

AR231023

BLS9G2735L-50, 3000 to 3100MHz

v1.0 — 1st February 2023

AMPLEON

Application
Report

Document information

Status Company Public

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Abstract Measurement results of a Class-AB design
for the 3000 to 3100MHz band with the BLS9G2735L-50

1. Revision History

Table 1: Report revisions

Revision	Date	Description	Author
1.0	20230201	Initial document	Hans Mollee

2. Contents

- 1. Revision History..... 2
- 2. Contents 2
- 3. List of figures 2
- 4. List of tables..... 2
- 5. General description 2
- Performance Details 4
- 5.1 Hardware 7
- 5.2 Board material..... 8
- 5.3 Device markings..... 8
- 6. Legal information..... 9
- 6.1 Definitions 9
- 6.2 Disclaimers 9
- 6.3 Trademarks..... 9
- 6.4 Contact information 9

3. List of figures

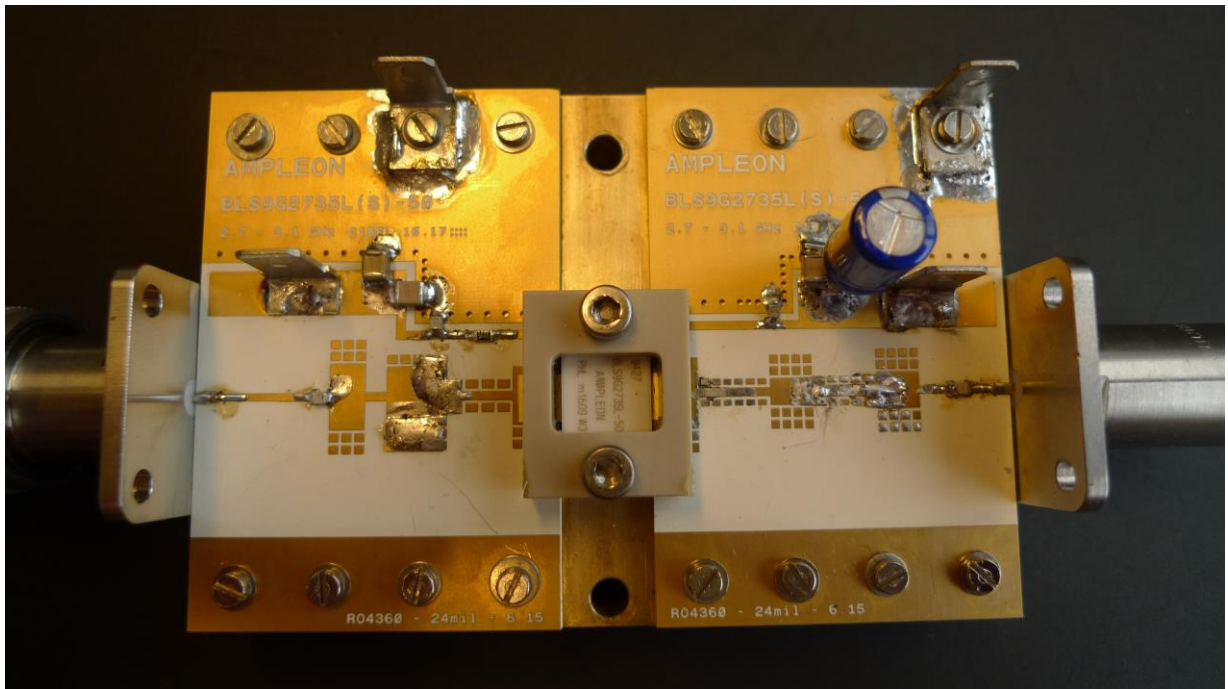
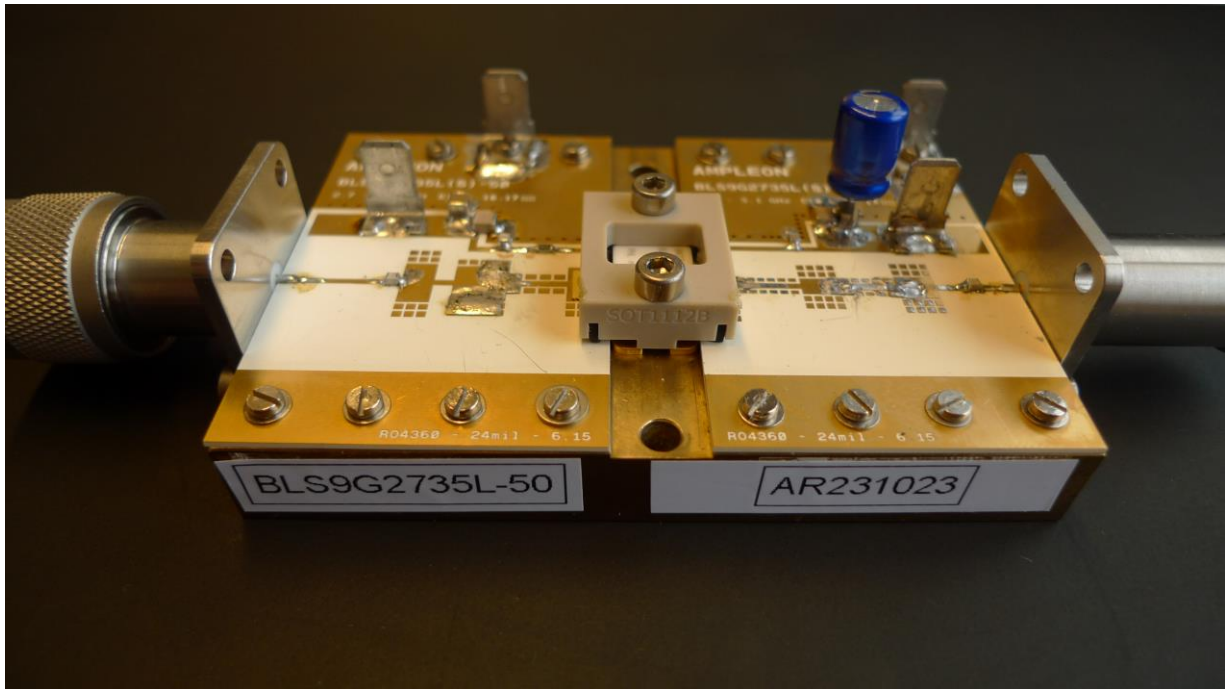
- Figure 1 P_{LOAD} vs P_{IN} 4
- Figure 2 Gain vs P_{LOAD}..... 4
- Figure 3 Drain efficiency vs P_{LOAD}..... 5
- Figure 4 Compressed Power 5
- Figure 5 Performance at 50 W..... 6

