

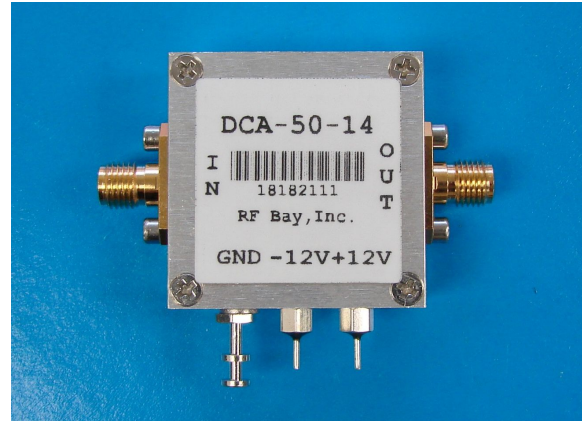
## DCA 50 $\Omega$ Series

## 0Hz – 1500MHz DC Coupled Amplifier

### Features

- 3-dB Bandwidth: 1500MHz
- Gain: 14dB
- $P_{1dB}$ : +11dBm
- IP3: +25dBm
- Input/Output: 50  $\Omega$
- DC Power:  $\pm 12V$
- Internally Voltage Regulated
- SMA Connector

### Picture



### Description

DCA-50-14 is a 50  $\Omega$  14dB gain DC Coupled Amplifier operates with 3-dB bandwidth of 1500MHz, designed for wideband signal processing application.

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

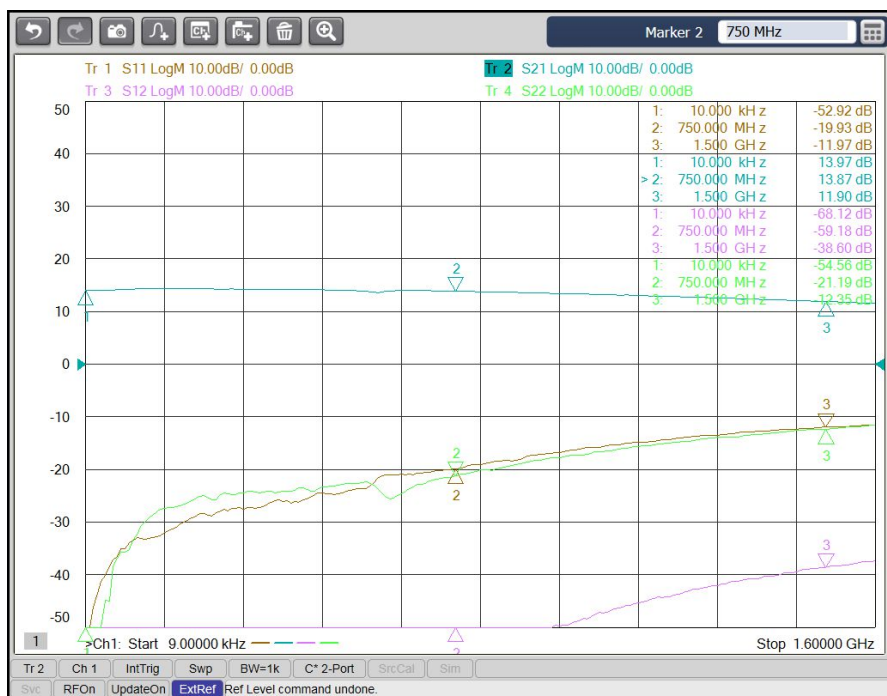
Parameter	Unit	Minimum	Typical	Maximum
Frequency Range (-3dB)	MHz	0		1500
Power Gain S21	f = 0Hz	dB	13.0	14.0
	f = 100MHz	dB	13.0	14.0
	f = 500MHz	dB	12.9	13.9
	f = 1000MHz	dB	11.8	12.8
	f = 1500MHz	dB	10.5	11.4
Voltage Gain ( $R_L = \infty$ )	f = 0 Hz		9.5	10
$P_{1dB}$	f = 10KHz	dBm	+10.0	+12.0
	f = 100MHz	dBm	+10.5	+12.5
	f = 500MHz	dBm	+9.0	+11.0
	f = 1000MHz	dBm	+4.5	+6.5
	f = 1500MHz	dBm	+0.5	+2.5
IP3	f = 100MHz	dBm	+33	+37
	f = 300MHz	dBm	+24	+27
	f = 500MHz	dBm	+22	+25
Slew Rate	$V_{out} = 1.8V/Step$	$\mu s/V$	4500	5500

