

NA-1037

BLF571 at 88-108 MHz

Rev. 3 — 05 October 2015

AMPLEON

Application Measurement
Report

Document information

Info	Content
Keywords	NA-1037
Abstract	Measurement results of a demo board for 88-108 MHz with 1x BLF571.

Revision history

Rev	Date	Description
1	20101126	
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

A 20 W LDMOS RF transistor for broadcast applications and industrial applications in the HF and VHF band.

2. Tests

2.1 Used Test signals

The demo has been tested at $V_{DS}=50V$, $I_{DQ}=50mA$ and $T_H=25^{\circ}C$ under the following conditions:

- CW measurement
- Two-tone measurements, 100 KHz tone spacing.

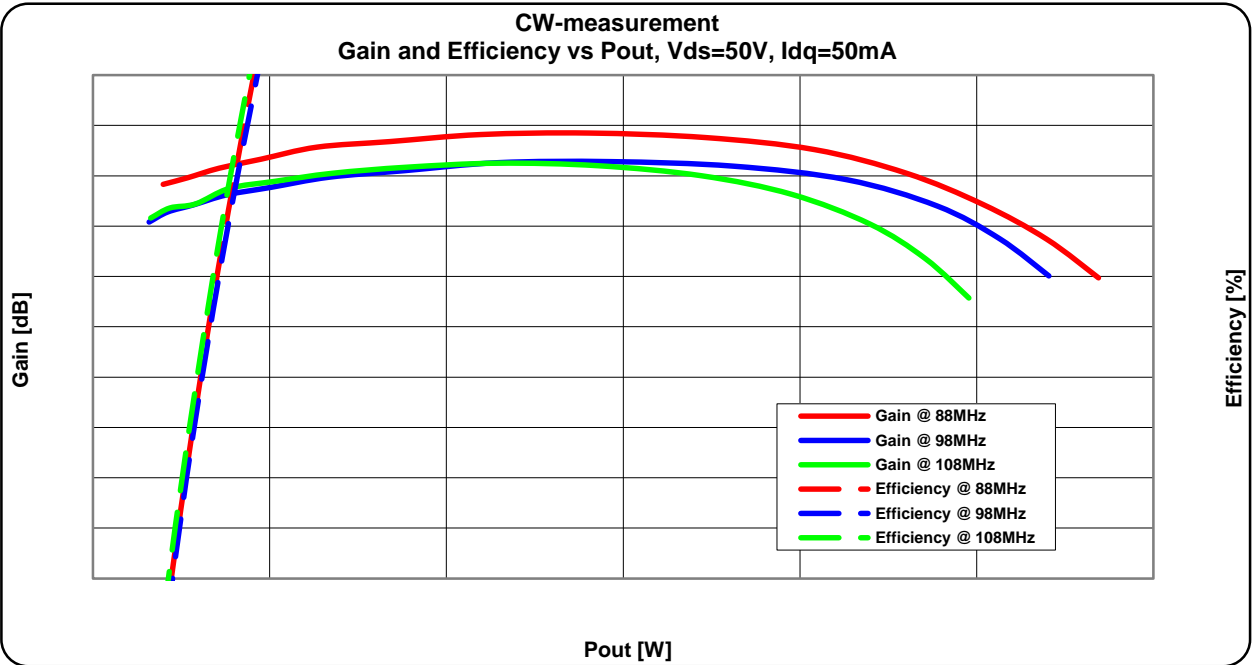
2.2 Circuit details

A description of this circuit can be found in chapter 4 and 5. The test circuit has been designed on Taconic RF35, $h=0,762mm$, $er=3.48$, metal thickness = $2 \times 35\mu m$.

