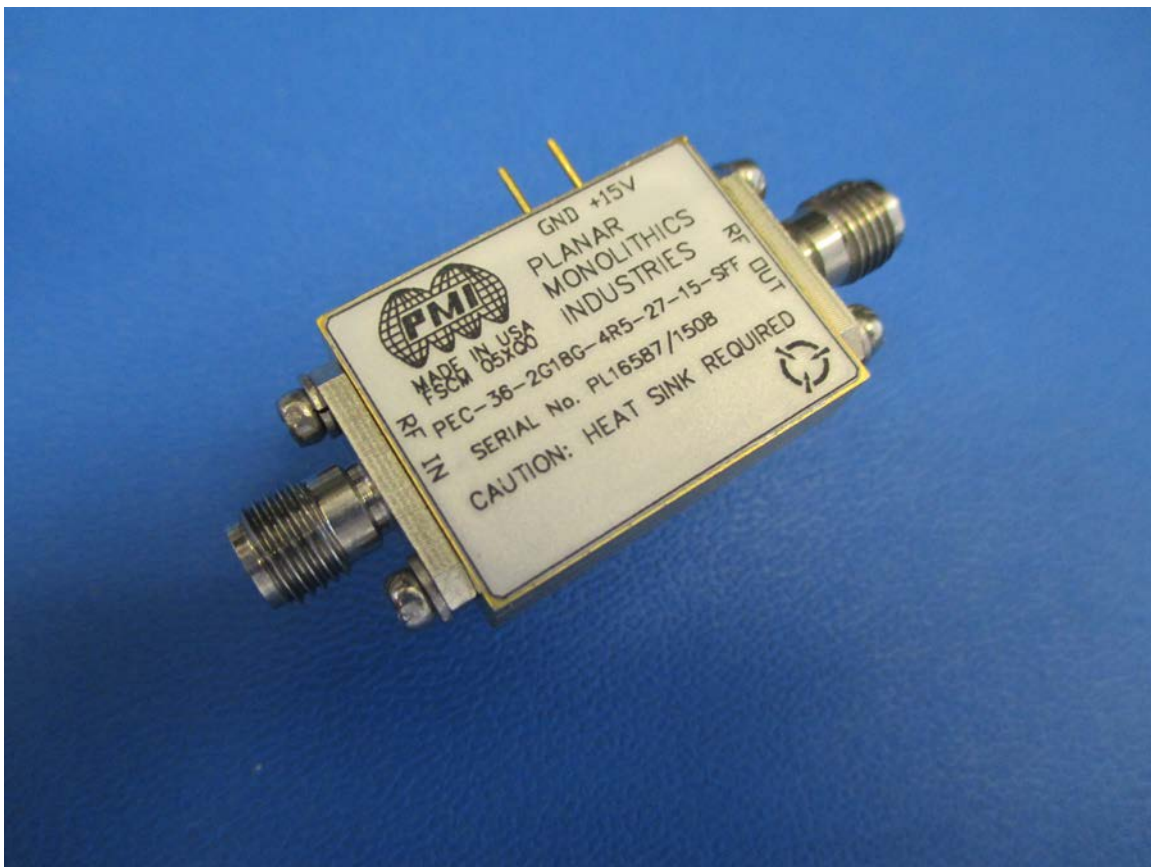




## **Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF**

**PMI Model No. PEC-36-2G18G-4R5-27-15-SFF is a 2.0 to 18.0 GHz medium power, low noise amplifier offering 36dB gain and an OP1dB of +27dBm with a low noise figure of 4.5dB This amplifier is supplied in a housing measuring 1.0" X 0.63" X 0.25" with SMA female connectors.**



**February 23th, 2013  
Designed By: Kevin Mason  
Reported & Tested By: E.Benson & Jerry Wade**



# **Typical Characteristics** **On** **PEC-36-2G18G-4R5-27-15-SFF**

## **DESCRIPTION:**

PMI MODEL NUMBER: PEC-36-2G18G-4R5-27-15-SFF IS A 2.0 TO 18.0 GHz MEDIUM POWER, LOW NOISE AMPLIFIER OFFERING 36dB GAIN AND A DP1dB OF +27dBm WITH A LOW NOISE FIGURE OF 4.5dB. THIS AMPLIFIER IS SUPPLIED IN A HOUSING MEASURING 1.0" X 0.63" X 0.25" WITH SMA FEMALE CONNECTORS.

## **SPECIFICATIONS:**

|                    |                                 |
|--------------------|---------------------------------|
| FREQUENCY:         | 2.0 TO 18.0 GHz                 |
| GAIN:              | 36dB TYPICAL                    |
| GAIN FLATNESS:     | +/-1.5dB TYPICAL                |
| NOISE FIGURE:      | 4.5dB TYPICAL, 5.0dB MAX.       |
| OP1dB:             | +26.5dBm MIN., +27.5dBm TYPICAL |
| VSWR INPUT/OUTPUT: | 2.0:1 MAX.                      |
| IMPEDANCE:         | 50 OHMS                         |
| INPUT POWER:       | +20dBm CW MAX.                  |
| DC VOLTAGE SUPPLY: | +15VDC                          |
| DC CURRENT DRAW:   | 850mA NOMINAL                   |
| CONNECTORS IN/OUT: | SMA FEMALE CONNECTORS           |
| FINISH:            | GOLD PLATED                     |

## **FEATURES:**

INTERNAL VOLTAGE REGULATION  
REVERSE VOLTAGE PROTECTION  
UNCONDITIONAL STABILITY

## **AVAILABLE OPTIONS:**

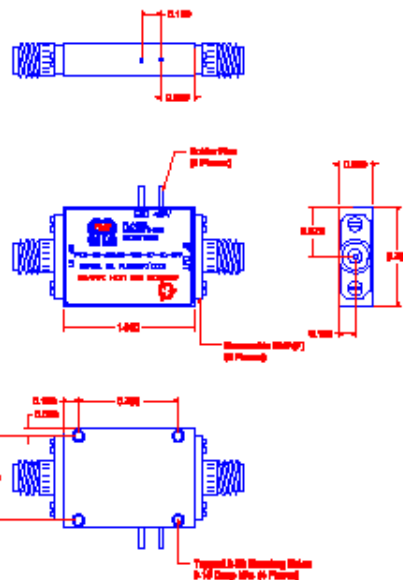
VARIOUS PACKAGE TYPES  
VARIOUS CONNECTOR TYPES  
HERMETIC SEALING  
GAIN AND PHASE MATCHING  
MIL-STD-883 SCREENING AVAILABLE

