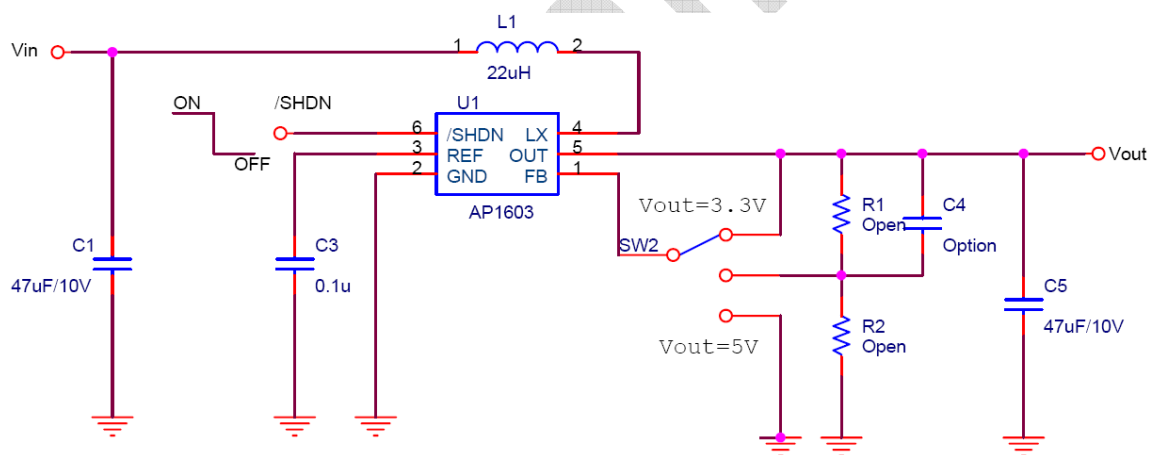
1 Introduction

AP1603 is a high efficiency step-up DC/DC converter for applications using as few as a single Ni-MH or Li-Ion battery cells.

Only four external components are required to deliver a fixed output voltage of 3.3V. The AP1603 starts up from less than 0.9V input with 1mA load. Pulse Frequency Modulation scheme brings optimized performance for applications with light output loading and low input voltages. The output ripple and noise are lower compared with the circuits operating in PSM mode.

The PFM control circuit operating in 150kHz (max.) switching rate results in smaller passive components. The space saving SOT26 packages make the AP1603 an ideal choice of DC/DC converter for space conscious applications, like pagers, electronic cameras, and wireless microphones.

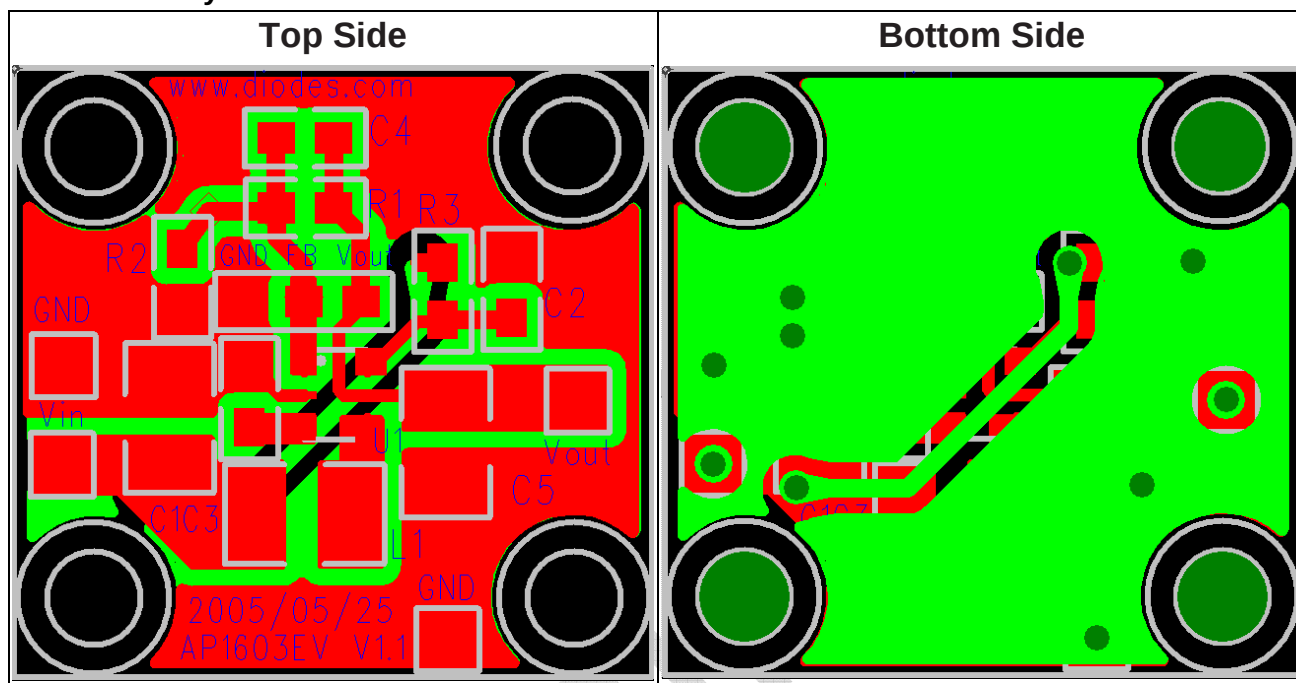
2 EVM Schematic ($V_{IN}=1.1$ to $3.6V$; $V_{OUT}=3.3V$)



$$V_{out} = 1.2 * (1 + R1/R2)$$

R2 Suggest 100K~200K

3 Board Layout



4 Bill of Materials ($V_{OUT}=3.3V$)

Component Location	QTY	Specification	Maker	Maker Part No.	Size
C1,C5	2	47uF/10V(MLCC)	TAIYO YUDEN	LMK325BJ476MM	1210
C2	-	Open	-	-	-
C3	1	0.1uF/50V(MLCC)	TAIYO YUDEN	LMK212B7104KG	0805
C4	-	Option	-	-	-
R1	-	Open	-	-	-
R2	-	Open	-	-	-
R3	-	Open	-	-	-
L1	1	22uH/0.65A	Würth Electronics	-	
U1	1	AP1603	DIODES Inc.	AP1603WL-7	SOT26-3L