

AR181152

BLF13H9LS750P, 1300MHz

v1.0 — 28-November-2018

AMPLEON

Application Report

Document information

Status	Company Public
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Abstract	Measurement results of a Class AB design for the 1300MHz band with the BLF13H9LS750P

1. Revision History

Table 1: Report revisions

Revision	Date	Description	Author
1.0	20181128	Initial document	Harrie Rahangmetan

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5. Introduction

5.1 General description

This document shows the measurement results of a 1300MHz demo amplifier (Board AR181152) with 1x BLF13H9L750P.

5.2 Test object details

Transistor type:	BLF13H9LS750P (Soldered down)
Production code:	3903 m1836 Y1 Philippines
Package:	SOT539
Board:	BLF13H9L(S)750P_Rev_4
Demo number:	AR181152

5.3 Used Test signals

CW:	CW
CW-pulsed:	Pulsed CW, Pulse Width 300us, Duty Cycle 10%

5.4 Test circuit

A description of this circuit can be found in Appendix A.

The INPUT and OUTPUT board of the test circuit have been designed on Rogers RO4350, $h=0.762\text{mm}$, $\epsilon_r=3.5$, $2\times 35\mu\text{m}$.

Supply voltage (drain-source) is typical 50V. Increase V_{gs} until the total I_{dq_total} will be 200mA. (100mA per side)

6. Measurement Results

6.1 Gain & Efficiency @ Frequency=1300MHz CW

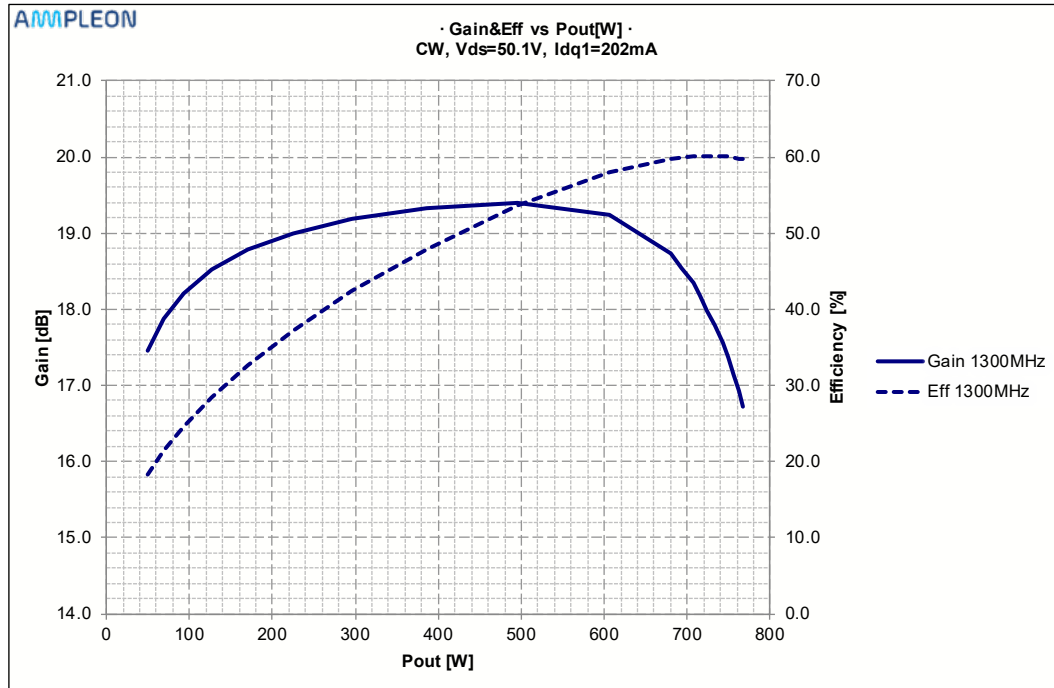


Figure 1 CW Gain and Efficiency vs Pout [W]

