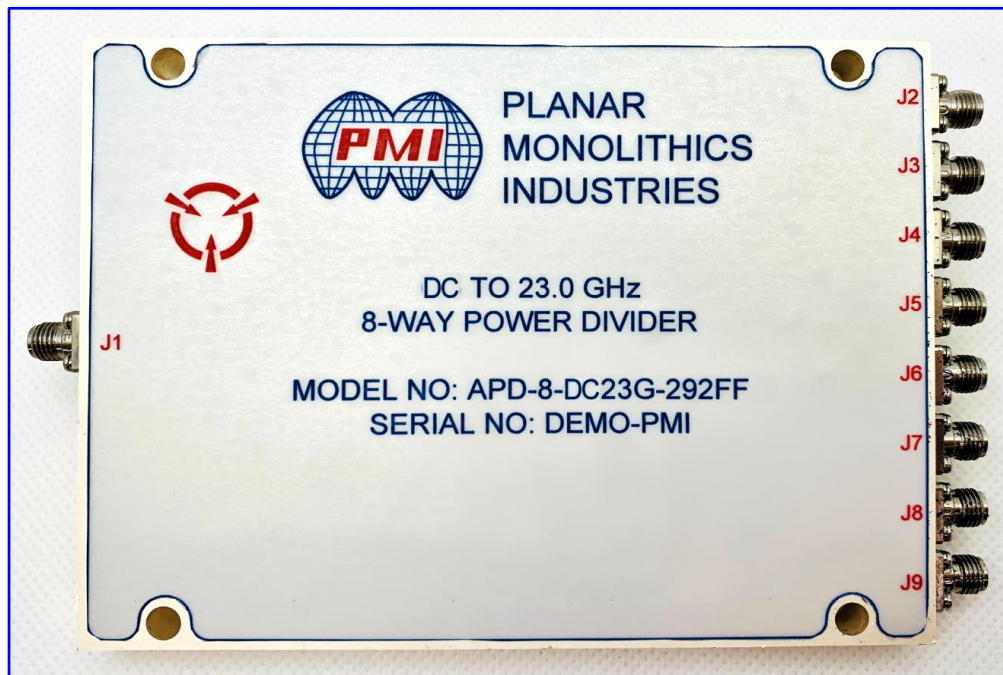




## Typical Characteristics ON APD-8-DC23G-292FF

PMI MODEL: APD-8-DC23G-292FF IS AN EIGHT WAY POWER DIVIDER OPERATING OVER THE DC TO 23.0 GHz FREQUENCY RANGE. THIS MODEL HAS A MAXIMUM INSERTION LOSS OF 2.0 dB FROM 2.0 TO 8.0 GHz AND 3.2 dB MAXIMUM BETWEEN 8.0 TO 18.0 GHz. THE COMPACT 5.0" x 3.7" x .43" HOUSING IS OUTFITTED WITH 2.92 mm FEMALE CONNECTORS.



October 23, 2020

Designed By:

Dr. Ashok Gorwara and Sean Heraty

Tested and Reported By:

A. Lopez and S. Heraty



# Typical Characteristics ON APD-8-DC23G-292FF

## Technical Sheet

### DESCRIPTION

PMI MODEL: APD-8-DC23G-292FF IS AN EIGHT WAY POWER DIVIDER OPERATING OVER THE DC TO 23.0 GHz FREQUENCY RANGE. THIS MODEL HAS A MAXIMUM INSERTION LOSS OF 2.0 dB FROM 2.0 TO 8.0 GHz AND 3.2 dB MAXIMUM BETWEEN 8.0 TO 18.0 GHz. THE COMPACT 5.0" x 3.7" x .43" HOUSING IS OUTFITTED WITH 2.92 mm FEMALE CONNECTORS.

