

NA-1381

BLF642 at 1030 MHz

Rev. 3 — 05 October 2015

AMPLEON

Application Measurement
Report

Document information

Info	Content
Keywords	NA-1381
Abstract	Measurement results of a demo board for 1030 MHz with 1x BLF642.

Revision history

Rev	Date	Description
1	20110421	
2	20150424	Update for web publication
3	20151005	The format of this document has been redesigned to comply with the new identity guidelines of Ampleon. Legal texts have been adapted to the new company name where appropriate.

1. Introduction

1.1 General Description

This document contains measurement results of a 1030 MHz demo amplifier (Board NA-1381) with 1x BLF642.

1.1.1 Test object details

Transistor type:	BLF642 (bolded down)
Production code:	8033 m1117 Philippines
Package:	SOT467C
Board:	BLF871 -Output LF871 -Input
Demo number:	NA-1381

1.2 Used Test signals

CW + 2Tone: 2-Tone 100kHz spacing

1.3 Testcircuit

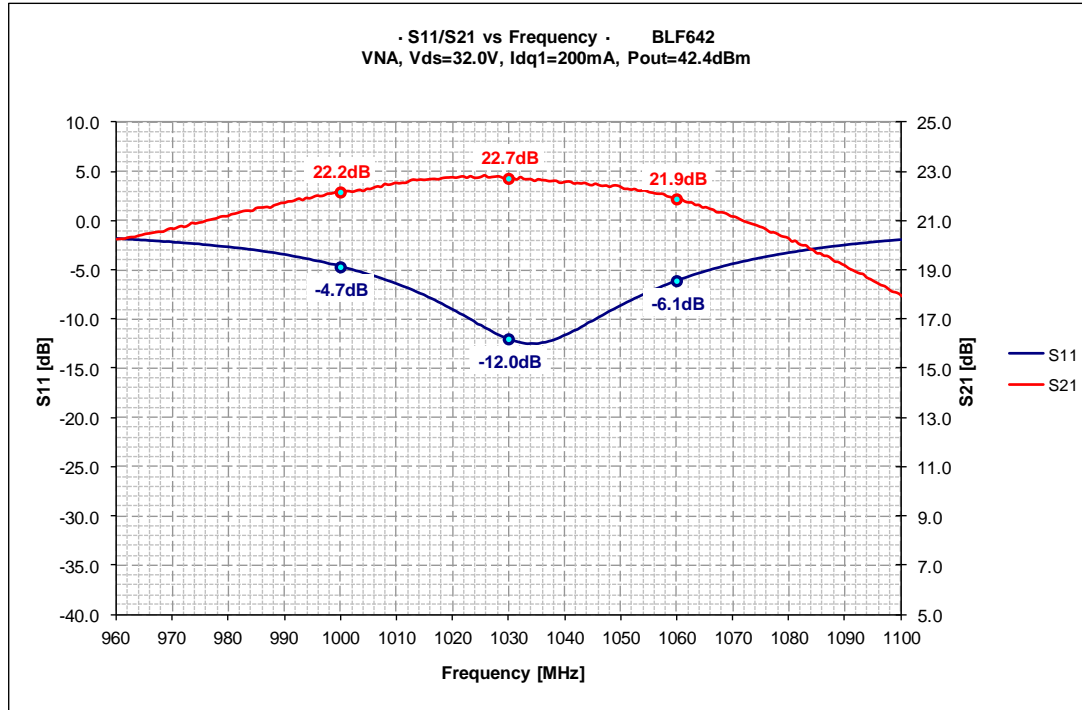
A description of this circuit can be found in **chapter 3**. The test circuit has been designed on Rogers 5880, $h=0.79\text{mm}$, $\epsilon_r=2.2$. Supply voltage (drain-source) is typical 32V. In this case we use **$V_{ds}=32\text{V}$** . Start with $V_{gs}=1.5\text{V}$ and increase until **$I_{dq}=200\text{mA}$** ($V_{gs}\sim 2\text{V}$).

Please note that the pcb's we used are the same as for the BLF871.