6.2 Gain & Efficiency @ Frequency=1300MHz CW_PULSED

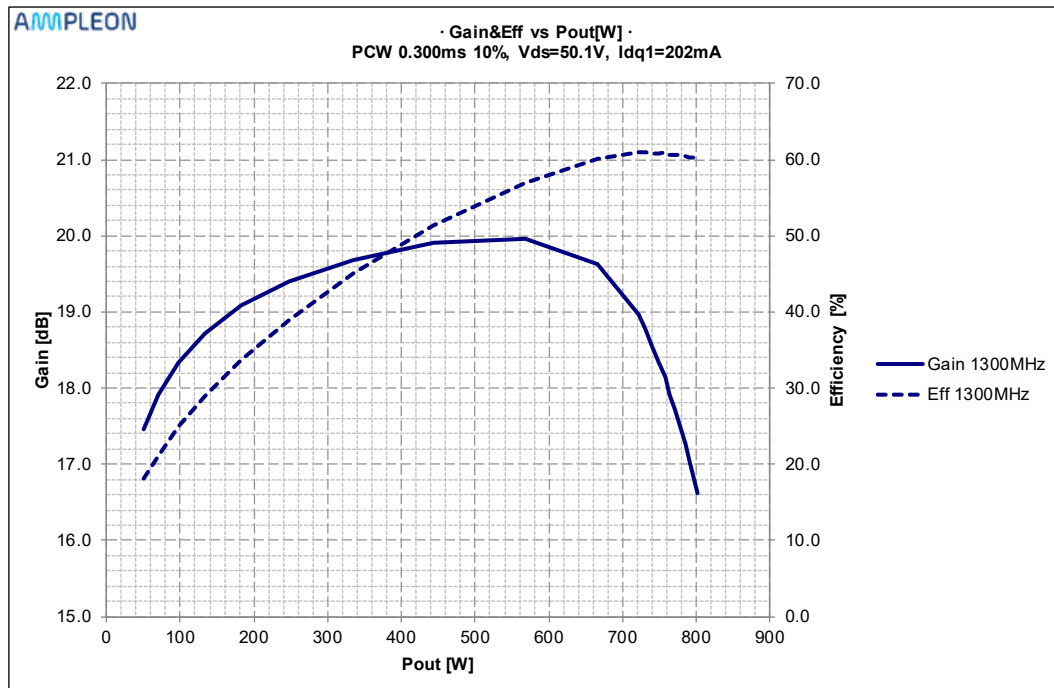


Figure 2 CW-Pulsed Gain and Efficiency vs Pout [W]

