

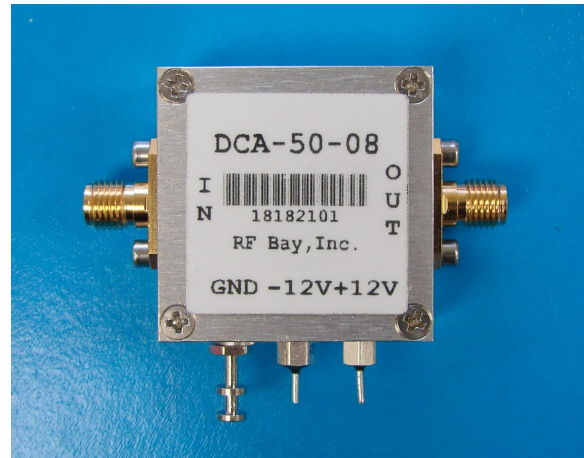
DCA 50 Ω Series

0Hz – 2000MHz DC Coupled Amplifier

Features

- 3-dB Bandwidth: 2000MHz
- Gain: 8dB
- P_{1dB} : +11dBm
- IP3: +26dBm
- Input/Output: 50 Ω
- DC Power: $\pm 12V$
- Internally Voltage Regulated
- SMA Connector

Picture



Description

DCA-50-08 is a 50 Ω 8dB gain DC Coupled Amplifier operates with 3-dB bandwidth of 2000MHz, designed for wideband signal processing application.

Electrical Specifications @ +25 °C, $Z_{in} = Z_{out} = 50 \Omega$, DC Supply = $\pm 12V$

Parameter	Unit	Minimum	Typical	Maximum
Frequency Range (-3dB)	MHz	0		2000
Power Gain S21	f = 0Hz	dB	7.5	8.0
	f = 500MHz	dB	7.5	8.0
	f = 1000MHz	dB	7.3	7.8
	f = 1500MHz	dB	6.8	7.3
	f = 2000MHz	dB	4.5	5.0
Voltage Gain ($R_L = \infty$)	f = 0 Hz		4.8	5
P_{1dB}	f = 10KHz	dBm	+11	+12.4
	f = 500MHz	dBm	+10	+11.3
	f = 1000MHz	dBm	+5.0	+6.5
	f = 1500MHz	dBm	+0.5	+2.0
	f = 2000MHz	dBm	-4.0	-2.5
IP3	f = 100MHz	dBm	+36	+39
	f = 300MHz	dBm	+29	+32
	f = 500MHz	dBm	+23	+26
Slew Rate	$V_{out} = 1.5V/Step$	$\mu s/V$	4500	5500

