

AR151007

BLL8H0514-25, 1200-1400MHz

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AMPLEON

Application
Report

Document information

Status Company Confidential

Author(s) Ampleon

Abstract Measurement results of a Class AB design
for the 1200-1400MHz band with the BLL8H0514-25

1. Revision History

Table 1: Report revisions

Revision	Date	Description	Author
1.0	2015-06-12	Initial document	Hans Mollee

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5. Introduction

5.1 General description

This document shows the measurement results of a 1200-1400MHz demo amplifier (Board AR151007) with 1x BLL8H0514-25.

5.2 Test object details

Transistor type: BLL8H0514-25 (Bolted down)
Production code: m1446
Package: SOT467A
Demo number: AR151007

5.3 Used Test signals

CW-pulsed: $t_p=300\mu s$, $\delta=10\%$

5.4 Test circuit

The PCB has been designed on Rogers Duroid 6006, $h=0.64\text{mm}$, $\epsilon R=6.15$, with 35 μm double sided copper. Supply voltage (drain-source) is 48V. Gate bias voltage is connected to the Vg terminals on the input board. To set the drain quiescent current, slowly increase VGS until the IDQ will be 50 mA, starting at about 1V.

6. Measurement Results

6.1 CW pulsed signal – Power Sweep

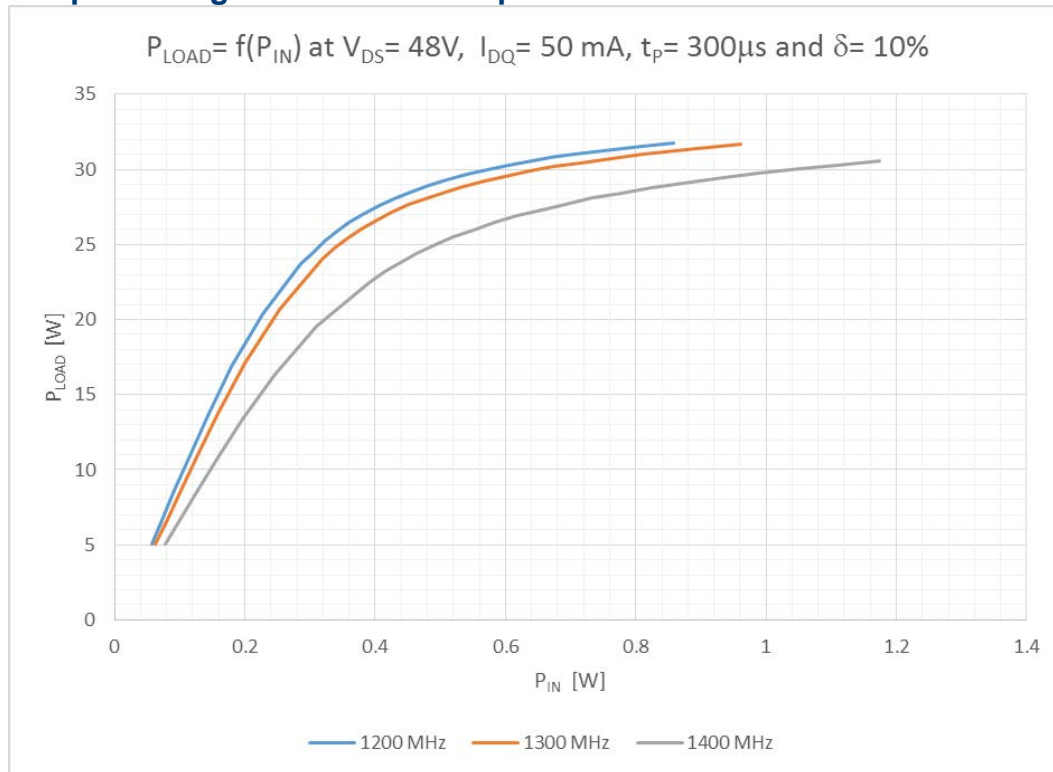


Figure 1 Pulsed-CW P_{load} [W] vs P_{in} [W]