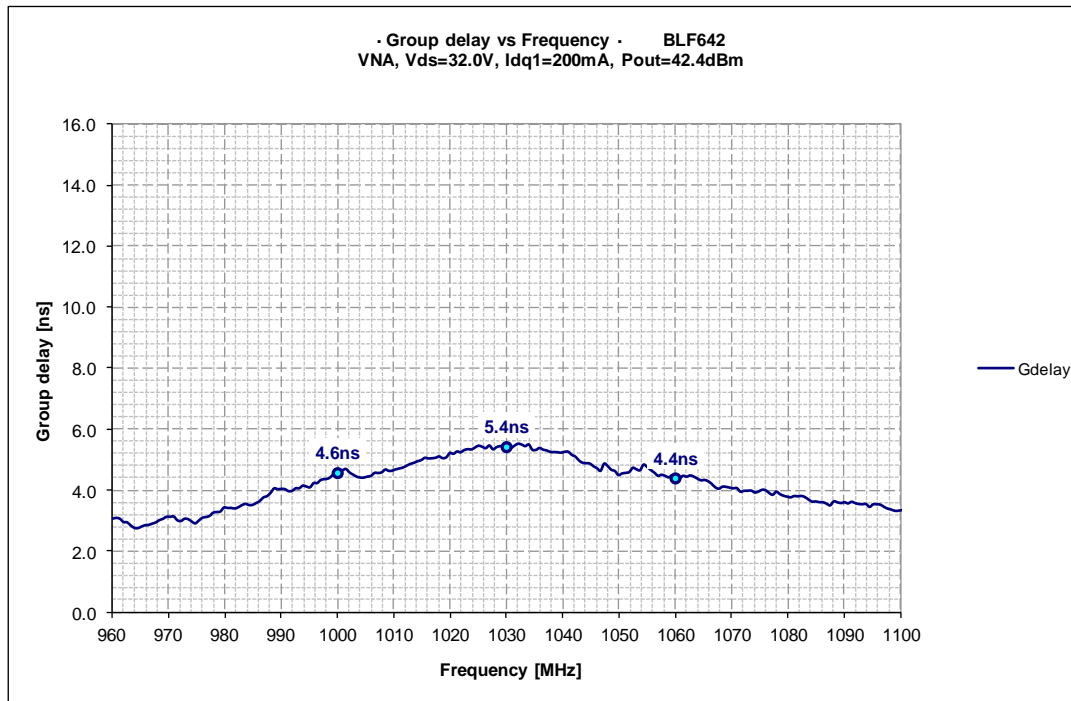
2. Measurement Results

2.1 Network Analyzer Sweep

2.1.1 Gain & IRL @ Pout=42.4dBm

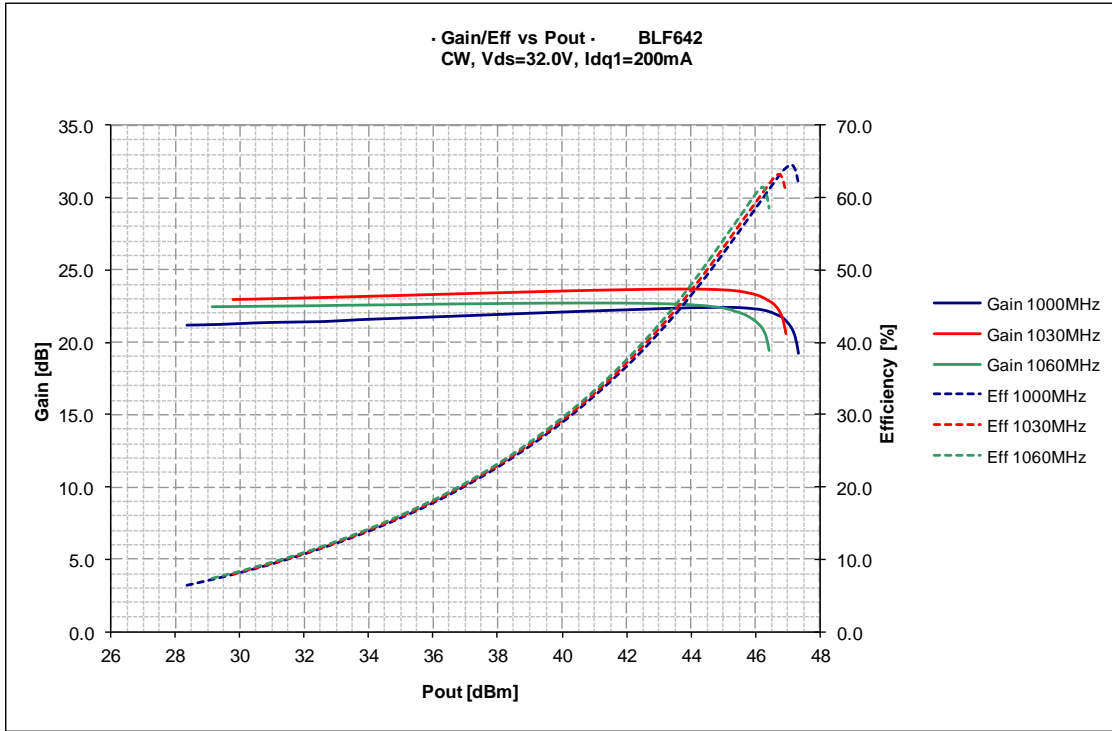


2.1.2 Delay @ Pout=42.4dBm



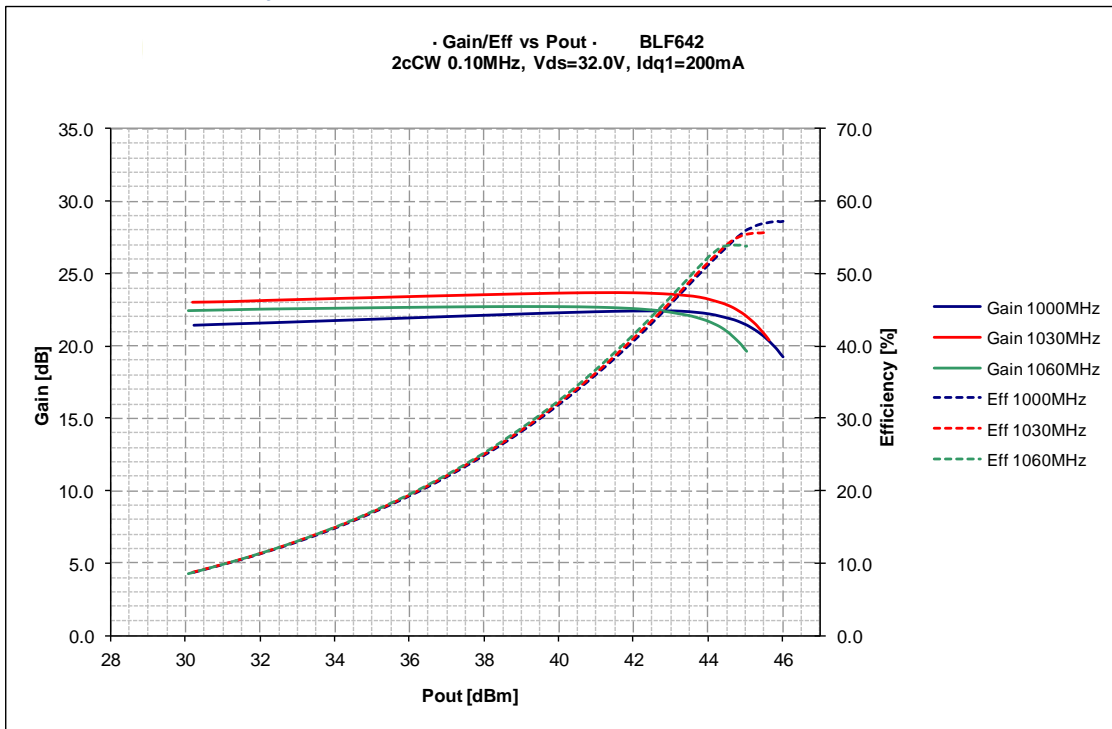
2.2 CW Powersweep