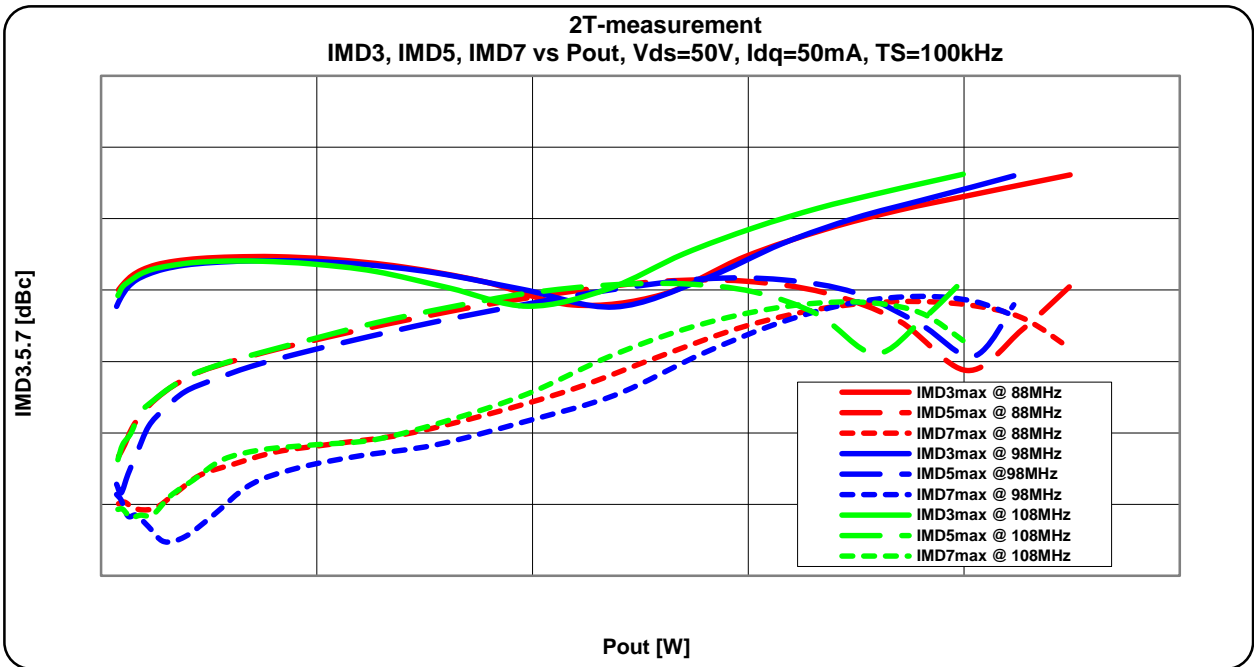
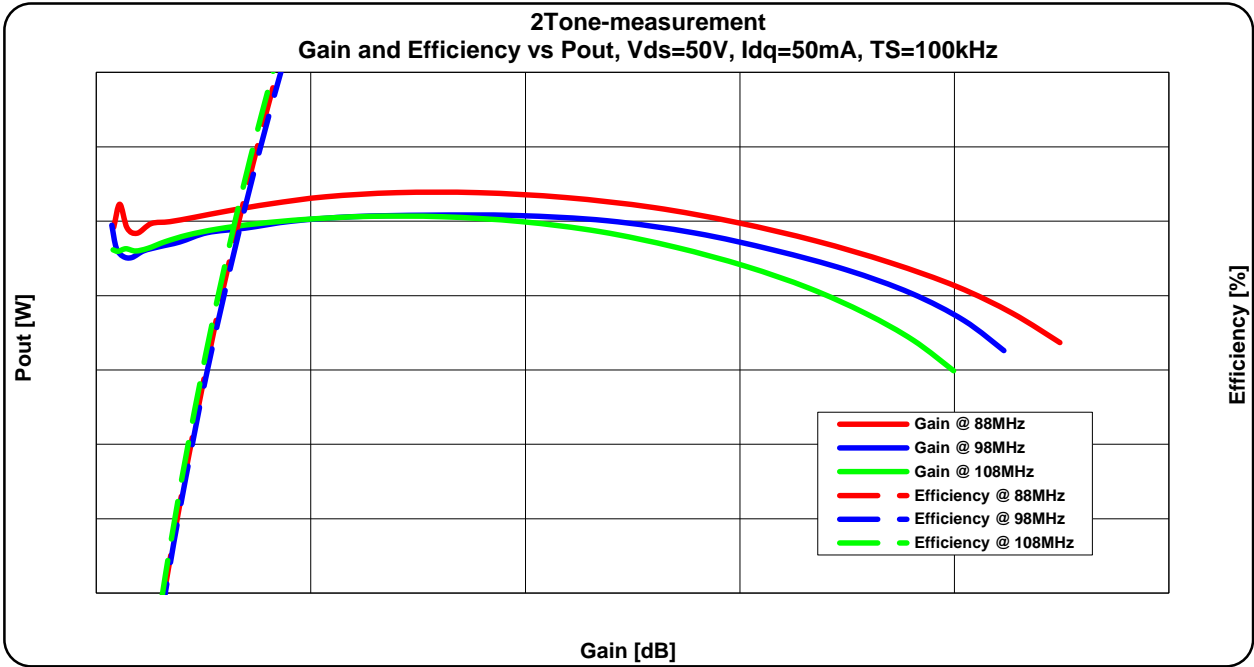
Supply voltage (drain-source) is typical 50V. Connect the V_g s and start with 1V and then increase voltage until the $I_{dq}=50mA$.