**DCA 50  $\Omega$  Series**
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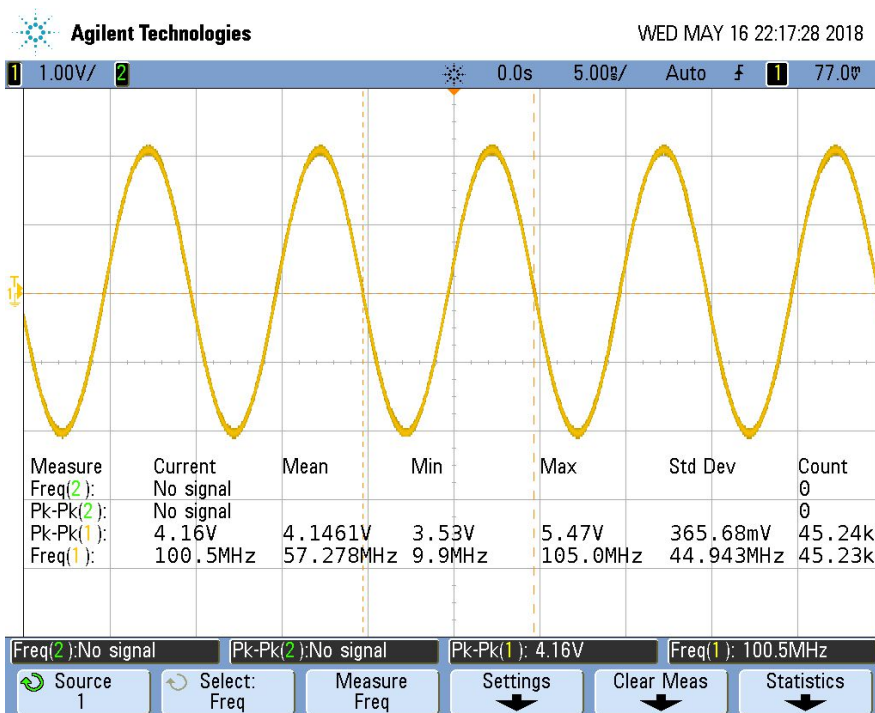
Output Voltage	f = 100KHz	Vp-p	1.4	1.7	
Pin=-5dBm $R_L = 50 \Omega$	f = 100MHz	Vp-p	1.4	1.7	
Output Voltage *	f = 100KHz	Vp-p	2.5	3.5	
Pin=-5dBm $R_L = \infty$	f = 100MHz	Vp-p	2.3	3.3	
Reverse Isolation S12	f = 750MHz	dB	-45	-55	
Output Current	f = 100MHz	mA	$\pm 15$	$\pm 18$	
Noise Figure	f = 750MHz	dB		16	18
Second Harmonic Distortion	f = 100MHz	dBc	-53	-63	
Third Harmonic Distortion	f = 100MHz	dBc	-45	-55	
Third Order Intermod IMD3	f = 100MHz	dBc	-57	-67	
Settling Time		ns		2.0	3.0
Input VSWR S11	f = 750MHz			1.2:1	1.5:1
Output VSWR S22	f = 750MHz			1.2:1	1.5:1
DC Power Supply		V	$\pm 9$	$\pm 12$	$\pm 15$
Supply Current		mA		$\pm 45$	$\pm 60$
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**



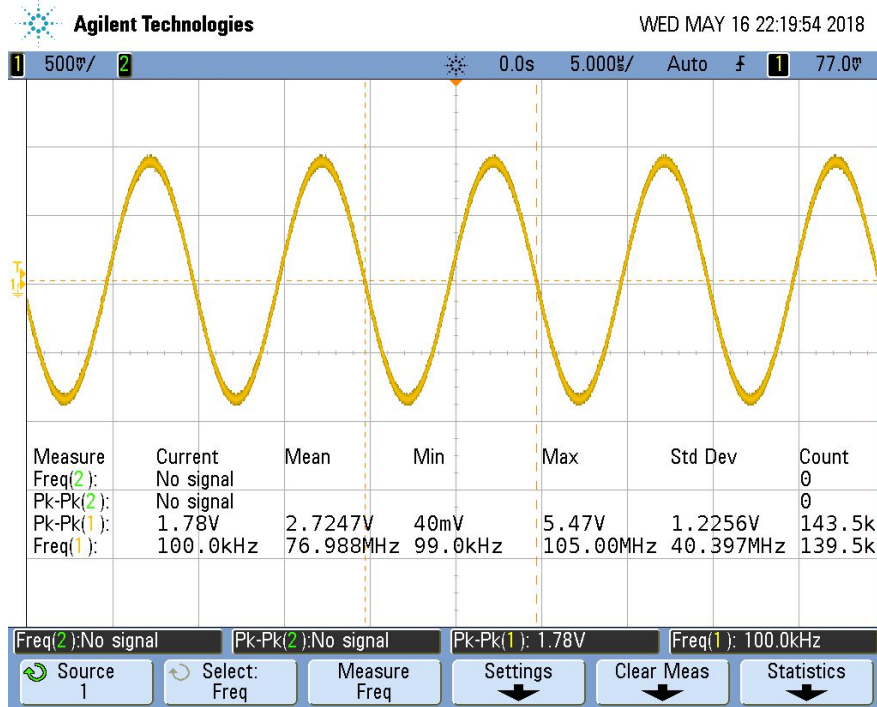
**Output Waveform at 100MHz, Pin= -5dBm, RL= High Z**