## **ENVIRONMENTAL RATINGS:**

|                   |                                                               |
|-------------------|---------------------------------------------------------------|
| TEMPERATURE:      | -55 TO +85 DEG. C (OPERATING)<br>-65 TO +125 DEG. C (STORAGE) |
| HUMIDITY:         | MIL-STD-202F, METHOD 103B COND. B                             |
| SHOCK:            | MIL-STD-202F, METHOD 213B COND. C                             |
| ALTITUDE:         | MIL-STD-202F, METHOD 105C COND. B                             |
| TEMPERATURE CYCLE | MIL-STD-202F, METHOD 107D COND. A                             |

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION  
NOTE: SPECIFICATIONS ARE VALID AT +25C.

| REVISIONS |    |                  |          |
|-----------|----|------------------|----------|
| DATE      | BY | DESCRIPTION      | APPROVED |
| 11/14/14  |    | ORIGINAL RELEASE |          |
|           |    |                  |          |
|           |    |                  |          |



ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
XXX ±0.005  
XXX ±0.010

PMI CONFIDENTIAL AND PROPRIETARY

**PLANAR MONOLITHICS INDUSTRIES, INC.**

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E-MAIL: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)  
ISO 9001 CERTIFIED



| APPROVAL |          | DATE  |          | TITLE           |                            |
|----------|----------|-------|----------|-----------------|----------------------------|
| DESIGN   | 10/14/14 | DATE  | 10/14/14 | PRODUCT FEATURE | PEC-36-2G18G-4R5-27-15-SFF |
| CHECKED  |          | REV   |          | REV             |                            |
|          |          | A     | 05XQ0    | 27024404        | 1                          |
|          |          | SCALE | N: S     |                 | 1 OF 1                     |



