

CA-226-11

BLF573 108MHz; Board 1721

Rev. 1 — 5 August 2011

AMPLEON

Test Report

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1. Demo and Transistor Details

Frequency Band	108 MHz
Modulation	CW
Transistor	BLF573(soldered down)
Date Code	m0919
Board Number	1721

2. Introduction

This report gives the results for the BLF573, a High Voltage (50V) LDMOS transistor in a SOT502 package. The transistor is soldered down to the heat sink. A 108MHz demo has been designed and CW performance has been recorded at $V_{DS}=50V$, $I_{DQ}=1350mA$, $T_H=25^{\circ}C$ and $f=108MHz$.

- CW Peak Power
- Network Analyzer Gain, IRL at $P_{out} = 38dBm$
- CW Harmonics

All testing has been performed at $V_{DS} = 50V$, $I_{DQ} = 1350mA$, and $T_H = 25^{\circ}C$

3. Test Circuit

A description of this circuit can be found in **Appendix A**. The test circuit has been designed on Taconic RF35, 35 mils thick.

Supply voltage (drain-source) is typical 50V. The gate biasing circuit is fed from the 50V supply line through a 1k5 / 1W resistor. There is an 8V regulator on-board. The gate biasing circuitry typically draws 18mA. I_{DQ} can be set by R1 (see appendix A).

4. RF Performance

Freq. (MHz)	G_p (dB)	η_D (%)	P_{PEAK} (P3dB) (dBm)	P_{PEAK} (P3dB) (W)	2 nd Harmonic (dBc)	3 th Harmonic (dBc)
108	25.42	80.6	55.28	337	-20.0	-41.2