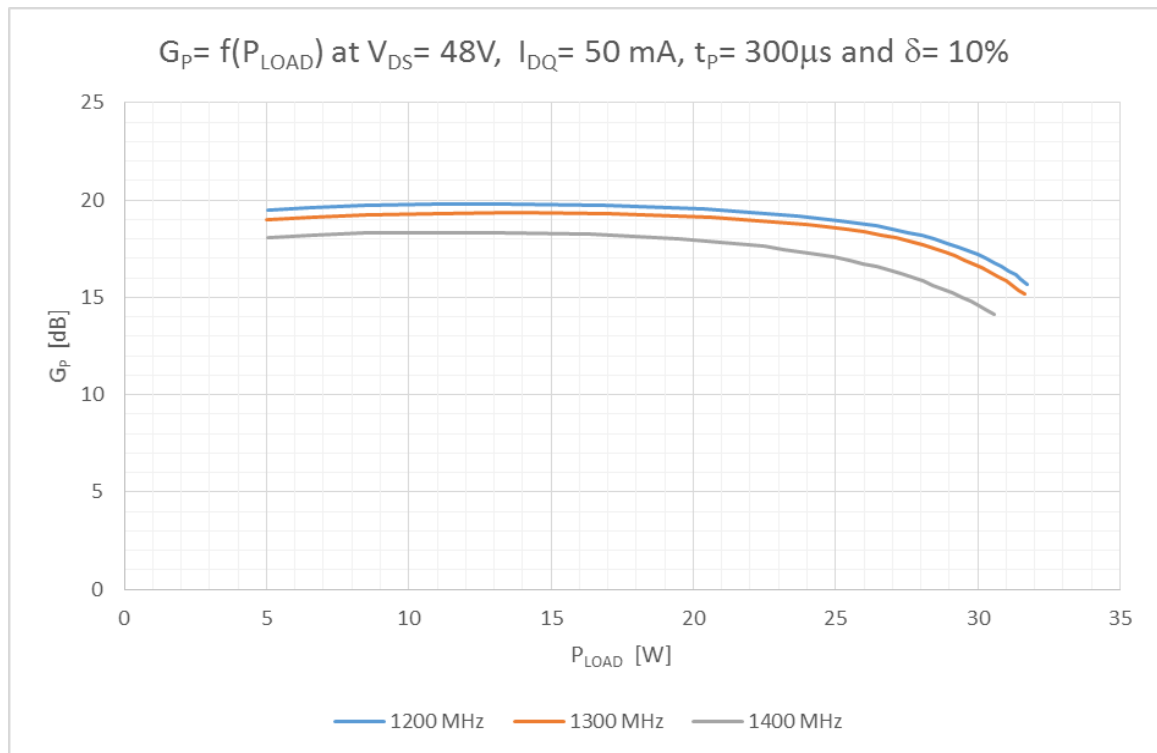


Figure 2 CW Pulsed G_p [dB] vs P_{load} [W]