2.2.1 Gain and Efficiency

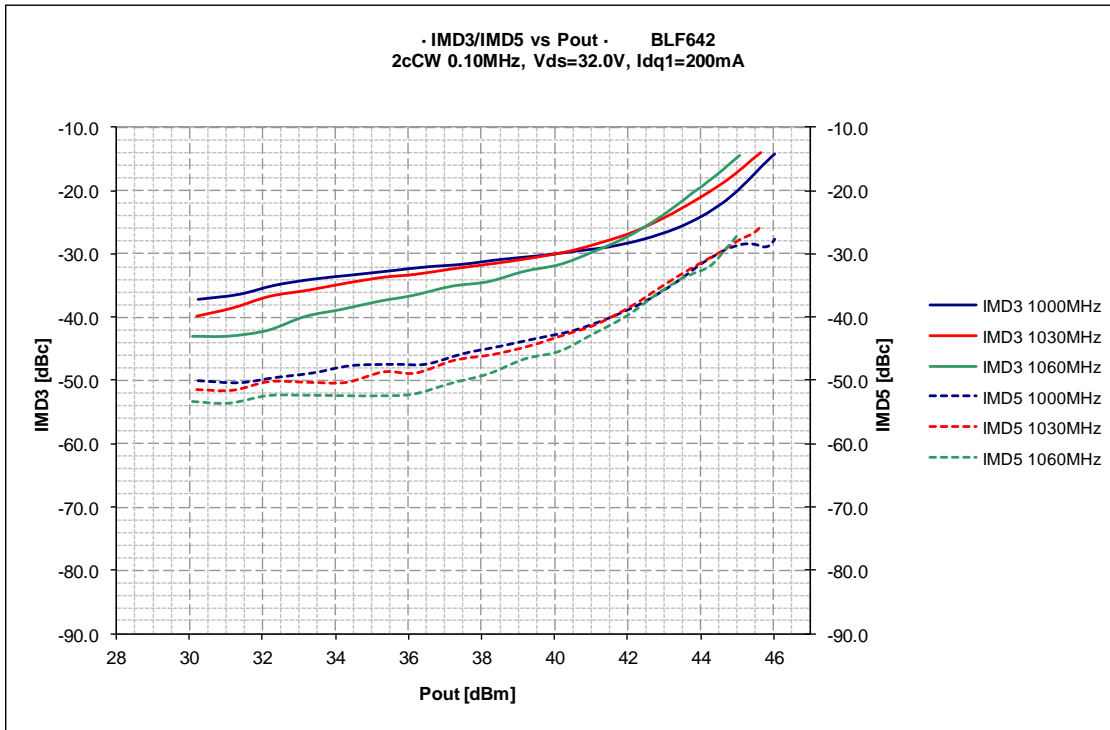


2.3 2-Tone powersweep

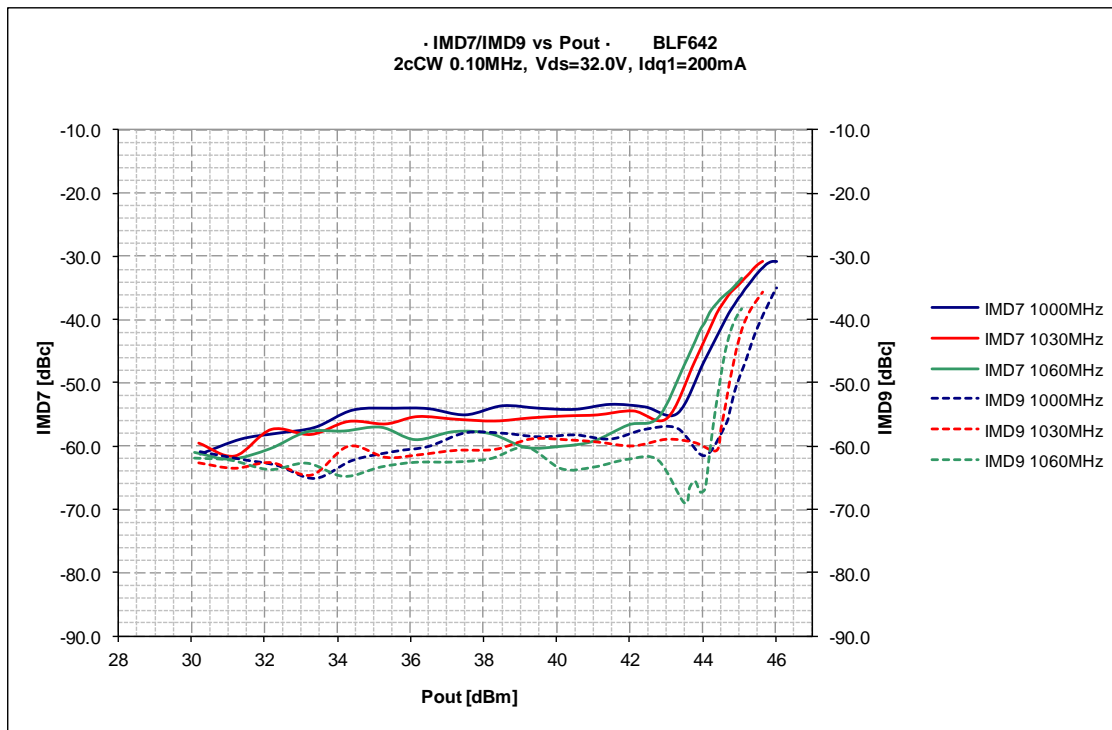
2.3.1 Gain and Efficiency



2.3.2 $IMD3_{max}$ and $IMD5_{max}$

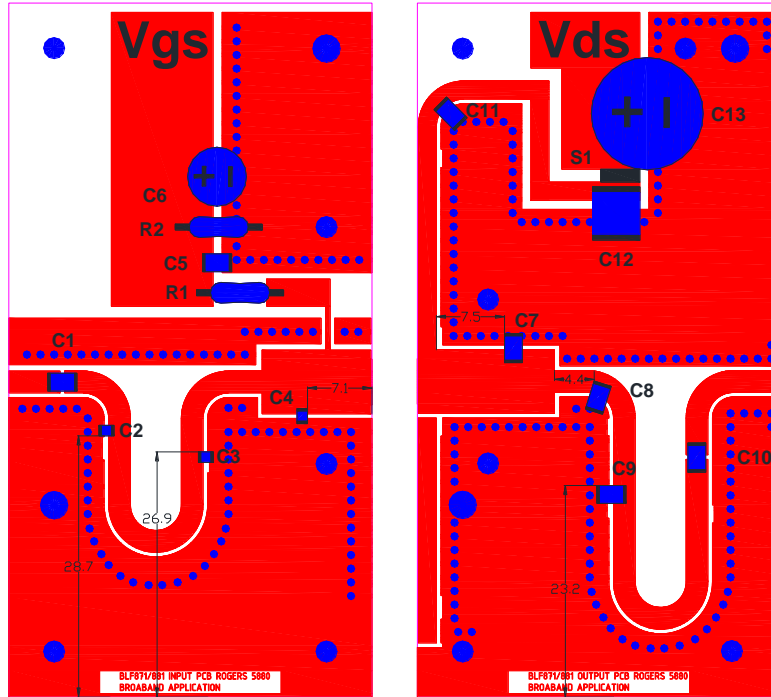


2.3.3 $IMD7_{max}$