has been performed at $V_{DS} = 50V$, $I_{DQ} = 1350mA$, and $T_H = 25^{\circ}C$

Table 1. RF Performance Summary @ P_{out} @ P3dB

5. CW Test Results

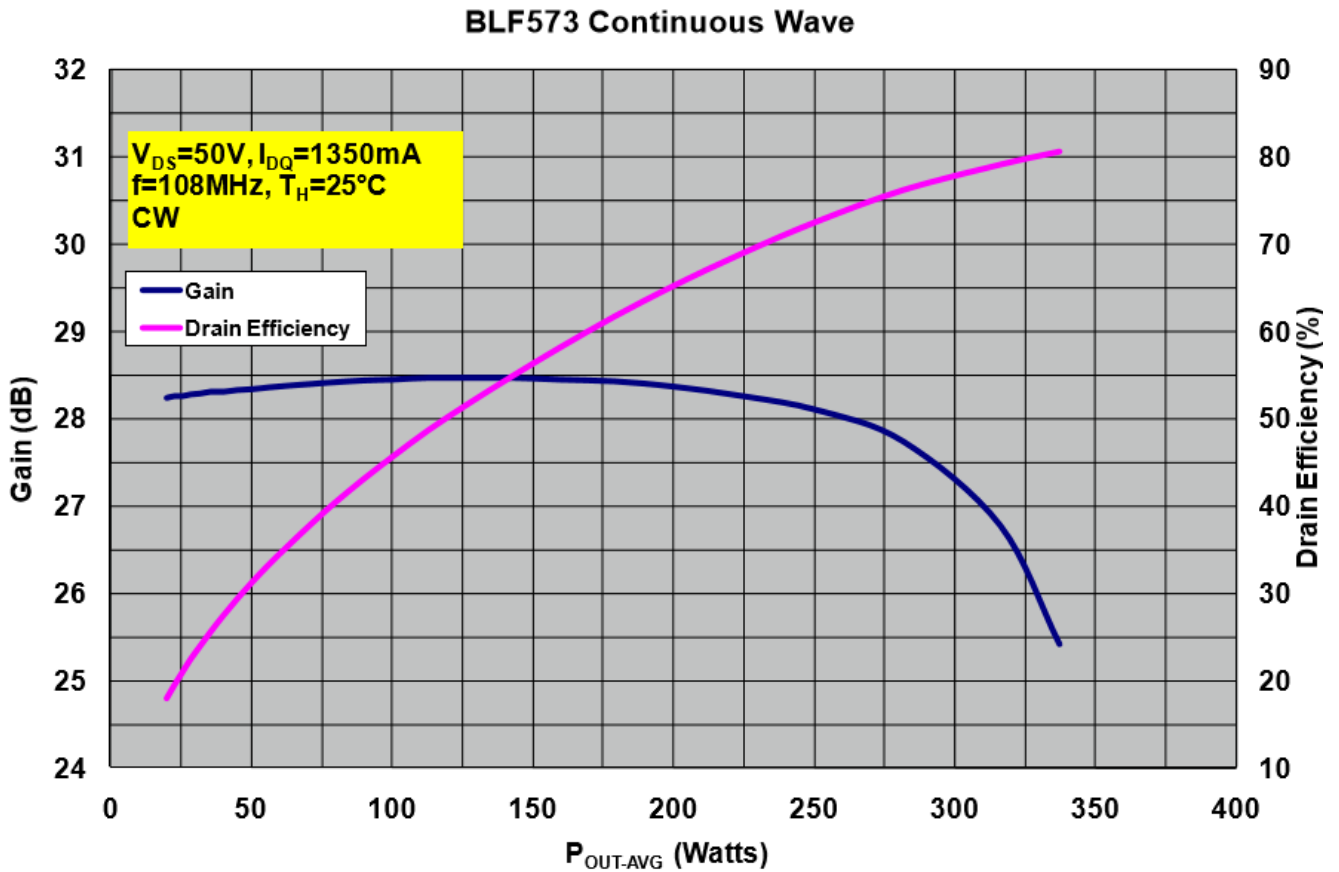


Figure 1. CW Gain and efficiency as a function of output power