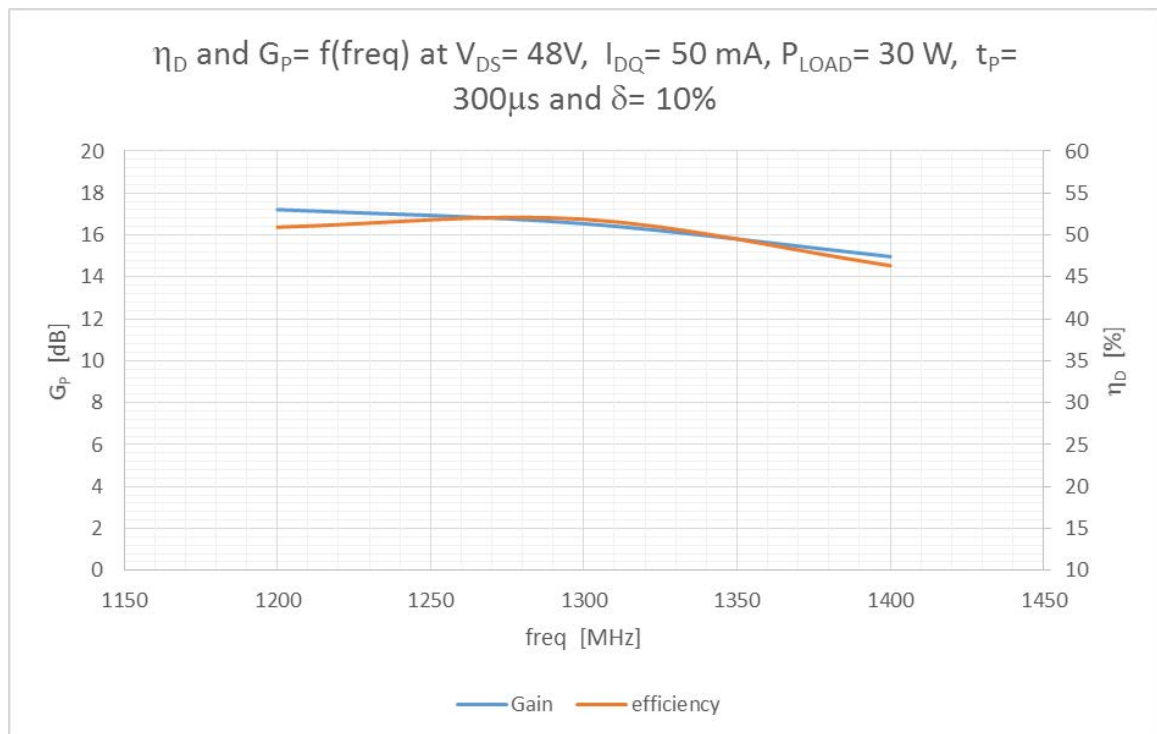


Figure 3 CW Pulsed G_p [dB] and η_D [%] vs Freq [MHz]