# **Typical Characteristics** **On** **PEC-36-2G18G-4R5-27-15-SFF**

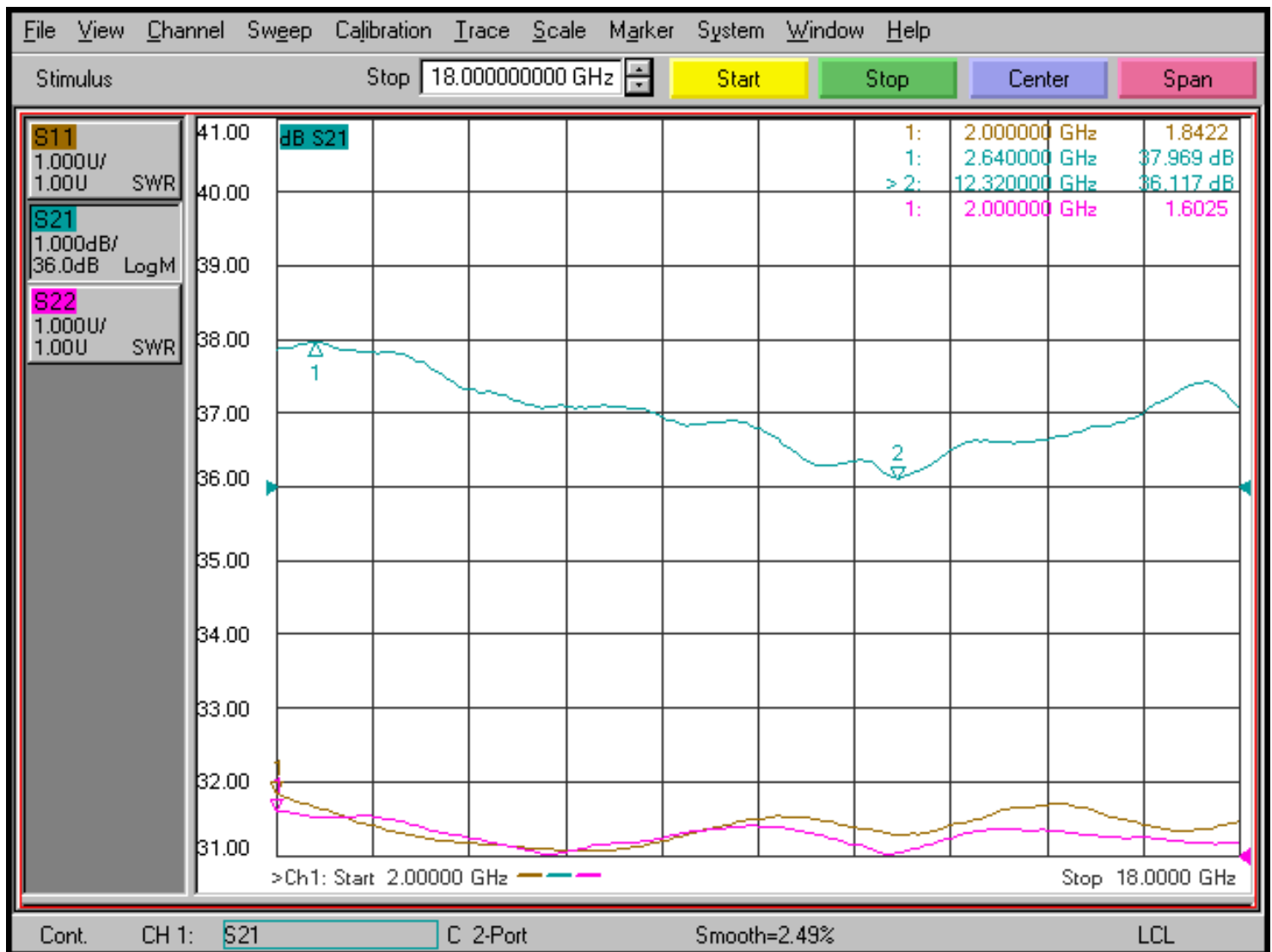
## **Typical Data @+25C**

| TEST.<br>ITEM NO | PARAMETERS                             | SPECIFIED VALUE                     | TEST<br>RESULTS                                         |
|------------------|----------------------------------------|-------------------------------------|---------------------------------------------------------|
| 1                | Frequency Range:                       | 2.0 GHz to 18.0 GHz                 | <b>2.0 GHz to 18.0 GHz</b><br>See Plot                  |
| 2                | Gain:                                  | 36 dB Typical                       | <b>37 dB</b><br>See Plot                                |
| 3                | Gain Flatness:                         | +/- 1.5 dB Typical                  | <b>+/-0.93 dB</b><br>See Plot                           |
| 4                | Noise Figure:                          | 4.5 dB Typical<br>5.0 dB Max        | <b>4.173 dB</b><br>See Plot                             |
| 5                | OP1dB:                                 | +26.5 dBm Min.<br>+27.5 dBm Typical | <b>27.14dBm</b><br><b>28.0 dBm</b><br>See Plot          |
| 6                | IP3                                    | Not Specified                       | <b>+31.5dBm</b><br>See Photo                            |
| 7                | VSWR Input/Output:                     | 2.0:1 Max                           | <b>1.84:1 Input</b><br><b>1.60:1 Output</b><br>See Plot |
| 8                | Impedance:                             | 50 Ohms                             | <b>Pass</b>                                             |
| 9                | Input Power:                           | +20 dBm CW Max.                     | <b>Pass</b>                                             |
| 10               | DC Voltage Supply:<br>DC Current Draw: | +15VDC @ 850 mA Nominal             | <b>+15VDC @ 579mA</b>                                   |



# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

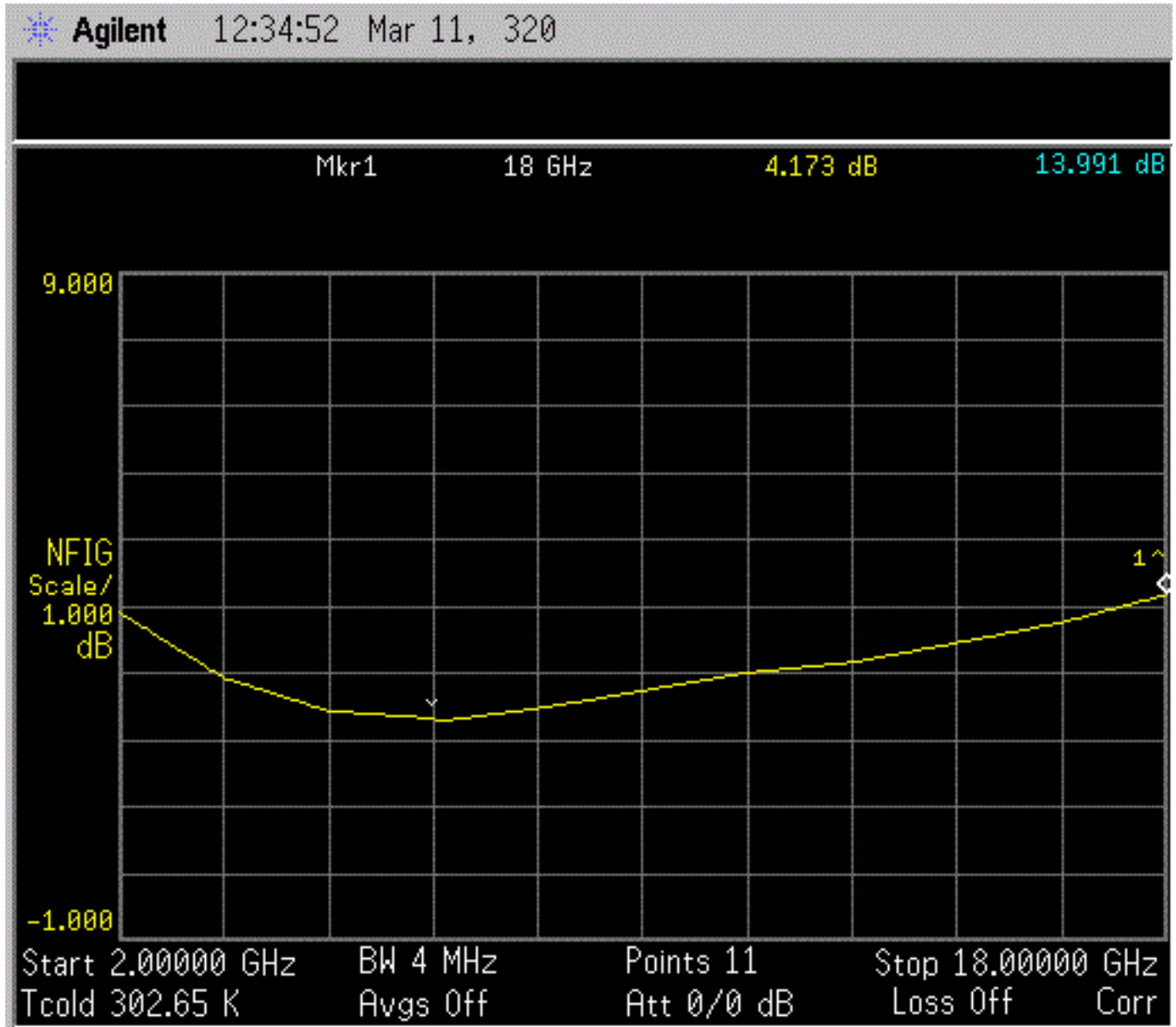
## Small Signal Gain & VSWR @ +25C





# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

Typical Noise Figure @ +25C

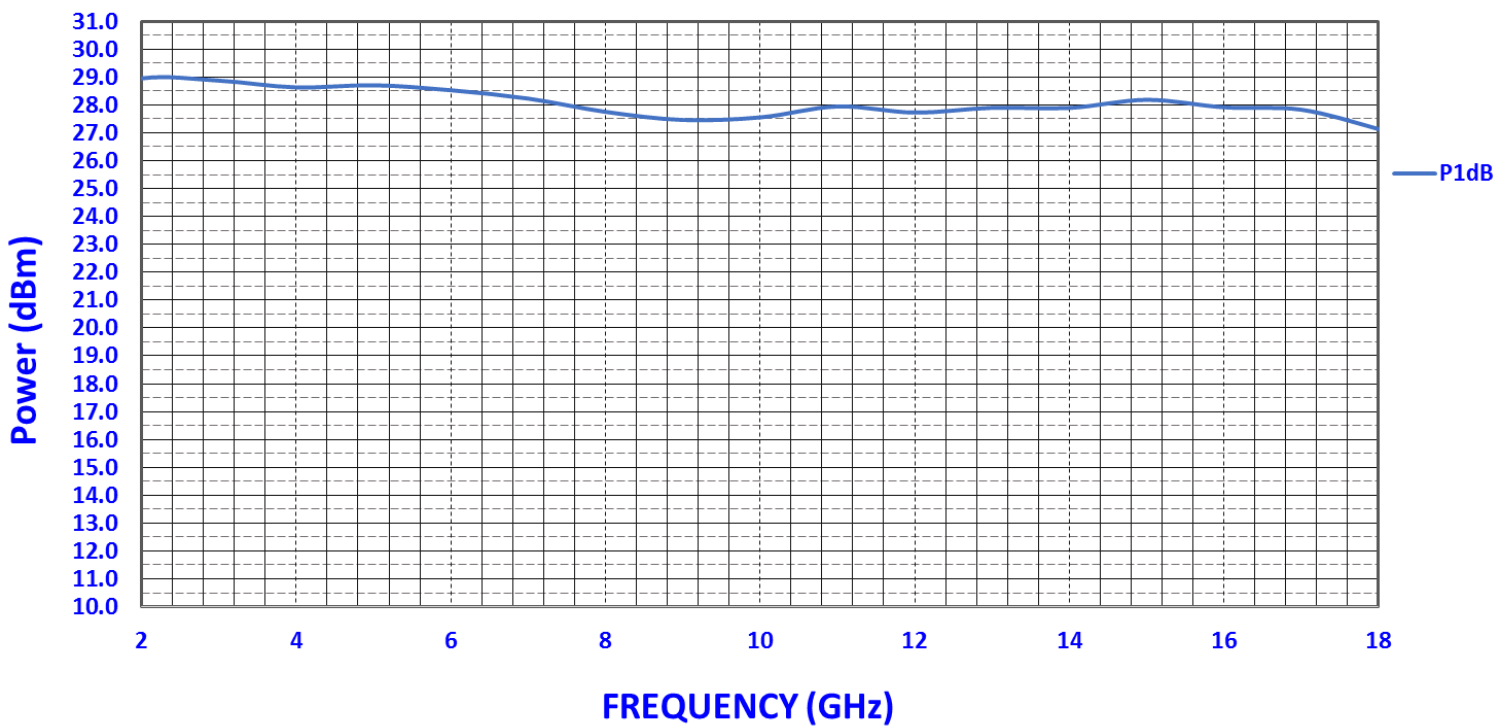




# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

Power Output at 1dB Gain Compression [P1dB] @ +25C

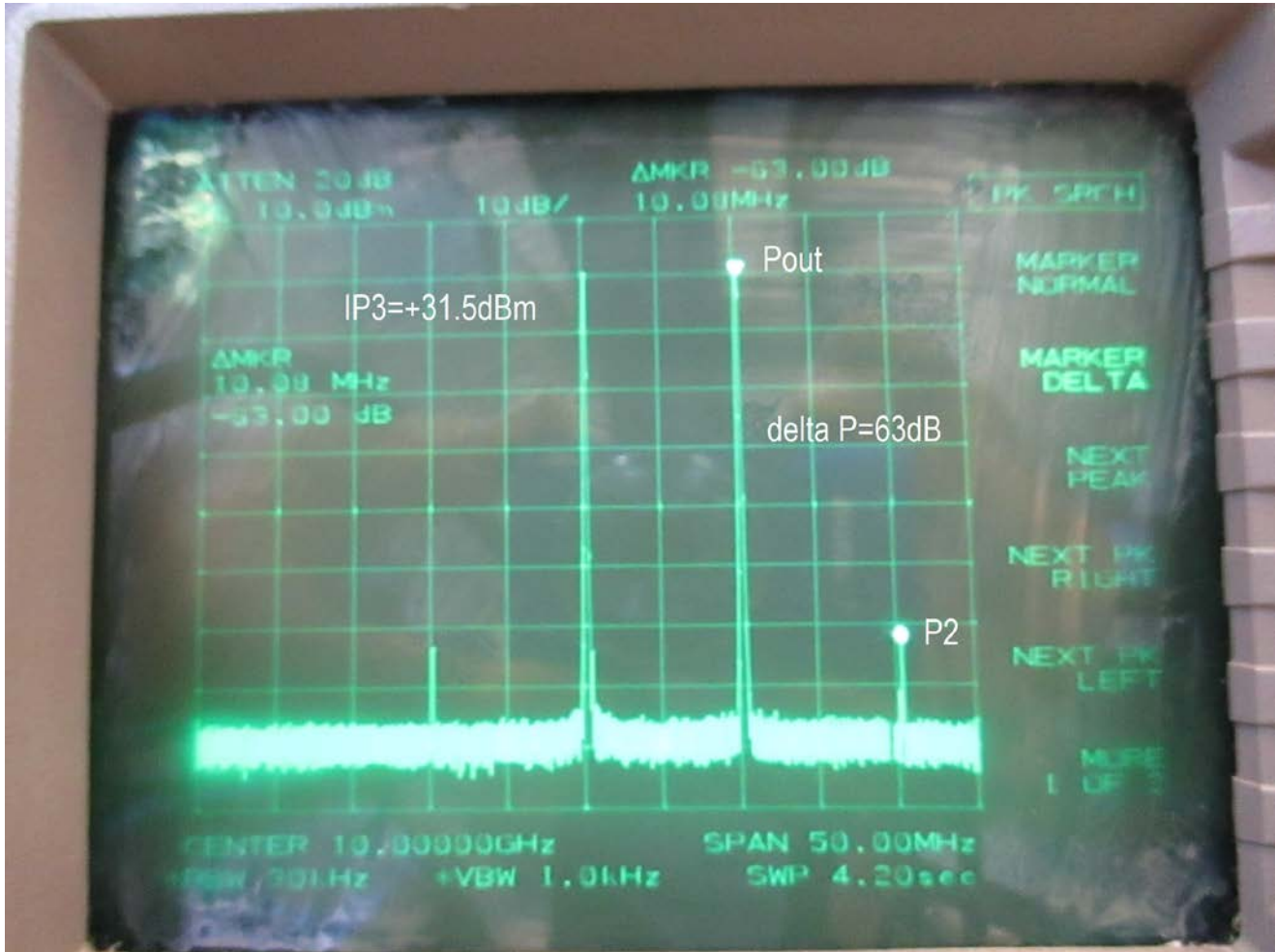
P1dB Vs Frequency





# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

IP3 @+25C



**IP3 = +31.5dBm**  
**IP3 = Pout + (delta P / 2)**



**Typical Characteristics  
On  
PEC-36-2G18G-4R5-27-15-SFF**

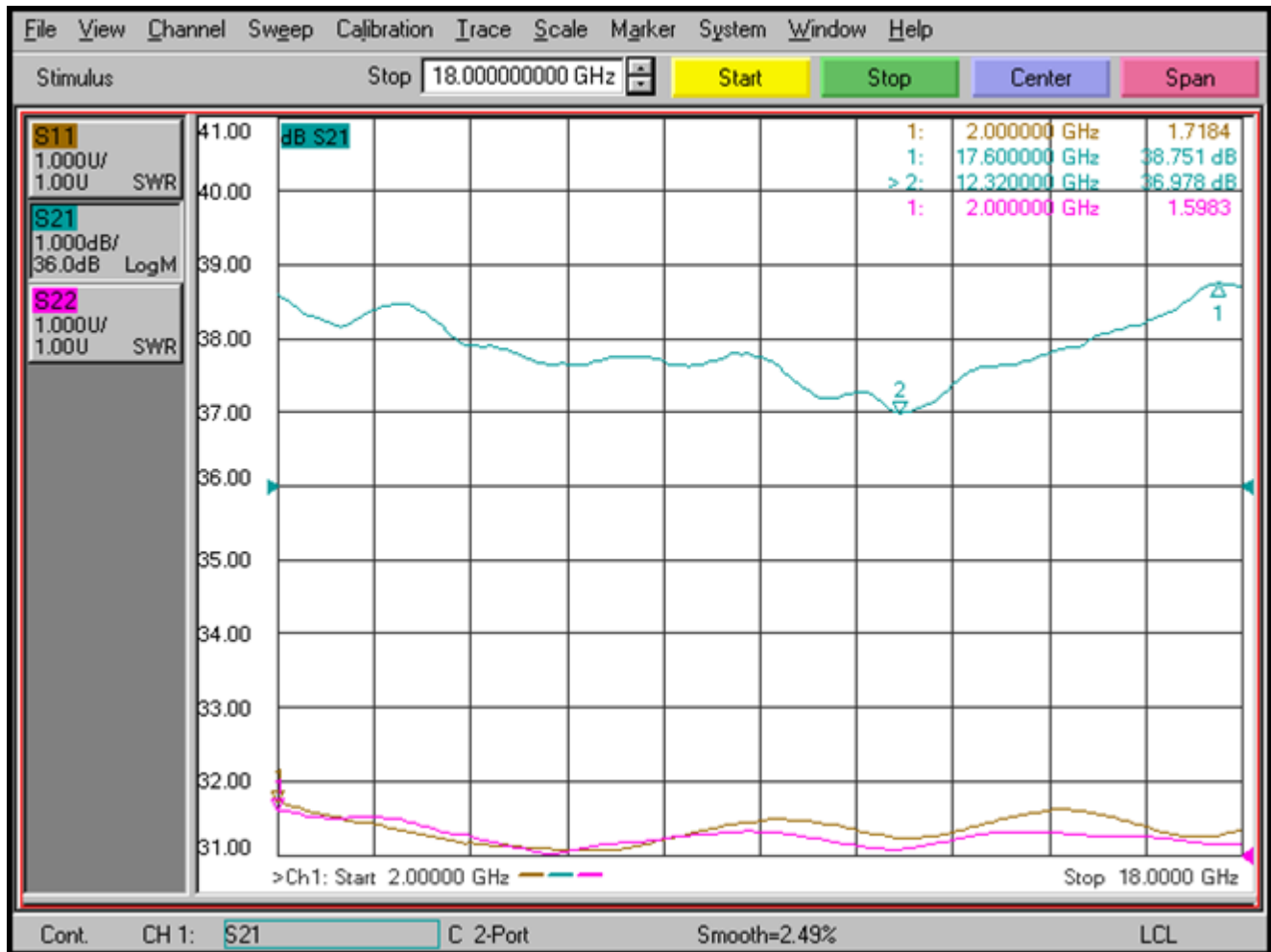
**Typical Data @-55C**

| TEST.<br>ITEM NO | PARAMETERS                             | SPECIFIED VALUE                     | TEST<br>RESULTS                           |
|------------------|----------------------------------------|-------------------------------------|-------------------------------------------|
| 1                | Frequency Range:                       | 2.0 GHz to 18.0 GHz                 | 2.0 GHz to 18.0 GHz<br>See Plot           |
| 2                | Gain:                                  | 36 dB Typical                       | 37.86 dB<br>See Plot                      |
| 3                | Gain Flatness:                         | +/- 1.5 dB Typical                  | +/-0.885 dB<br>See Plot                   |
| 4                | Noise Figure:                          | 4.5 dB Typical<br>5.0 dB Max        | 3.321 dB<br>See Plot                      |
| 5                | OP1dB:                                 | +26.5 dBm Min.<br>+27.5 dBm Typical | 27.5 dBm<br>28.0 dBm<br>See Plot          |
| 6                | VSWR Input/Output:                     | 2.0:1 Max                           | 1.71:1 Input<br>1.59:1 Output<br>See Plot |
| 7                | Impedance:                             | 50 Ohms                             | Pass                                      |
| 8                | Input Power:                           | +20 dBm CW Max.                     | Pass                                      |
| 9                | DC Voltage Supply:<br>DC Current Draw: | +15VDC @ 850 mA Nominal             | +15VDC @ 538mA                            |



# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

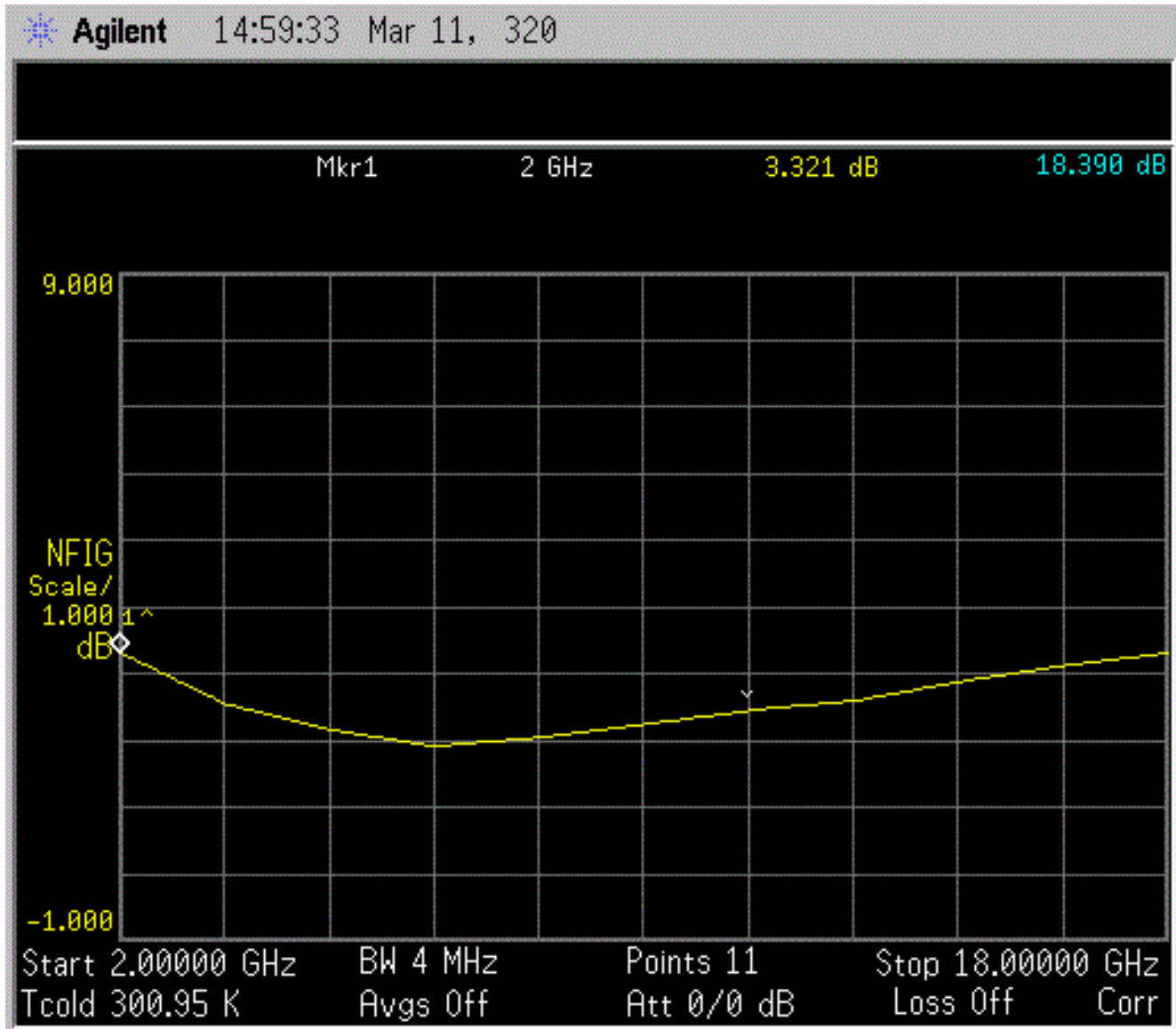
## Small Signal Gain & VSWR @ -55C





# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

## Typical Noise Figure @ -55C

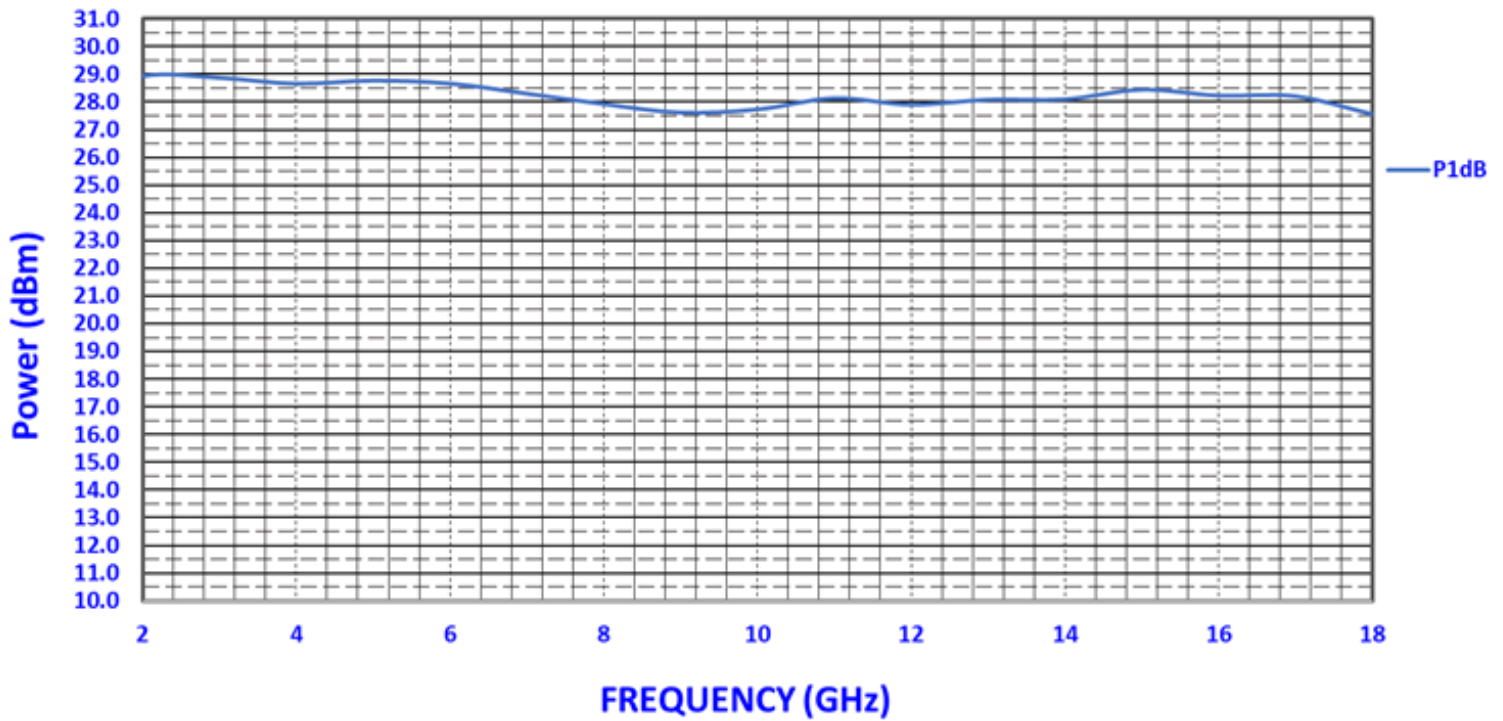




# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

Power Output at 1dB Gain Compression [P1dB] @ -55C

P1dB Vs Frequency





# **Typical Characteristics** **On** **PEC-36-2G18G-4R5-27-15-SFF**

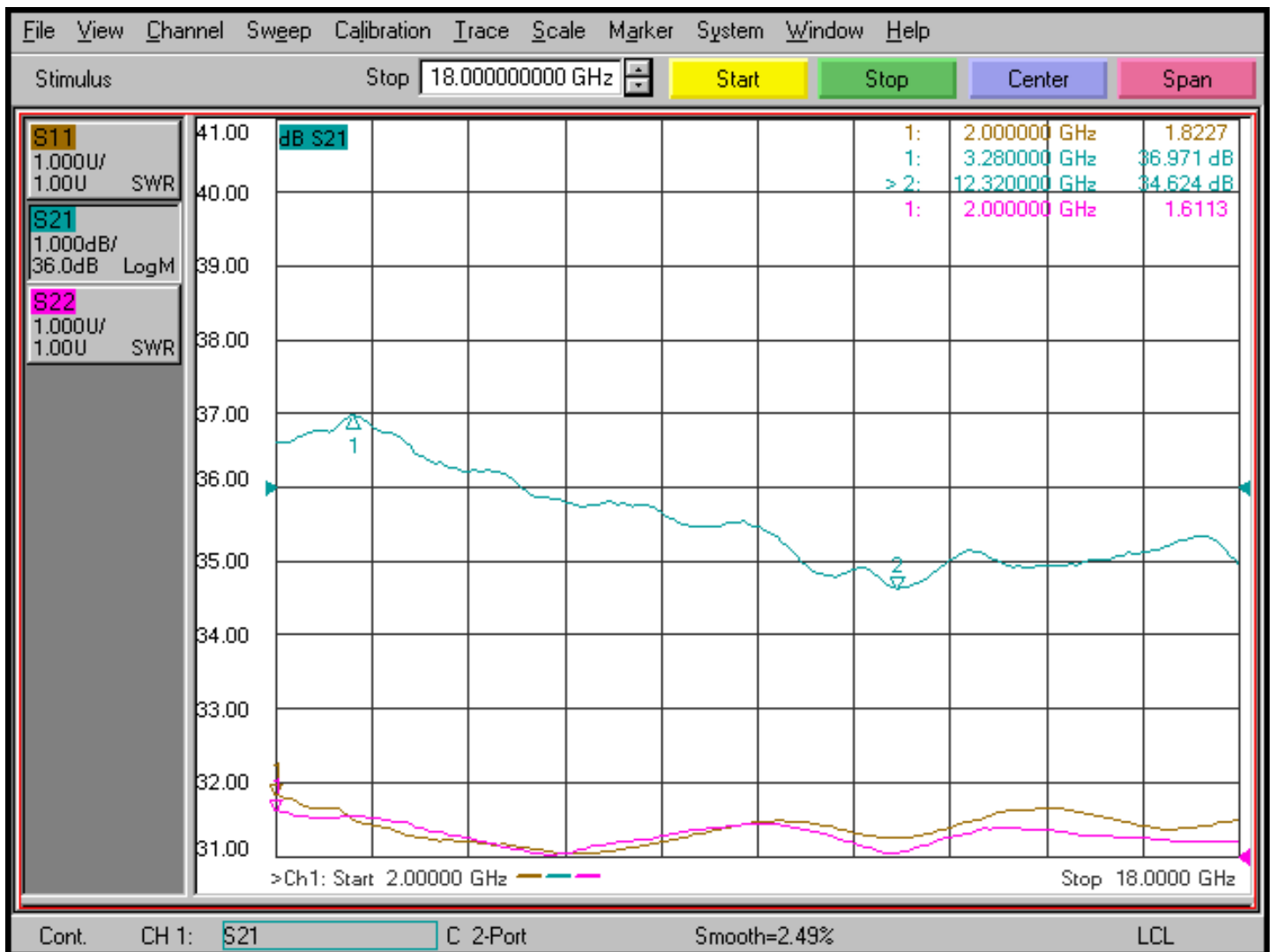
## **Typical Data @+85C**

| TEST.<br>ITEM NO | PARAMETERS                             | SPECIFIED VALUE                     | TEST<br>RESULTS                           |
|------------------|----------------------------------------|-------------------------------------|-------------------------------------------|