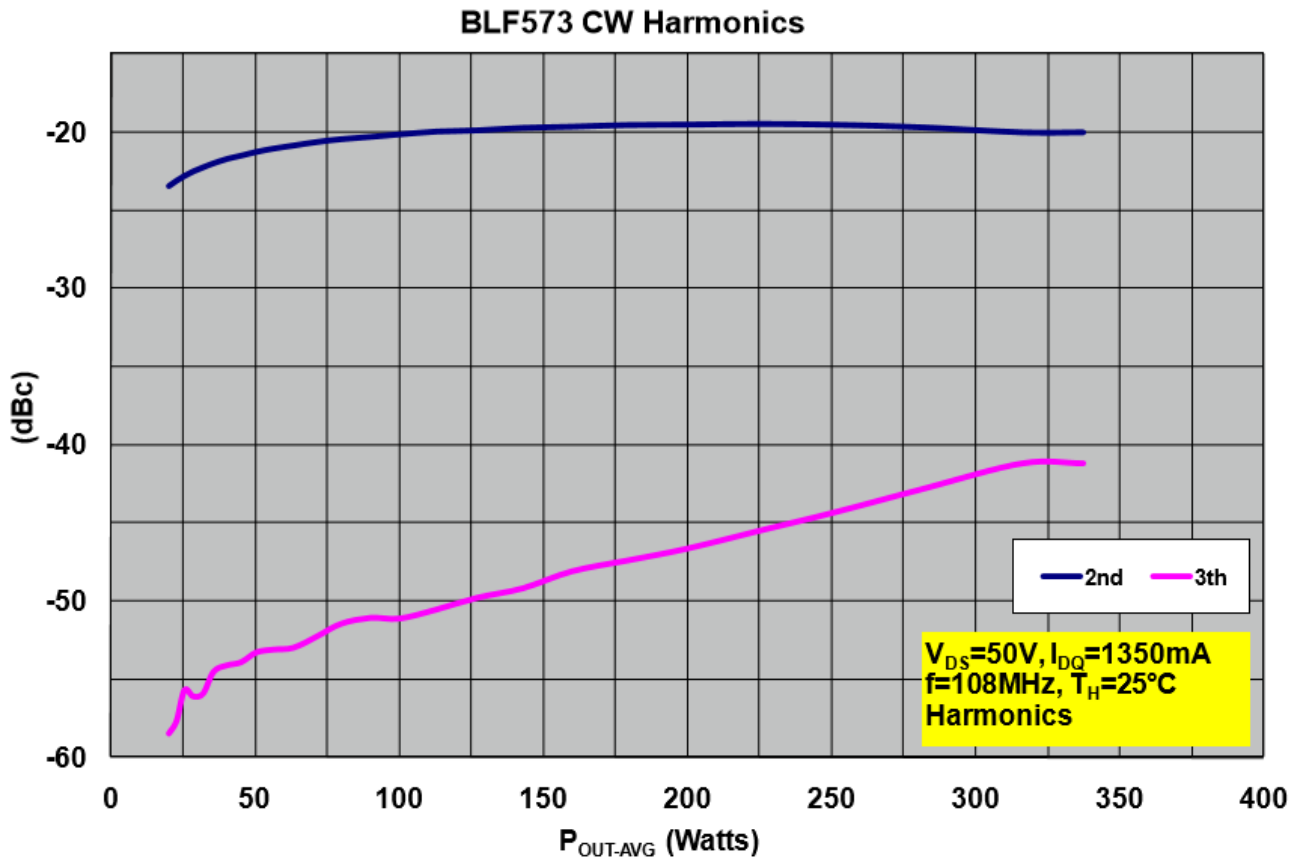


Figure 2. 2nd & 3th Harmonics power as a function of output power

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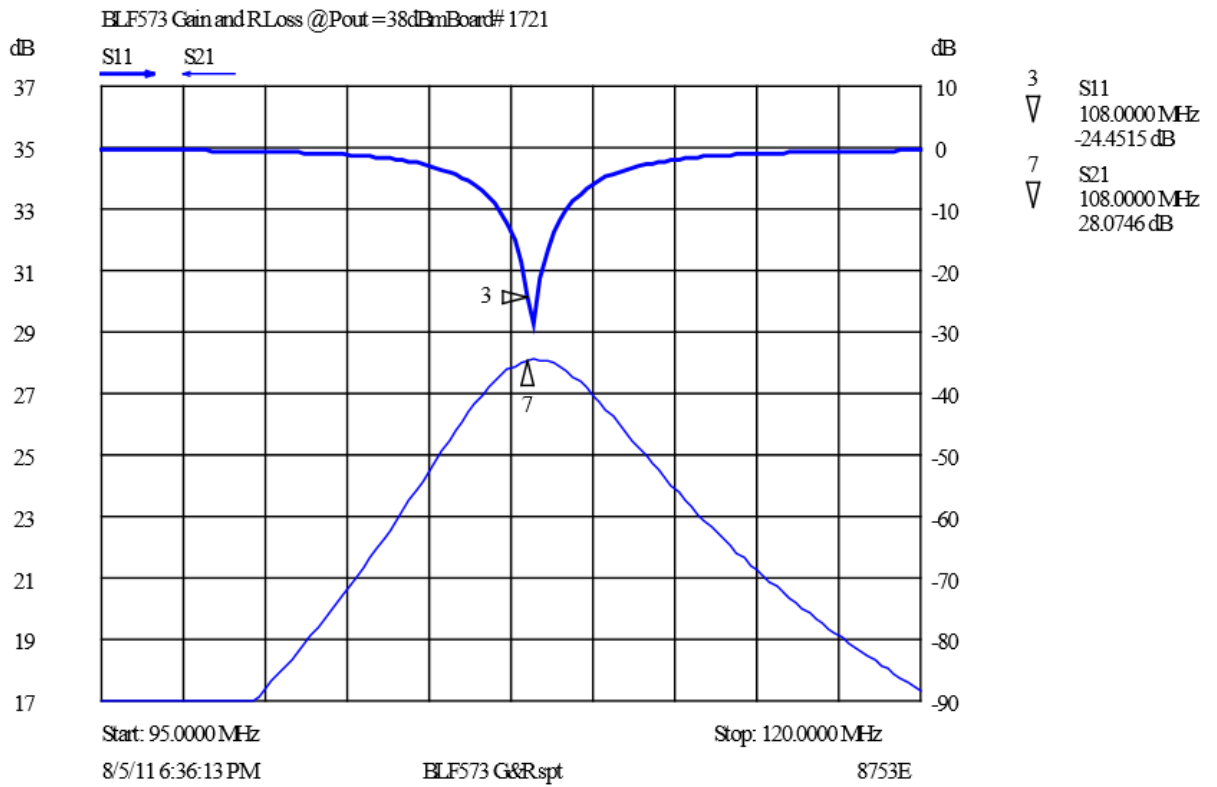