### SPECIFICATIONS

|   |   |  |
|---|---|--|
| • | FREQUENCY RANGE:  | DC TO 23.0 GHz   |
| • | INSERTION LOSS;<br>(OVER THEORETICAL<br>POWER SPLIT OF 9<br>dB) | 22 to 23 GHz - 7.0 dB Max.<br>18 to 22 GHz - 5.0 dB Max.<br>8 to 18 GHz - 3.2 dB Max.<br>2 to 8 GHz - 2.0 dB Max.<br>1 to 2 GHz - 2.0 dB Max.<br>0.5 to 1 GHz - 2.0 dB Max.<br>300 to 500 MHz - 1.5 dB Max.<br>200 to 300 MHz - 2.6 dB Max.<br>100 to 200 MHz - 3.2 dB Max.<br>80 to 100 MHz - 4.0 dB Max.<br>20 to 80 MHz - 4.5 dB Max.<br>10 to 20 MHz - 5.0 dB Max. |
| • | VSWR (INPUT):   | 22 to 23 GHz - 2.0:1 Typ.<br>18 to 22 GHz - 2.0:1 Typ.<br>8 to 18 GHz - 2.0:1 Max.<br>2 to 8 GHz - 2.1:1 Max.<br>1 to 2 GHz - 2.4:1 Max.<br>0.5 to 1 GHz - 2.3:1 Typ.<br>300 to 500 MHz - 4.0:1 Typ.<br>200 to 300 MHz - 5.0:1 Typ.<br>100 to 200 MHz - 6.0:1 Typ.<br>10 to 100 MHz - 7.0:1 Typ.   |
| • | VSWR (OUTPUT):  | 22 to 23 GHz - 2.0:1 Typ.<br>8 to 22 GHz - 2.0:1 Typ.<br>8 to 18 GHz - 2.0:1 Max.<br>2 to 8 GHz - 2.1:1 Max.<br>1 to 2 GHz - 2.6:1 Max.<br>0.5 to 1 GHz - 2.5:1 Typ.<br>300 to 500 MHz - 2.0:1 Typ.<br>200 to 300 MHz - 2.5:1 Typ.<br>100 to 200 MHz - 3.0:1 Typ.<br>80 to 100 MHz - 4.0:1 Typ.<br>10 to 80 MHz - 7.0:1 Typ.   |
| • | Insertion Loss Flatness:<br>(Ref Line of Best Fit)              | 0.5 to 23 GHz - ± 2 dB Max.<br>10 MHz to 500 MHz - ± 2 dB Max.   |

| REVISIONS |      |                  |          |          |
|-----------|------|------------------|----------|----------|
| ZONE      | REV. | DESCRIPTION      | DATE     | APPROVED |
|           | A1   | ORIGINAL RELEASE | 09/22/20 |          |
|           |      |                  |          |          |
|           |      |                  |          |          |

|   |                    |   |
|---|--------------------|---|
| • | ISOLATION:         | 22 to 23 GHz - 10 dB Typ.<br>18 to 22 GHz - 15 dB Typ.<br>8 to 18 GHz - 20 dB Typ.<br>2 to 8 GHz - 20 dB Typ.<br>1 to 2 GHz - 10 dB Typ.<br>0.5 to 1 GHz - 10 dB Typ.<br>100 to 500 MHz - 5 dB Typ.<br>40 to 100 MHz - 7 dB Typ.<br>10 to 40 MHz - 12 dB Typ. |
| • | AMPLITUDE BALANCE: | 22 to 23 GHz - ± 2 dB Max.<br>18 to 22 GHz - ± 1.2 dB Max.<br>8 to 18 GHz - ± 0.5 dB Max.<br>2 to 8 GHz - ± 0.3 dB Max.<br>1 to 2 GHz - ± 0.5 dB Max.<br>0.5 to 1 GHz - ± 0.5 dB Max.<br>10 to 500 MHz - ± 0.5 dB Max.  |
| • | PHASE BALANCE:     | 22 to 23 GHz - 20° Max.<br>18 to 22 GHz - 15° Max.<br>8 to 18 GHz - 10° Max.<br>2 to 8 GHz - 4° Max.<br>1 to 2 GHz - 3° Max.<br>0.5 to 1 GHz - 5° Max.<br>10 to 500 MHz - 5° Max.   |
| • | AVERAGE POWER:     | 25 WATTS (INTO 1.2:1 LOAD VSWR)   |
| • | CONNECTORS:        | 2.92 mm FEMALE REMOVABLE  |
| • | SIZE:              | 5.00" x 3.70" x 0.43"<br>[127.1 x 94.0 x 10.9 mm]<br>EXCLUDING CONNECTORS   |
| • | FINISH:            | PAINTED BLUE  |