7. Appendix A – PCB Layout

7.1 PCB Layout Drawing

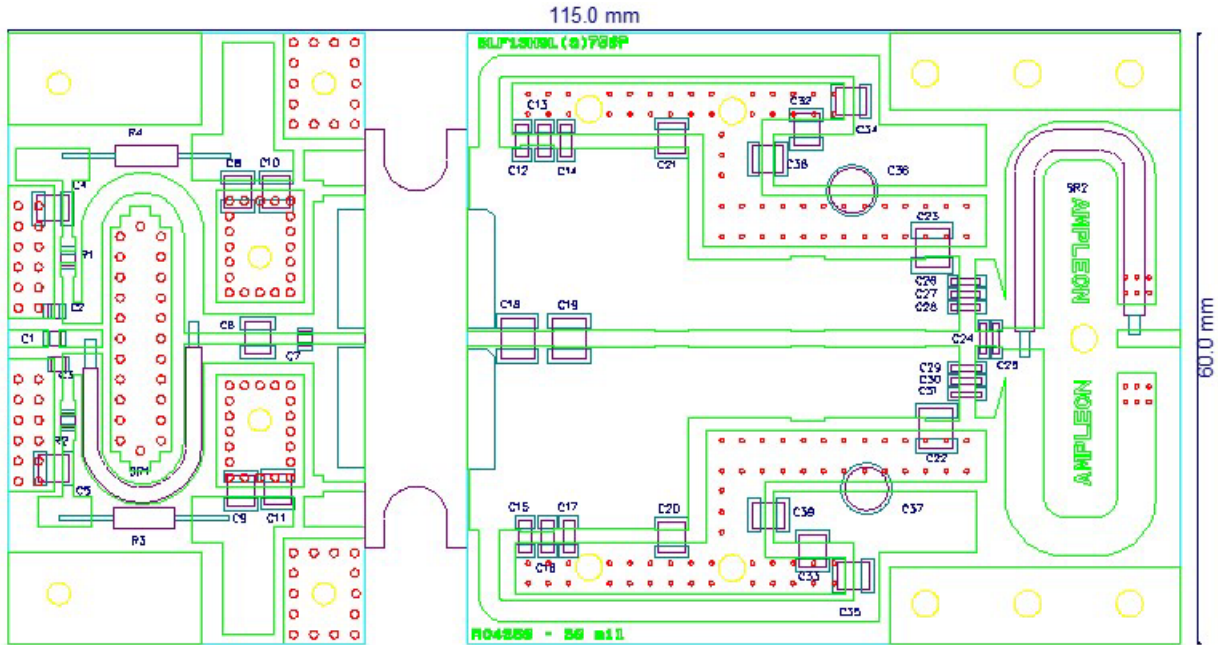


Figure 3 PCB Layout Drawing

7.2 Component list

Table 2: Component list

Components list application circuit.		
C1, C26, C27, C28, C29	62 pF	ATC800B
C30, C31, C35, C34	62 pF	ATC800B
C2, C3	43 pF	ATC800B
C4, C5	4.7 μF	TDK C4532X7R1E475MT020U
C6	4.3 pF	ATC800B
C7	3.6 pF	ATC800A
C8, C9, C32, C33	1.0 nF	ATC100B
C12, C13, C15, C16	2 pF	ATC800B
C14, C17, C20, C21	0.5 pF	ATC800B
C24	0.7 pF	ATC800B
C25	1.3 pF	ATC800B
C19, C22, C23	3.3 pF	CDE – MIN-002
C18	4.7 pF	CDE – MIN-002
C10, C11, C38, C39	10 μF	Murata GRM55DR61H106KA88L
C36, C37	-----	NOT APPLIED
R1, R2	5.1 Ω	0603 SMD Resistor
R3, R4	100 Ω	0.6 W – long wires.
SR1	Coax – 25 Ω	Length= 34 mm
SR2	Coax – 35 Ω	UT-141C-35-TP: Length= 34 mm
PCB Material: Rogers 4350B, thickness 0.762 mm (30 mil) or equivalent, ε _R = 3.48, Cu = 35 micron		