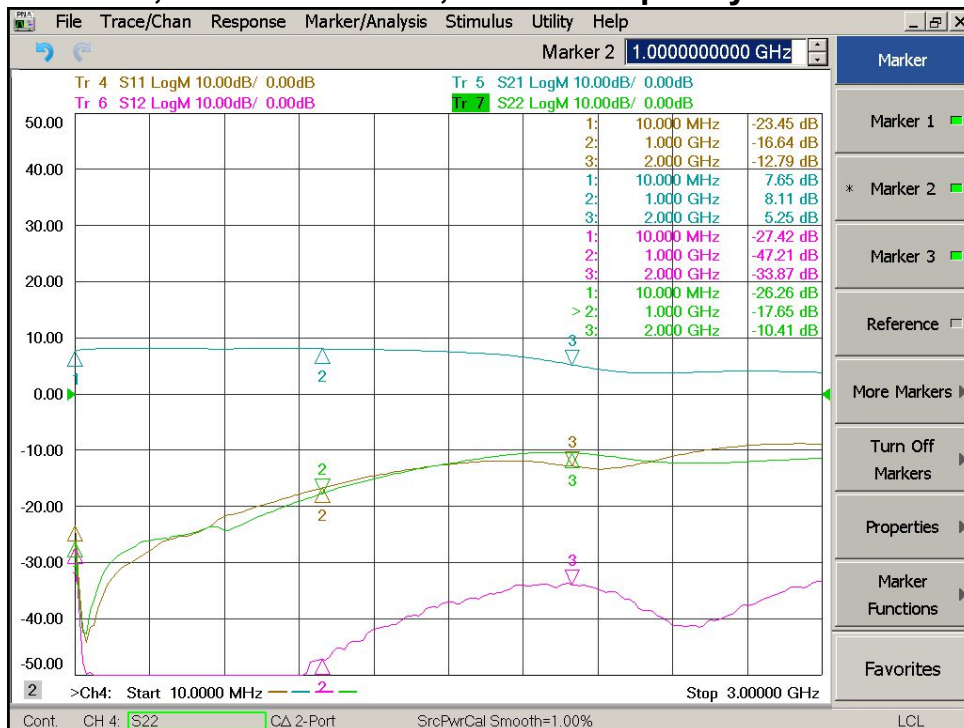
DCA 50 Ω Series

0Hz – 2000MHz DC Coupled Amplifier

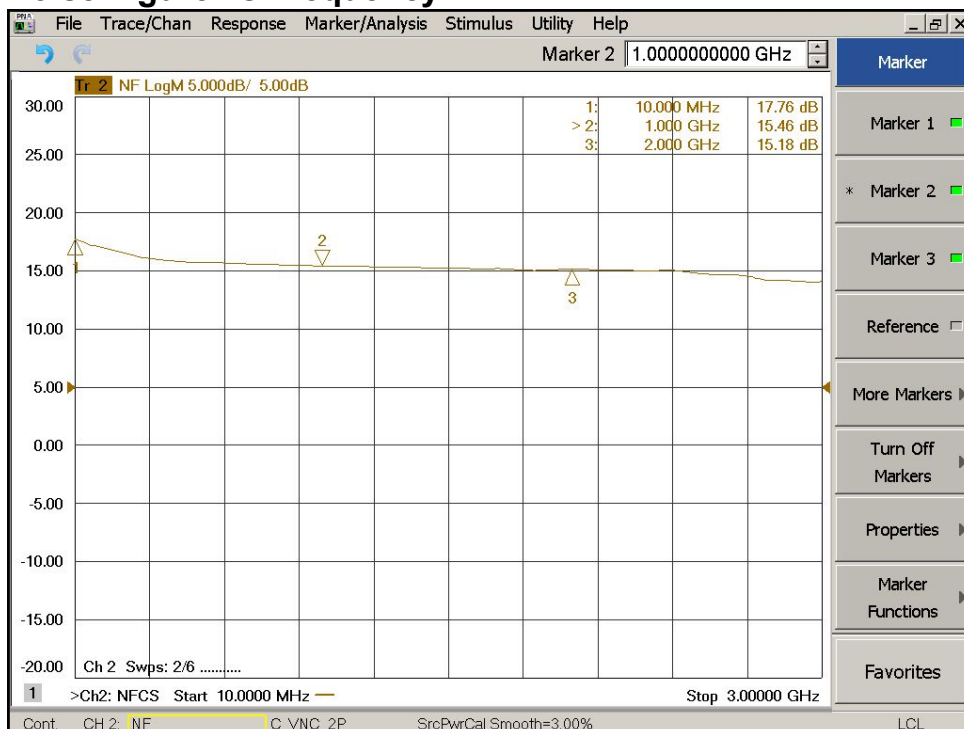
Output Voltage	f = 100KHz	Vp-p	1.3	1.5	
Pin=0dBm $R_L = 50 \Omega$	f = 100MHz	Vp-p	1.3	1.5	
Output Voltage *	f = 100KHz	Vp-p	3.0	3.3	
Pin=0dBm $R_L = \infty$	f = 100MHz	Vp-p	2.6	2.9	
Reverse Isolation S12	f = 1000MHz	dB	-40	-45	
Output Current	f = 100MHz	mA	± 13	± 16	
Noise Figure	f = 1000MHz	dB		16	18
Second Harmonic Distortion	f = 100MHz	dBc	-55	-66	
Third Harmonic Distortion	f = 100MHz	dBc	-50	-62	
Third Order Intermod IMD3	f = 100MHz	dBc	-60	-73	
Settling Time		ns		0.6	1.0
Input VSWR S11	f = 1000MHz			1.2:1	1.5:1
Output VSWR S22	f = 1000MHz			1.2:1	1.5:1
DC Power Supply		V	± 9	± 12	± 15
Supply Current		mA		± 45	± 60
Operating Temperature		$^{\circ}\text{C}$	-40		+85
Size		inch	1.25" x 1.25" x 0.56"		
weight		Oz.	1.5		