**PLANAR MONOLITHICS INDUSTRIES, INC.**  
7311-F GROVE ROAD  
FREDERICK, MARYLAND 21704 USA  
TEL: (301)-662-5019, FAX: (301)-662-1731  
WEB: [www.pmi-rf.com](http://www.pmi-rf.com), EMAIL: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)  
ISO 9001 CERTIFIED



|                        |  |         |  |          |              |
|------------------------|--|---------|--|----------|--------------|
| APPROVALS              |  | DATE    | TITLE  |          |              |
| DRAWN<br><i>S.M.H.</i> |  | 9/22/20 | PRODUCT FEATURE<br>APD-8-DC23G-292FF<br>DC TO 23.0 GHz Eight Way Power Divider |          |              |
| CHECKED                |  |         | SIZE   | FIG. NO. | DWG. NO.     |
| ISSUED                 |  |         | A  | 05XQ0    | 27039020     |
|                        |  |         | SCALE  | N:S      | SHEET 1 OF 3 |

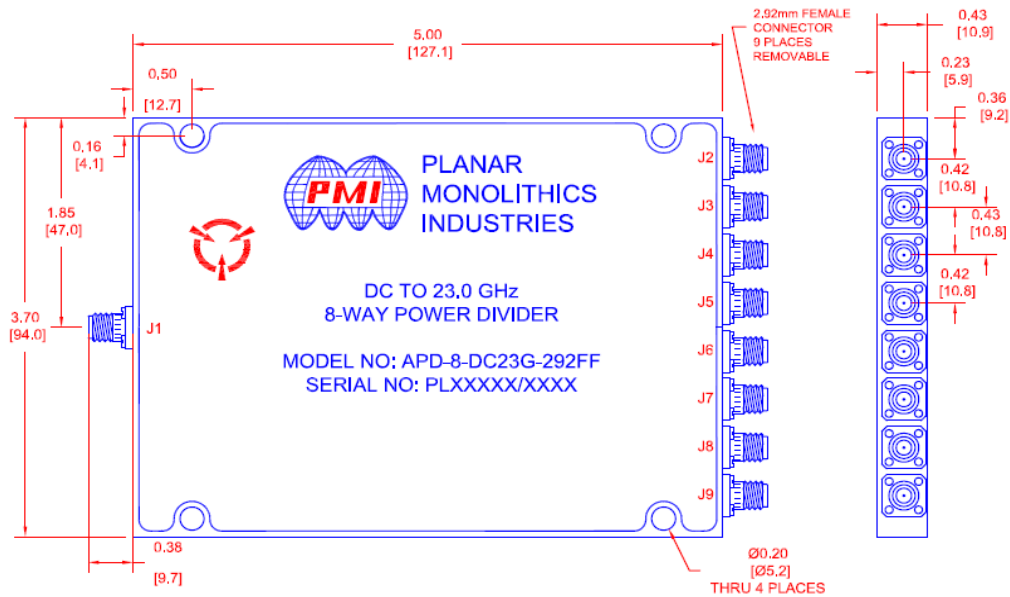
**PMI CONFIDENTIAL AND PROPRIETARY**



# Typical Characteristics ON APD-8-DC23G-292FF

## Mechanical Outline

### MECHANICAL OUTLINE



ALL DIMENSIONS  
ARE IN mm [INCH]  
TOLERANCES:  
XXX ± 0.508 [0.020]  
X,XXX ± 0.254 [0.010]

### ENVIRONMENTAL RATINGS

- TEMPERATURE: ——— -55 °C TO +85 °C (OPERATING)  
-65 °C TO +125 °C (STORAGE)
- HUMIDITY: ——— MIL-STD-202, METHOD 103B COND. B
- SHOCK: ——— MIL-STD-202, METHOD 213B COND. B
- VIBRATION: ——— MIL-STD-202, METHOD 204D COND. B
- ALTITUDE: ——— MIL-STD-202, METHOD 105C COND. B
- TEMPERATURE CYCLE: — MIL-STD-202, METHOD 107D COND. A