Figure 3. Gain and Input Return Loss

6. Data Files



BLF573 BD#1721
Data.xls

7. Appendix A: Test Circuit and Component List for the BLF573

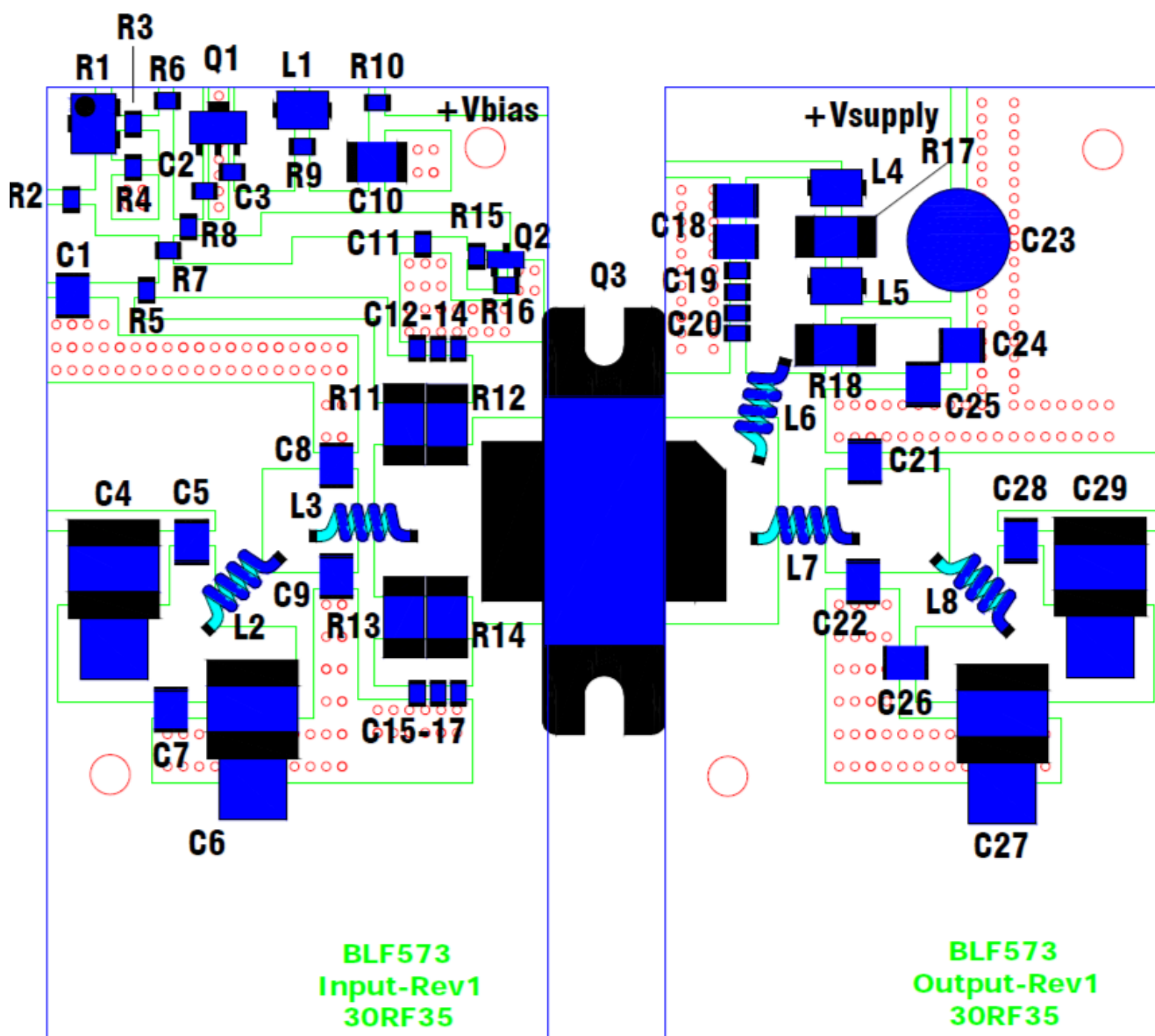


Figure 4. BLF573S Test Circuit

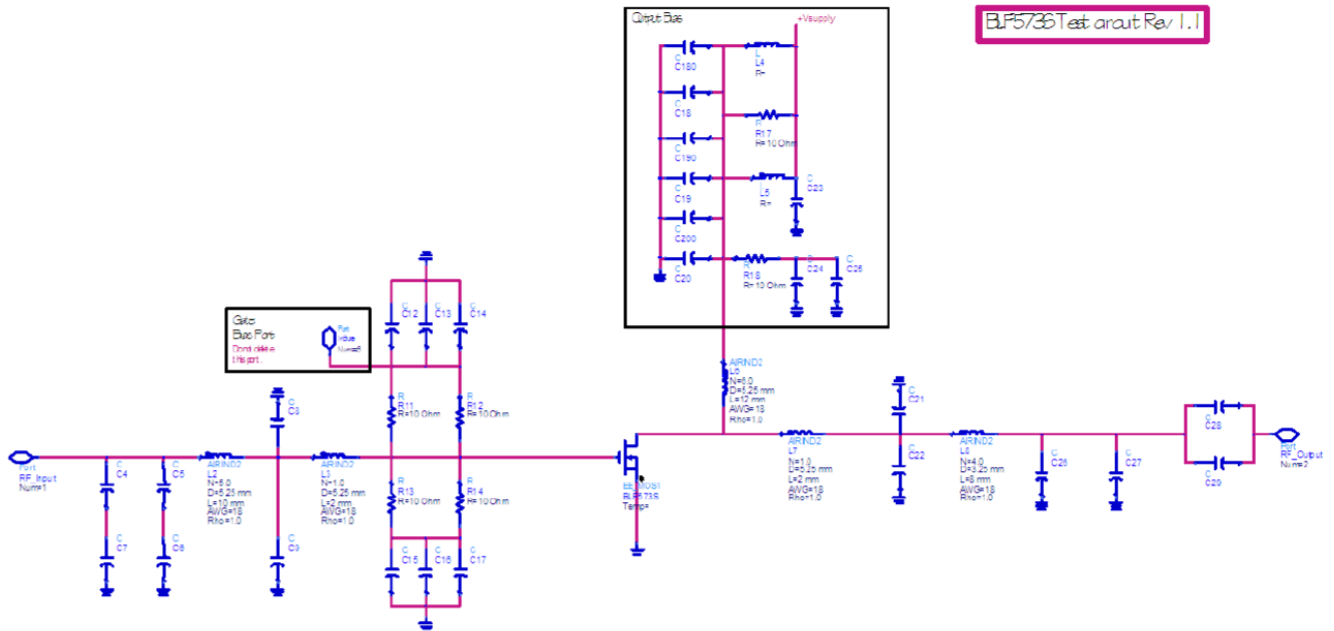


Figure 5. BLF573S Test Circuit Schematic

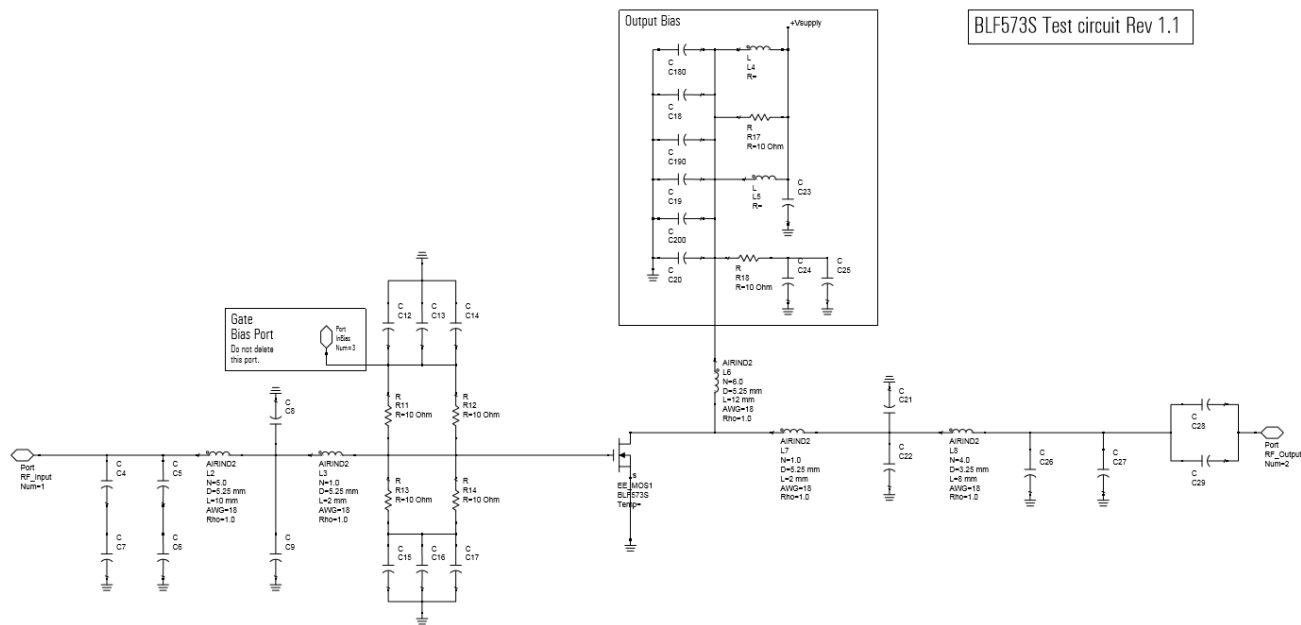
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8. Appendix A – List of components

List of components BLF573 (Rev1)	
Component	Description
Q	78L08
1	Regulator
Q	2N2222
2	BLF573
Q	
3	Ferroxcube Bead