3. Measurement Results

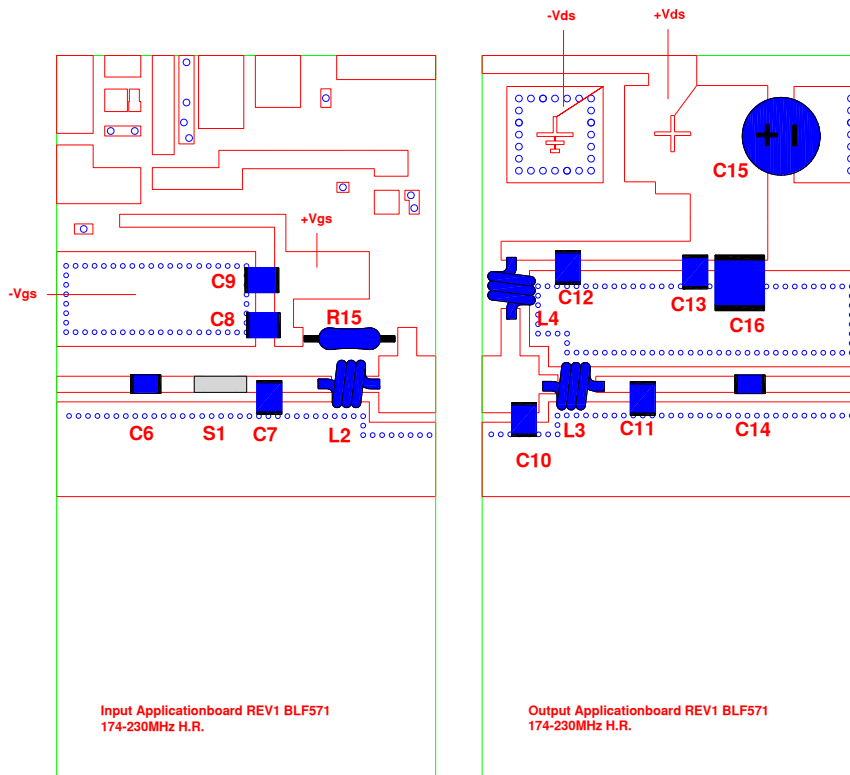
3.1 CW measurement Test Results Vds=50V, Idq=50mA.



3.2 2Tone Powersweep measurement Test Results Vds=50V, Idq=50mA.



4. Demoboard layout input and output with components.



5. Component List

Table 3: List of components BLF571 (VHF)

Component	Description	Component	Description
C1,C4,C9,C13	Cap 1uF Murata GRM31MR71H105KA88L	S1	Metal Strip
C2,C3	Cap 100nF Murata GRM21BR71H104KA01L	Q1	Regulator JRC 78L08
C6,C8,C12,C14	Cap RF 1nF ATC100B	Q2	Transistor NXP PMBT2222
C7	Cap RF 24pF ATC100B		
C9	Cap RF 4.7uF TDK	R1	Res, 0805 2kΩ, 1%
C10	Cap RF 20pF ATC100B	R2	Pot 200Ω Bourns 3214W
C11	Cap RF 9.1pF ATC100B	R3	Res, 0805 75Ω, 1%
C16	Cap 10uF/50V Murata GRM32ER71H106KA12L	R4,R5	Res, 0805 430Ω, 1%
C15	Cap Elco 220 uF / 63V	R6,R9	Res, 0805 1,1kΩ, 1%
L1	Ferroxbead small	R8	Res, 0805 11kΩ, 1%
L2	N=4 turns, D=5mm, L=4.8mm, CU -wire 0.8mm	R10	Res, 0805 5,1Ω, 1%
L3	N=4 turns, D=5mm, L=4.2mm, CU -wire 0.8mm	R11,R17	Res, 0805 9,1Ω, 1%
L4	N=6 turns, D=8.2mm, L=6.5mm, CU -wire 0.8mm	R12	Res, 2x4kΩ//, 0.6W
		R13	Res, 0805 5,1kΩ, 1%
		R14	Res, 0805 910Ω, 1%
		R15	Res, 100Ω, 0.6W
		R16	Res, 0805 10Ω, 1%

6. Attachments

Please see the attachment for the DXF files.

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