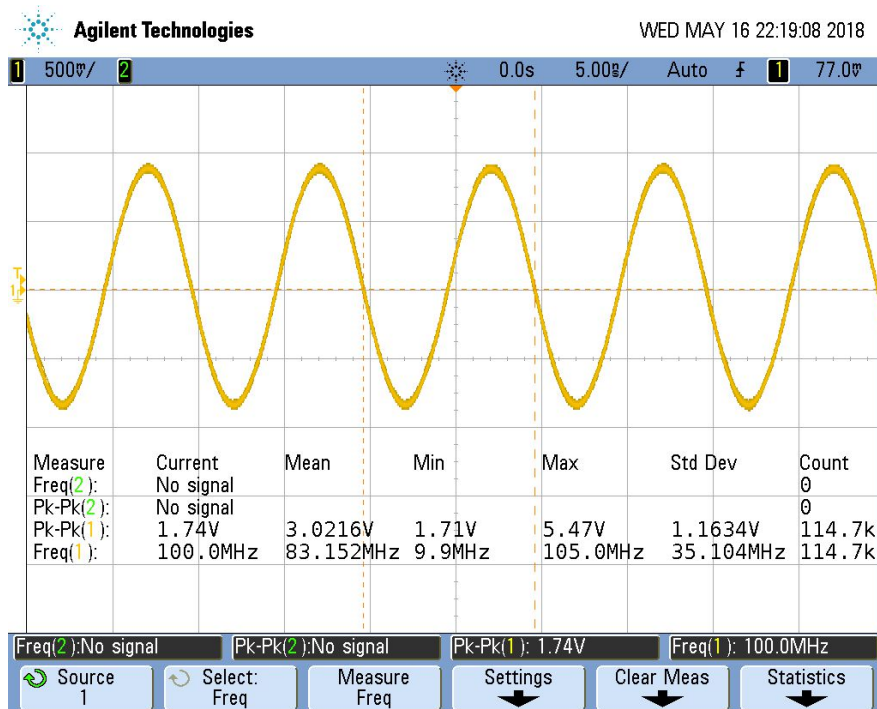
**DCA 50 Ω Series**

**0Hz – 1500MHz DC Coupled Amplifier**

**Output Waveform at 100KHz Pin=-5dBm, RL= 50 Ohm**



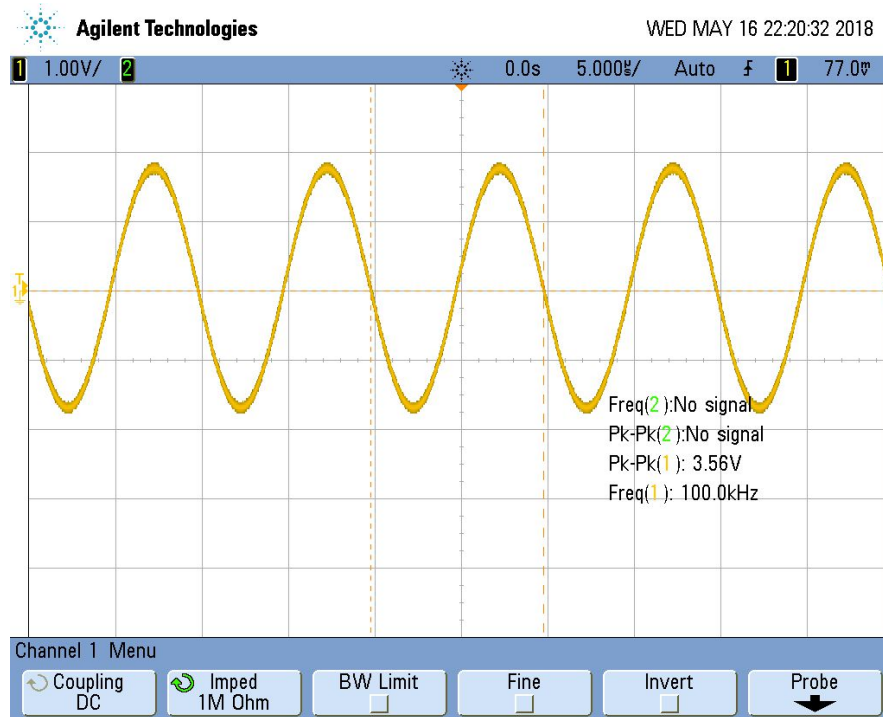
**Output Waveform at 100MHz Pin=-5dBm, RL= 50 Ohm**