3. PCB Layout

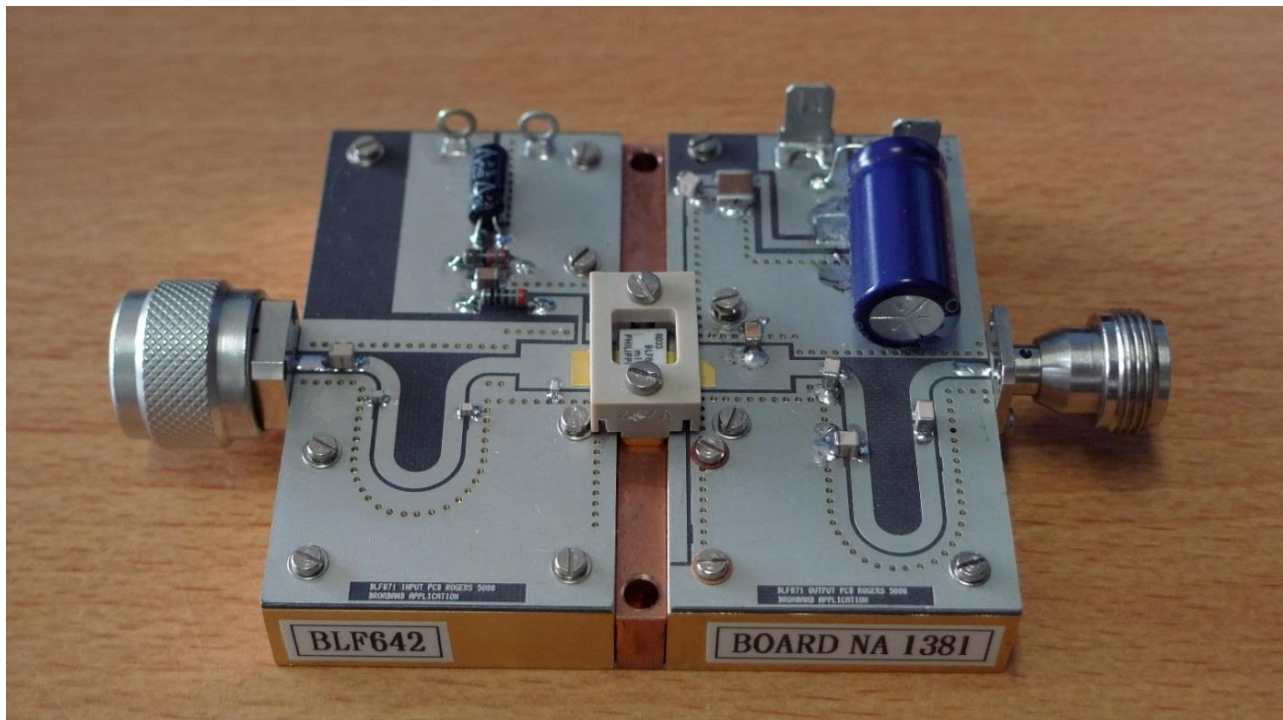
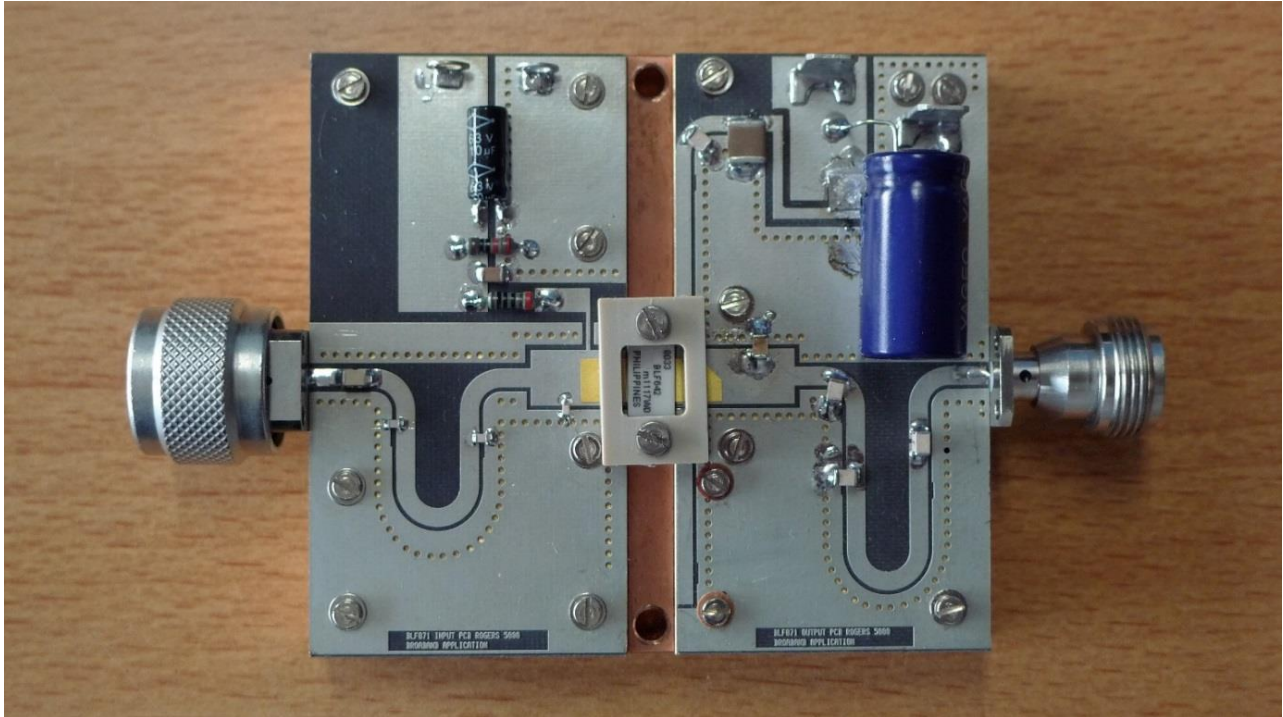
3.1 PCB Layout Drawing



3.2 Component list

Partslist BLF642			
Input			
no.	value	type	comment
C1	39pF	ATC100B	
C2	3.3pF	ATC100A	
C3	6.2pF	ATC100A	
C4	15pF	ATC100A	
C5	20nF	ATC	
C6	10uF	Electrolytic Capacitor	63V
R1	100Ω		
R2	10kΩ		
PCB		RO5880 epsr = 2.2 h = 0.79mm 95 x 80 mm Cu plating 35μ	
Output			
no.	value	type	comment
C7	15pF	ATC100B	
C8	7.5pF	ATC100B	
C9	3.6pF	ATC100B	
C10	39pF	ATC100B	
C11	39pF	ATC100B	
C12	10uF	Murata	
C13	470uF	Electrolytic Capacitor	63V
PCB		RO5880 epsr = 2.2 h = 0.79mm 95 x 80 mm Cu plating 35μ	

3.3 Photos Demo Board



4. Attachments

Please see the attachment for the support files.

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