* Unit can drive high impedance or capacitive load

Gain S21, Return Loss S11, S22 vs Frequency



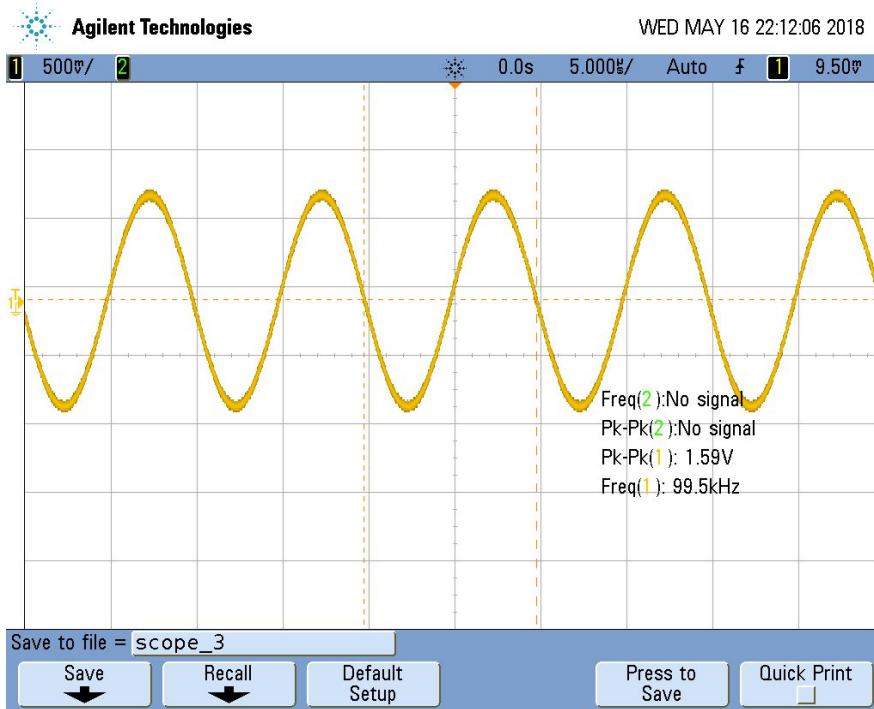
Noise Figure vs Frequency



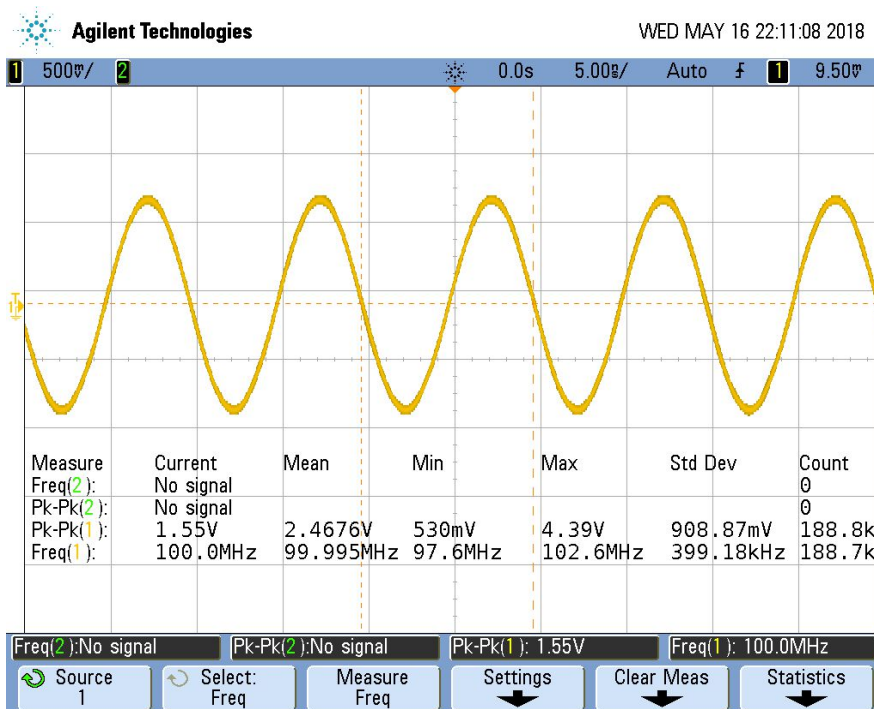