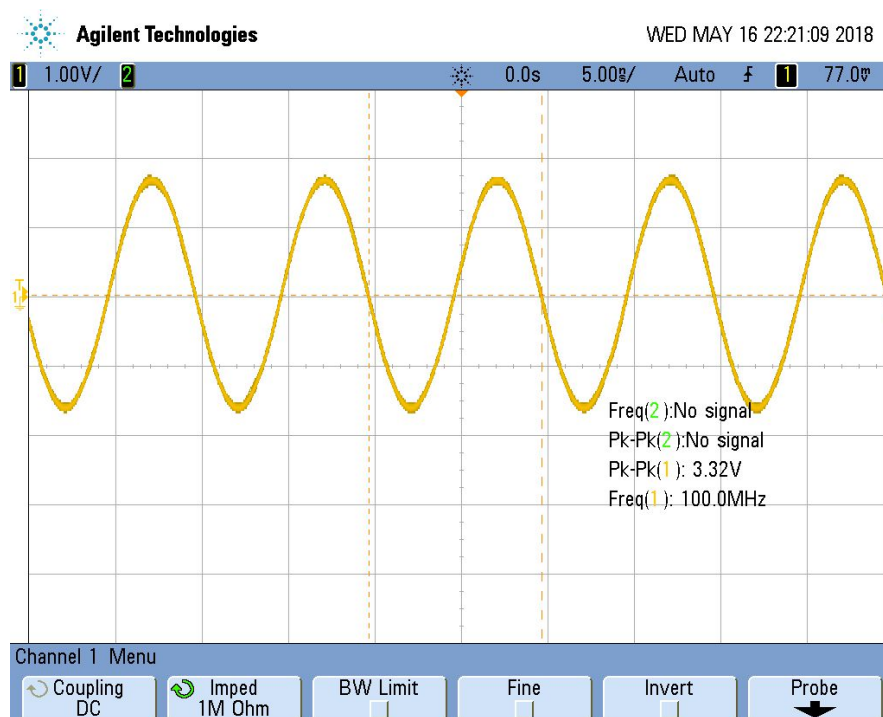
## DCA 50 $\Omega$ Series

## 0Hz – 1500MHz DC Coupled Amplifier

### Output Waveform at 100KHz Pin=-5dBm, RL= High Z



### Output Waveform at 100MHz Pin=-5dBm, RL= High Z



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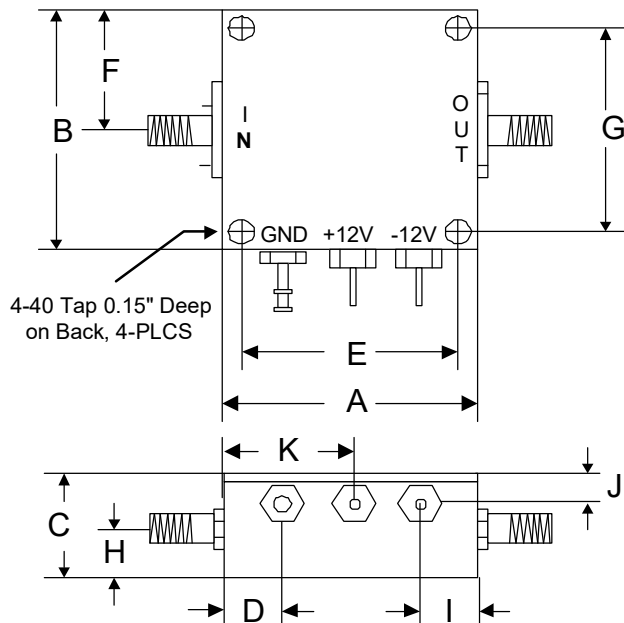
### Absolute Maximum Ratings

Parameter	Absolute Maximum
DC Supply Voltage	$\pm 25V$
Input DC Voltage	$\pm 2V$
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
<b>Inch</b>	1.250	1.250	0.563	0.325	1.000	0.625	1.000	0.250	0.325	0.187	0.625
<b>mm</b>	31.75	31.75	14.29	8.26	25.40	15.88	25.40	6.35	8.26	4.76	15.88