4. List of tables

- Table 1: Report revisions..... 2
- Table 2:.. Board specifications..... 8
- Table 3:.. Device specifics..... 8

5. General description

This report presents the measurement results of the Class-AB demo AR231023. The device used is a 9th generation LDMOS single ended package, the BLS9G2735L-50. The presented demo is tuned for the frequency band 3000 to 3100MHz.



The PCB has been designed on Rogers RO4360G2, $h=0.61\text{mm}$, $\epsilon_R=6.2$, 35um double sided copper. Supply voltage (drain-source) is 32V. Gate bias voltage is connected to the V_g terminals on the input board. To set the drain quiescent current, slowly increase V_{GS} until the I_{DQ} will be 100 mA, starting at about 1V.

6. Performance Details

The pulse format used is a 20 μs pulse with a duty cycle of 2%. The pulse format used by the customer is ≈20μs – 2%, but due to software limitations this is not feasible in our set-up. Instead, the closest feasible is used: 50 μs – 2%. The power sweep was performed up to 3 dB gain compression.

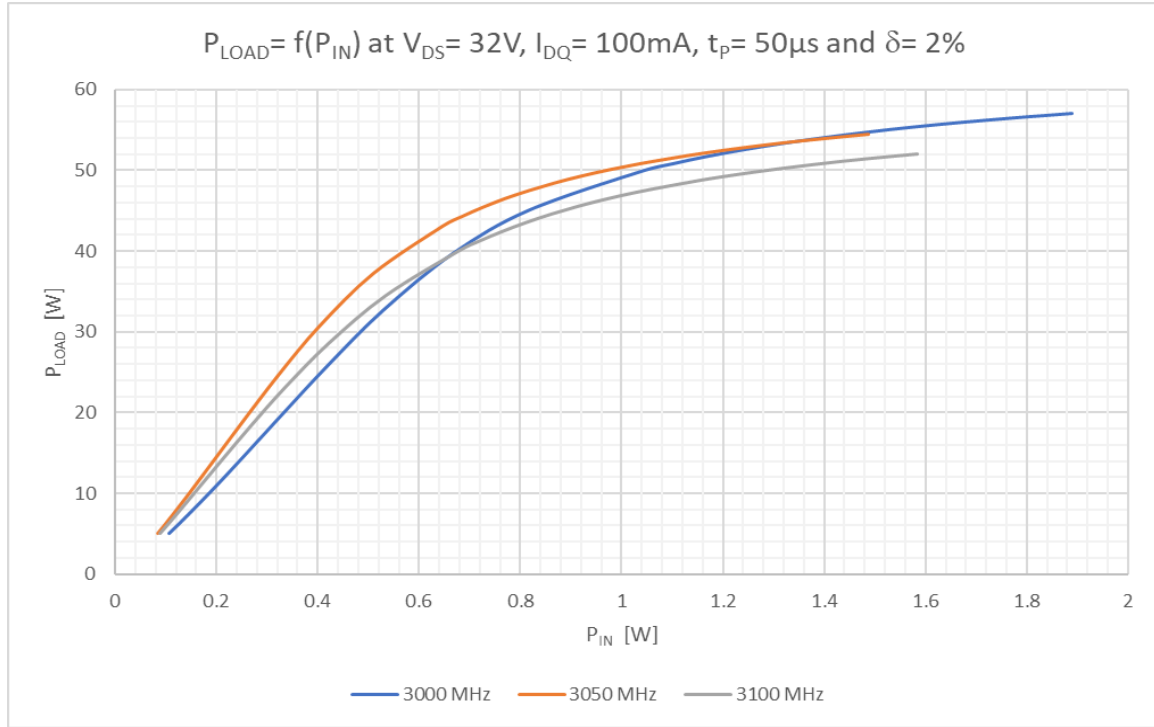