7. Appendix A – PCB Layout

7.1 PCB Layout Drawing

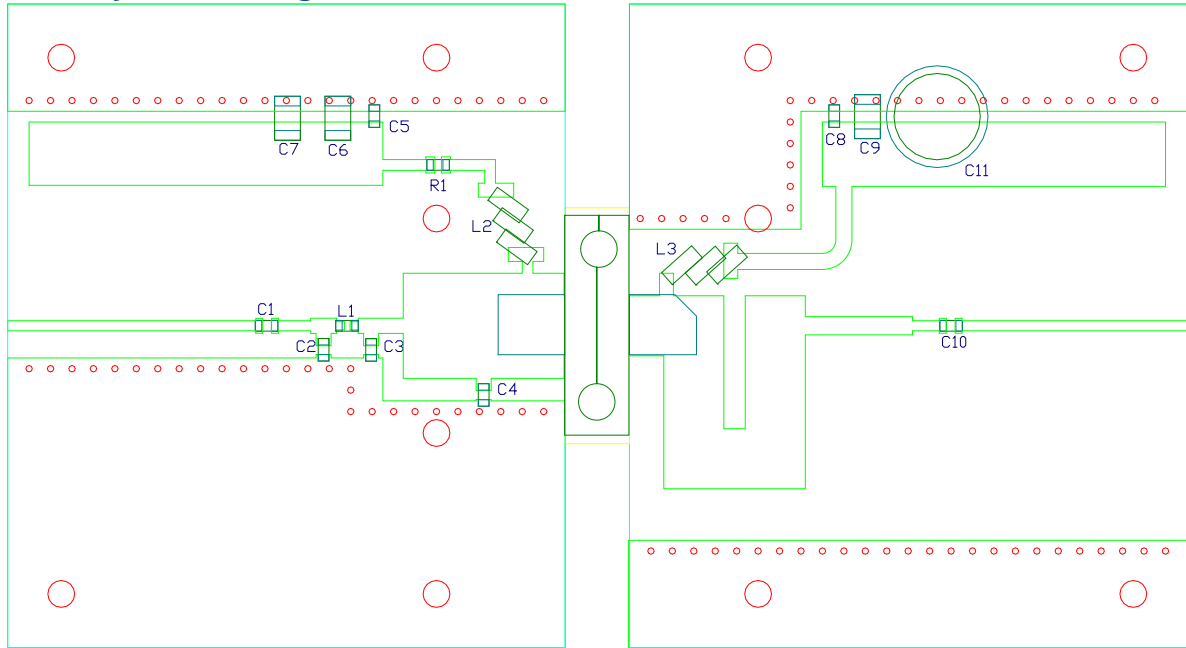


Figure 4 PCB Layout Drawing

7.2 Component list

Table 2: Component list

Components list application circuit.

C1, C5, C8	56 pF	ATC100A
C2	2.0 pF	ATC100A
C3, C4	5.1 pF	ATC100A
C13	75 pF	ATC100A
C6, C9	1 nF	ATC100B
C10	30 pF	ATC800A
C7	4.7 μF	SMD capacitor
C11	100 μF	63 V
L1	2.0 nH	Coilcraft – 0603CT-2N0XGL
L2, L3	18 nH	Coilcraft – A05TGLB
T1		BLL8H0514-25
R2, R3	5 Ω	SMD Resistor 0603 size

PCB Material: Rogers 6006, thickness 0,635 mm (25 mil) or equivalent, $\epsilon_R = 6.2$, Cu = 35 micron

7.3 Photo's Demo Board

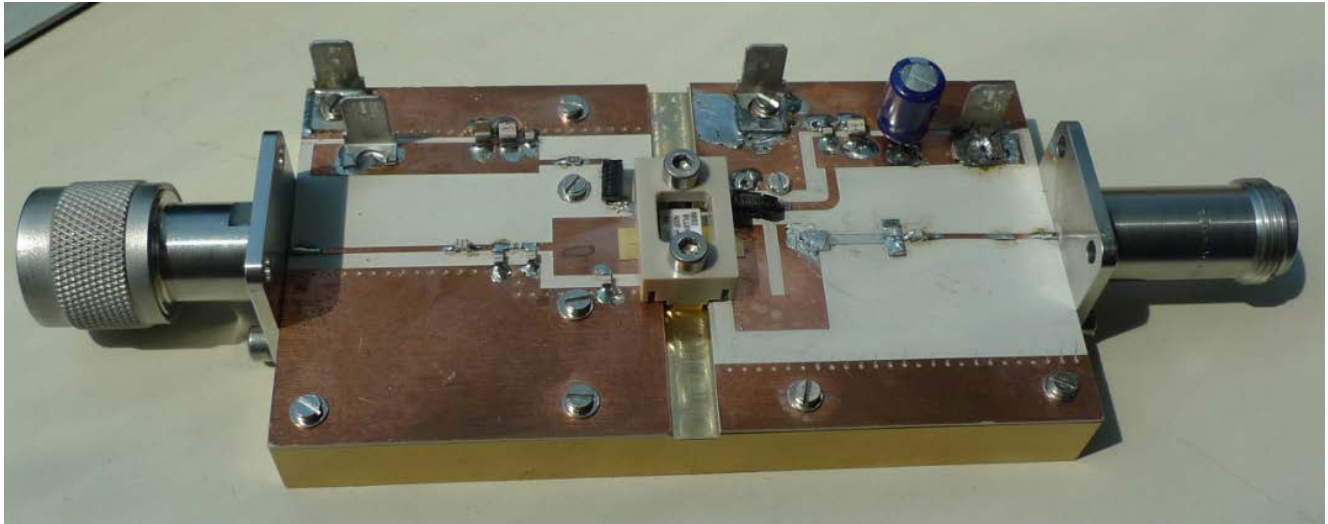


Figure 5 Picture Demo Board

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