DCA 50 Ω Series

0Hz – 2000MHz DC Coupled Amplifier

Output Waveform at 100KHz Pin=0dBm, RL= 50 Ohm



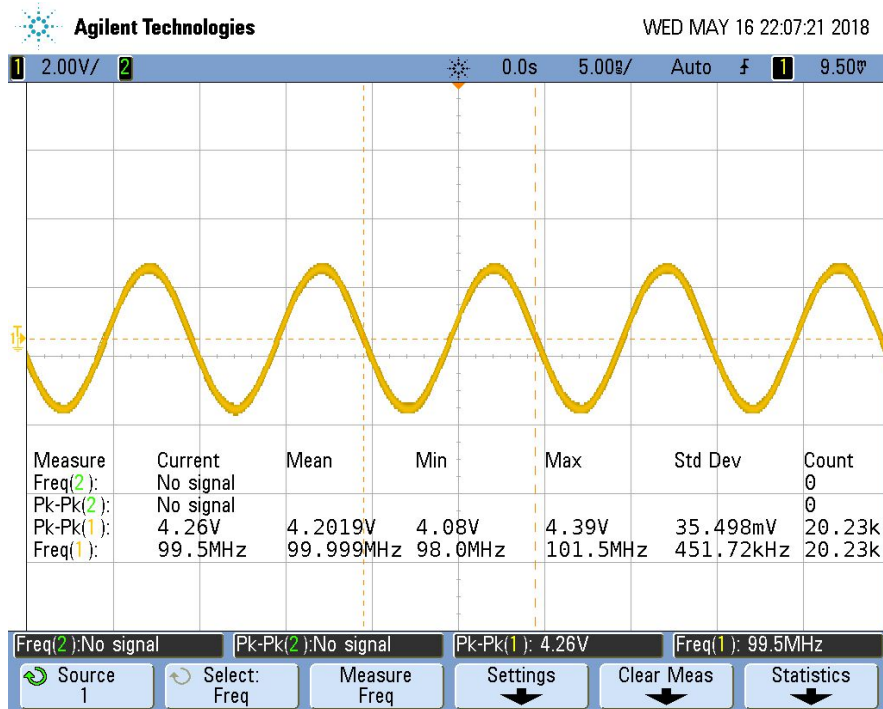
Output Waveform at 100MHz Pin=0dBm, RL= 50 Ohm