Figure 1 P_LOAD vs P_IN

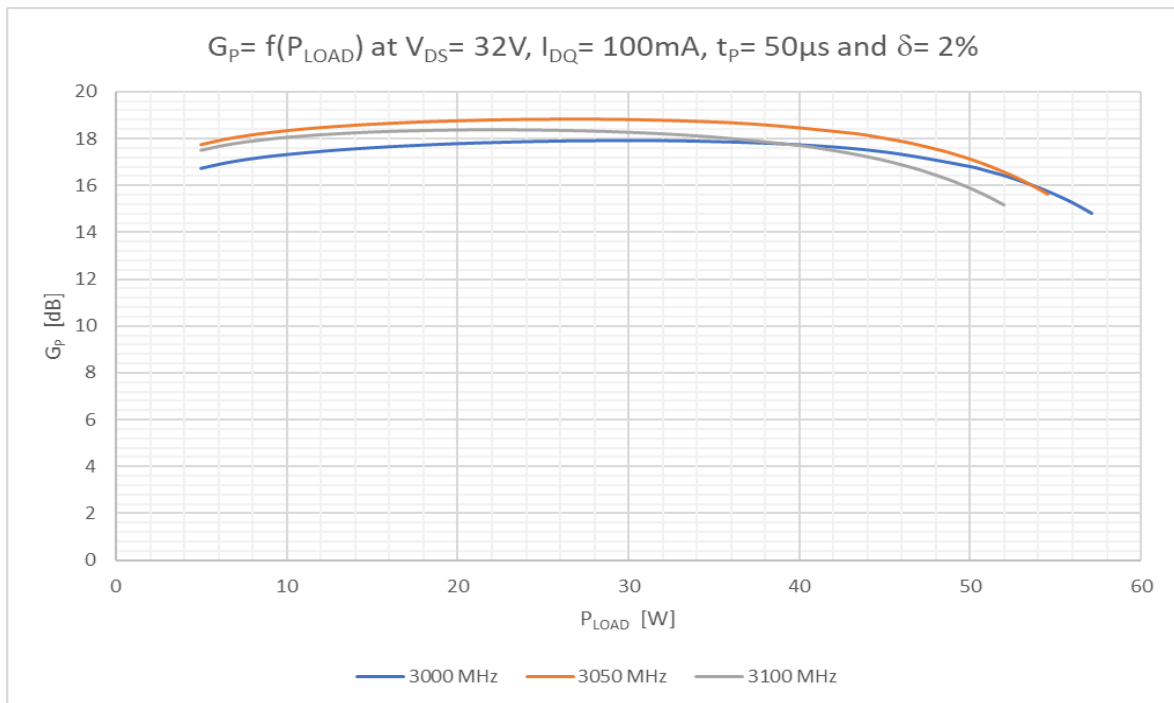


Figure 2 Gain vs P_LOAD

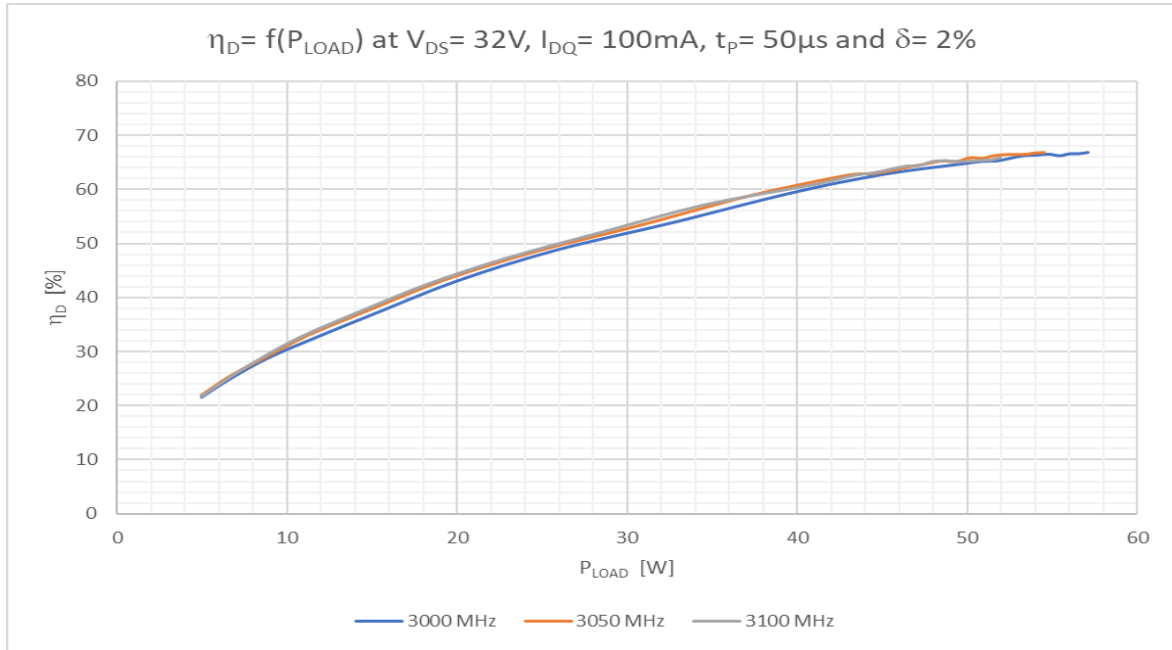


Figure 3 Drain efficiency vs P_{LOAD}

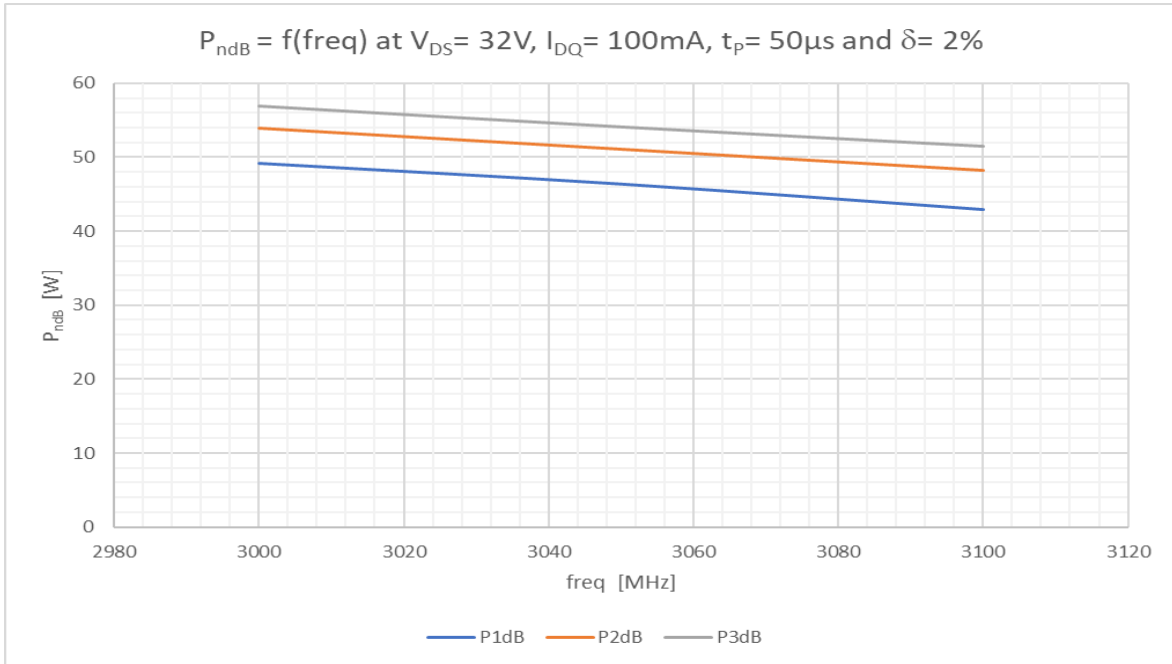


Figure 4 Compressed Power

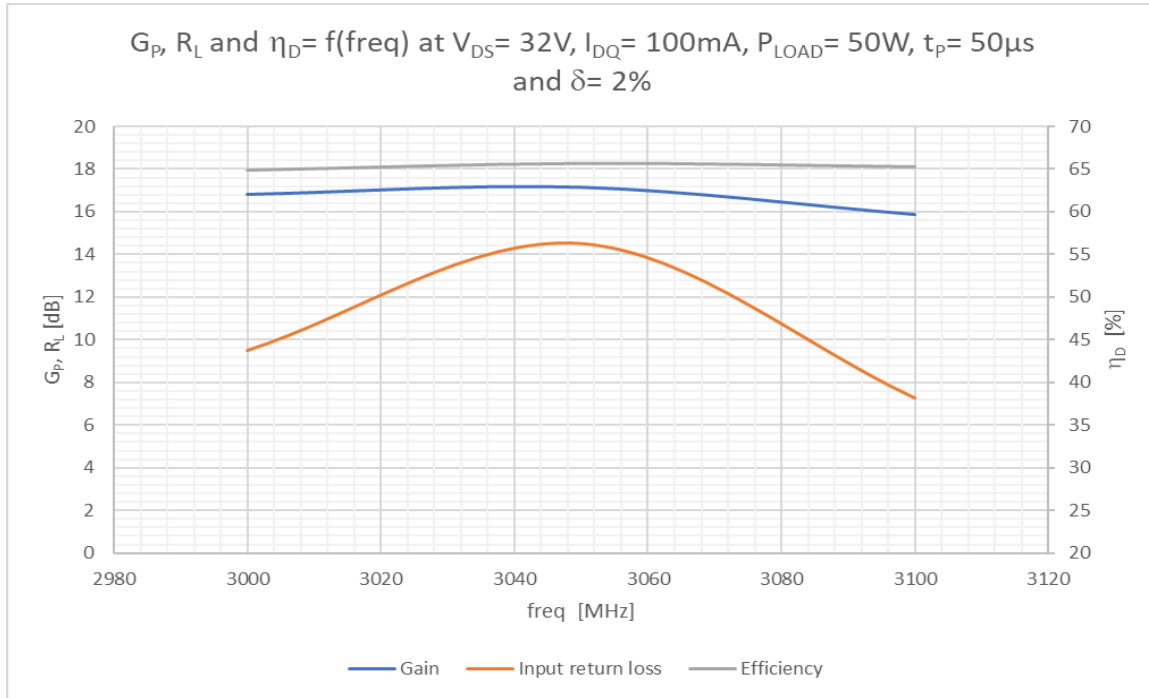
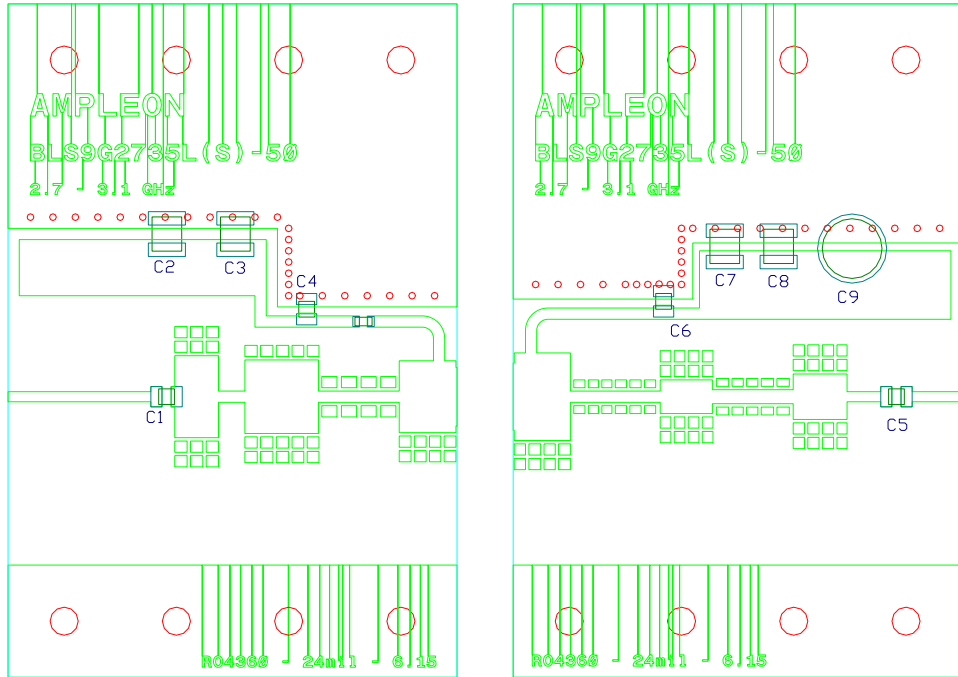


Figure 5 Performance at 50 W

6.1 Hardware



Components list application circuit.

C1, C4, C5, C6	20 pF	ATC800A
C3, C7	1 nF	ATC800B
C2, C8	10 μ F – 50V	GRM55DR61H106KA88L
C9	100 μ F – 63V	Electrolytic capacitor
R1	5 Ω	0805 SMD Resistor

PCB Material: Rogers 4360, thickness 0.61 mm (24 mil) or equivalent, $\epsilon_R = 6.15$, Cu = 35 micron

6.2 Board material

Table 2: Board specifications

Parameter	Value
Manufacturer	Rogers
Type	RO4360G2
Thickness	24 mil, 0.61 mm
Layers	2, top/bottom. Bottom all copper

6.3 Device markings

Table 3: Device specifics

Parameter	Value
Manufacturer	Ampleon
Device	BLS9G2735LS-50
Marking	BLS9G2735LS-50, m1609 w3
Comments	

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