| 1                | Frequency Range:                       | 2.0 GHz to 18.0 GHz                 | 2.0 GHz to 18.0 GHz<br>See Plot           |
| 2                | Gain:                                  | 36 dB Typical                       | 35.8 dB<br>See Plot                       |
| 3                | Gain Flatness:                         | +/- 1.5 dB Typical                  | +/-1.175 dB<br>See Plot                   |
| 4                | Noise Figure:                          | 4.5 dB Typical<br>5.0 dB Max        | 4.38 dB<br>See Plot                       |
| 5                | OP1dB:                                 | +26.5 dBm Min.<br>+27.5 dBm Typical | 26.5 dBm<br>27.5 dBm<br>See Plot          |
| 6                | VSWR Input/Output:                     | 2.0:1 Max                           | 1.82:1 Input<br>1.61:1 Output<br>See Plot |
| 7                | Impedance:                             | 50 Ohms                             | Pass                                      |
| 8                | Input Power:                           | +20 dBm CW Max.                     | Pass                                      |
| 9                | DC Voltage Supply:<br>DC Current Draw: | +15VDC @ 850 mA Nominal             | +15VDC @ 614mA                            |



# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

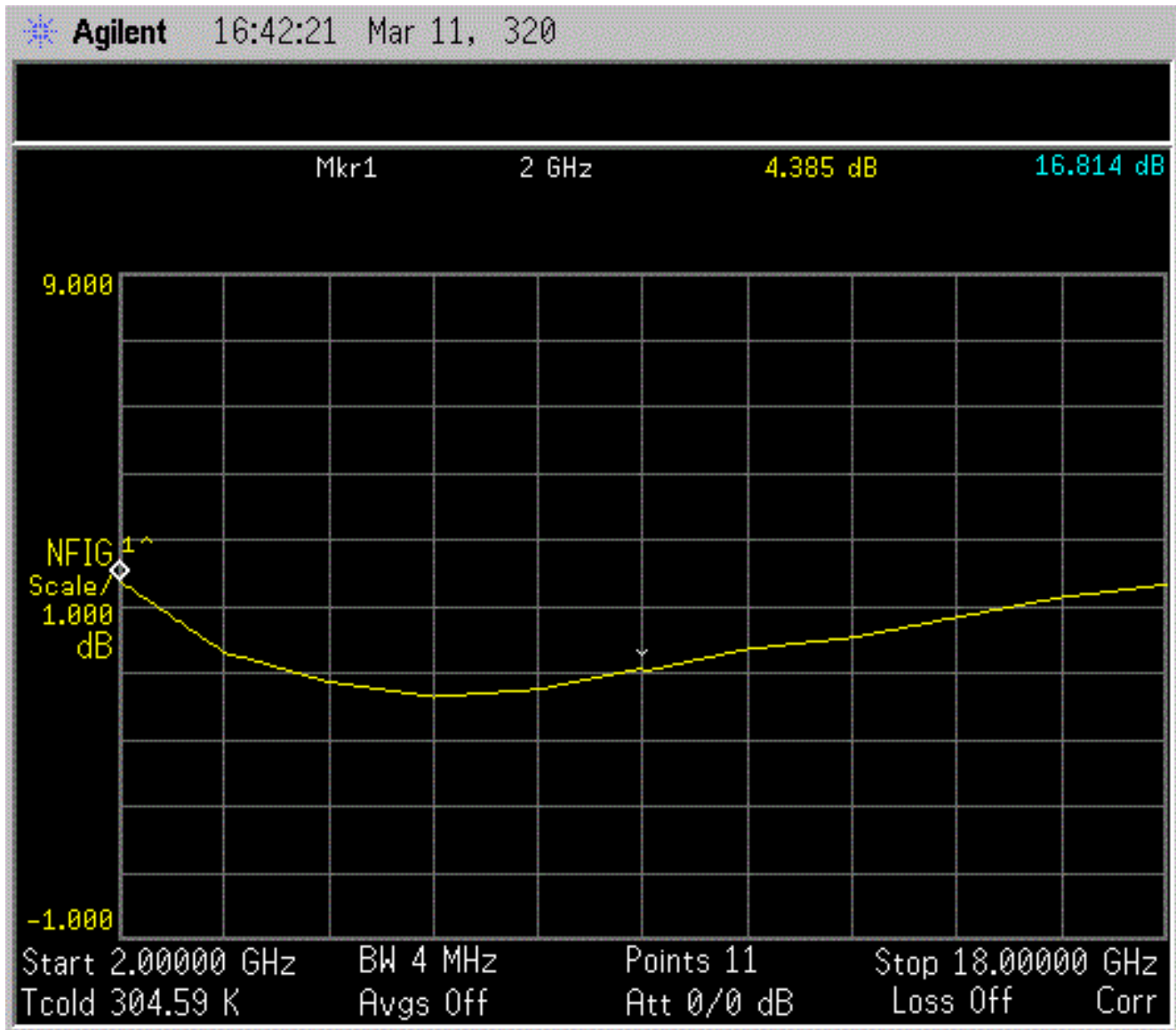
## Small Signal Gain & VSWR @ +85C





## Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

### Typical Noise Figure @ +85C





# Typical Characteristics On PEC-36-2G18G-4R5-27-15-SFF

Power Output at 1dB Gain Compression [P1dB] @ +85C

P1dB Vs Frequency