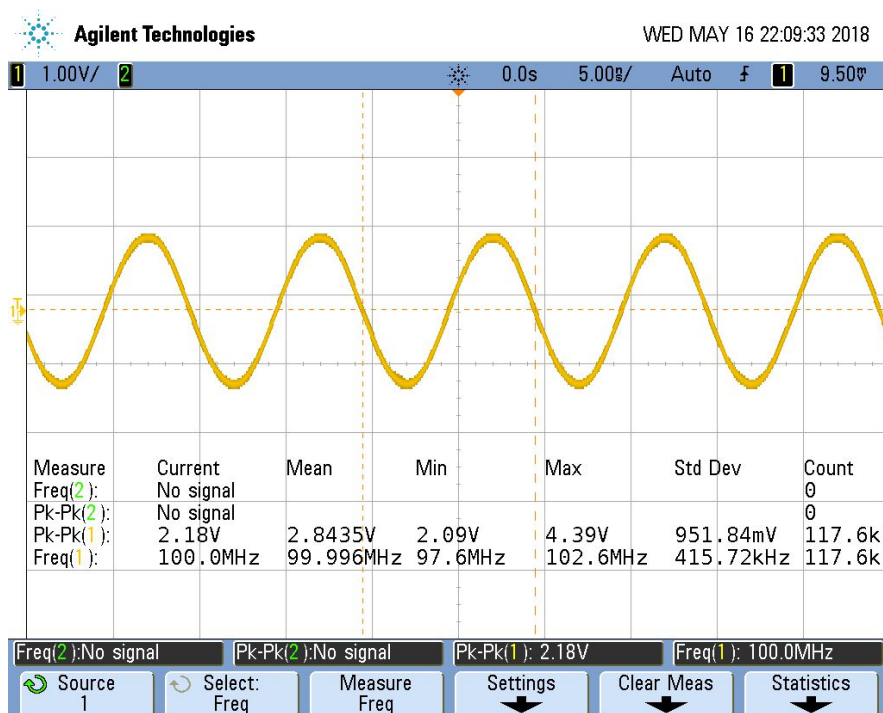
DCA 50 Ω Series

0Hz – 2000MHz DC Coupled Amplifier

Output Waveform at 100MHz Pin=+3dBm, RL= High Z



Output Waveform at 100MHz Pin=+3dBm, RL= 50 Ohm



DCA 50 Ω Series

0Hz – 2000MHz DC Coupled Amplifier

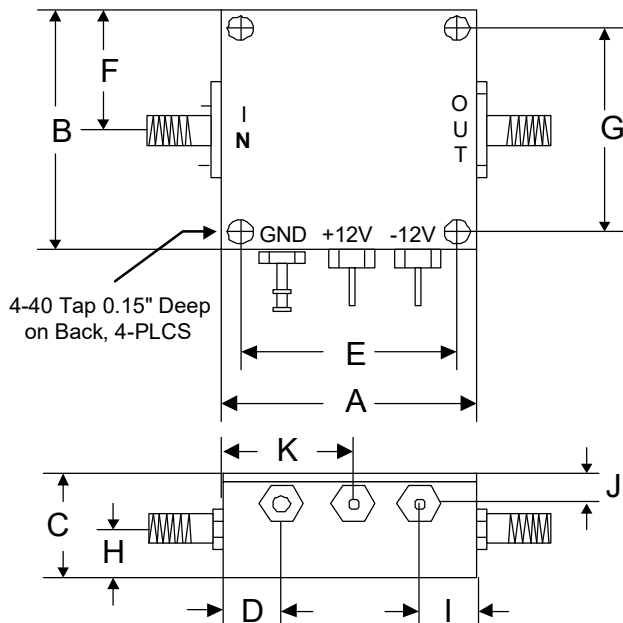
Absolute Maximum Ratings

Parameter	Absolute Maximum
DC Supply Voltage	± 25V
Input DC Voltage	± 2V
RF Input Power	+13dBm
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-55 °C to +125 °C

ESD Sensitive Material



Outline



	A	B	C	D	E	F	G	H	I	J	K
Inch	1.250	1.250	0.563	0.325	1.000	0.625	1.000	0.250	0.325	0.187	0.625
mm	31.75	31.75	14.29	8.26	25.40	15.88	25.40	6.35	8.26	4.76	15.88