	Wirewound inductor, 5 turns, 18GA #24840 Consolidated Inc.
L1,L4,	Wirewound inductor, 1 turn, 18GA #24840 Consolidated Inc.
L5 L2	Wirewound inductor, 6 turns, 18GA #24840 Consolidated Inc.
L	Wirewound inductor, 1 turn, 1.3mm silver wire, internal diameter
3	5.5mm Wirewound inductor, 4 turns, 18GA #24840 Consolidated
L	Inc.
6	Note: All wirewound inductors have spacing between the turns equal
L	to the half the diameter of the wire used.
7	
L	
8	1uF/50V muRata GRM31MR71H105KA88L
	100nF/50V muRata GRM21BR71H104KA01L
	Johnson 5201 (0.7-10pF) (VDC break down =250V)
	Tronser # 66-0315-00008-000 (0.8-8pf) (VDC break down
	=1000V) Not populated
C1,C10	7.5pF ATC100B
C2,C3,C	9.1pF ATC100B
11	100nF/100V muRata GRM319R72A104KA01D
C4,C6,C	2.2uF/100V muRata GRM32ER72A225KA35
29 C27	1.5nF/100V muRata GRM219R72A152KA01D
C	100nF/100V muRata GRM319R72A104KA01D
5	27pF ATC100B
C	1000uF/100V
7	27pF ATC100B
C8,C9	20pF ATC100B
C12–C17,	
C24,C25	200Ω potmeter
C18,C180	2k
C19,C190	Ω
C20,C200	43
C21,C22	0Ω
C	75Ω
2	5.1Ω
3	11kΩ
C	1.1kΩ
2	9.1Ω

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