Photo's Demo Board

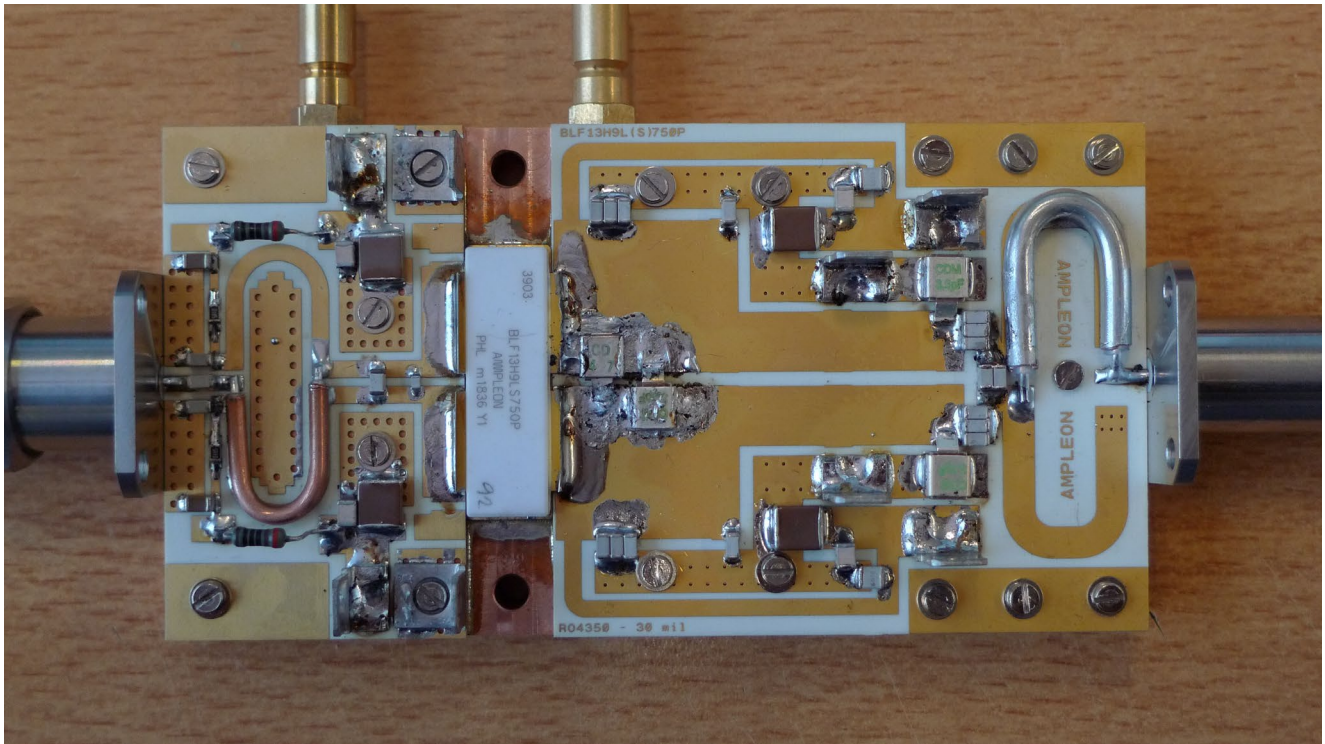


Figure 4 Picture Top View Demo Board

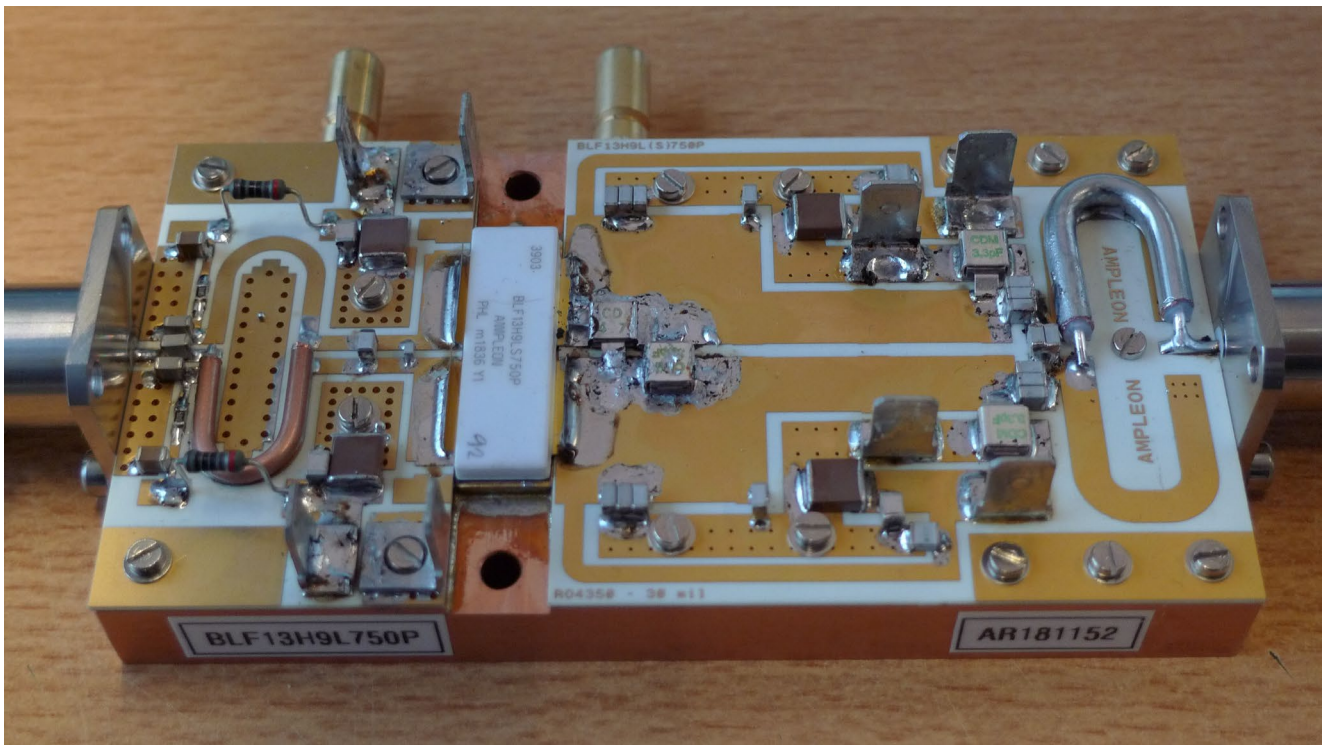


Figure 5 Side View Picture Demo Board

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