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

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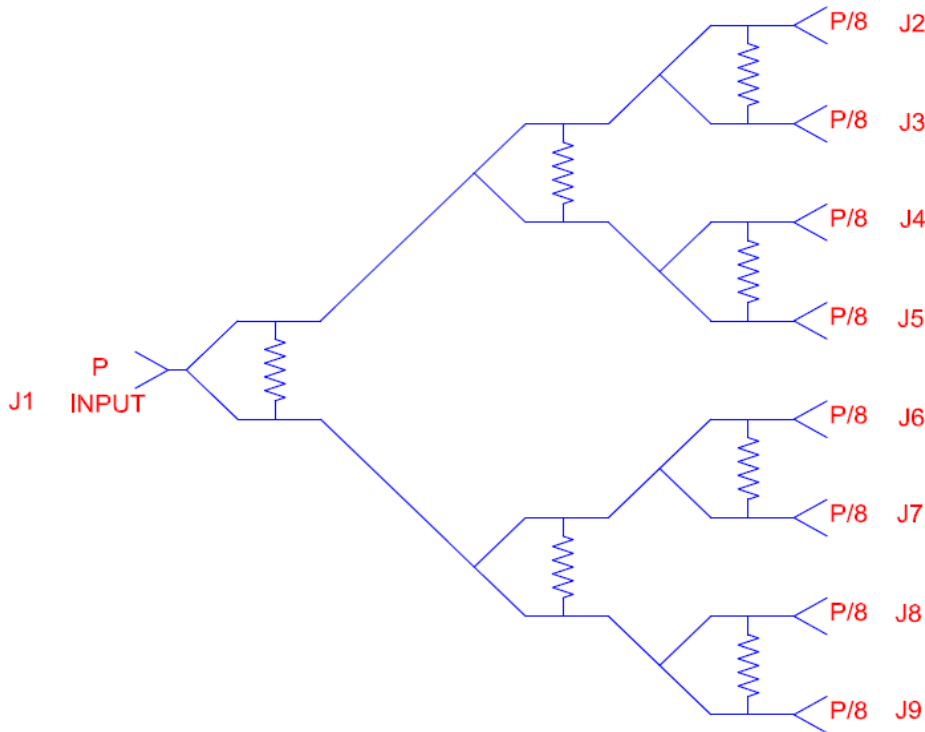


| APPROVALS           |  | DATE    | TITLE  |         |          | REV.   |
|---------------------|--|---------|--|---------|----------|--------|
| DRAWN <i>S.M.H.</i> |  | 9/22/20 | PRODUCT FEATURE<br>APD-8-DC23G-292FF<br>DC to 23.0 GHz Eight Way Power Divider |         |          |        |
| CHECKED             |  |         | SIZE   | FSM NO. | DWG NO.  |        |
|                     |  |         | A  | 05XQ0   | 27039020 | A1     |
| ISSUED              |  |         | SCALE  | N:S     | SHEET    | 2 OF 3 |



# Typical Characteristics ON APD-8-DC23G-292FF

## Block Diagram



**BLOCK DIAGRAM**

**DC to 23 GHz**

**8 Way Power Divider**

**PLANAR MONOLITHICS INDUSTRIES, INC.**  
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NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
 NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

|            |          |          |  |  |  |  |  |
|------------|----------|----------|--|--|--|--|--|
| APPROVALS  |          | DATE     |  | TITLE                                  |  |  |  |
| DRAWN      |          | DATE     |  | PRODUCT FEATURE                        |  |  |  |
| CHECKED    |          | DATE     |  | APD-8-DC23G-292FF                      |  |  |  |
| ISSUED     |          | DATE     |  | DC to 23.0 GHz Eight Way Power Divider |  |  |  |
| SIZE       | FSCM NO. | DWG NO.  |  | REV.                                   |  |  |  |
| A          | 05XQ0    | 27039020 |  | A1                                     |  |  |  |
| SCALE: N:S |          |          |  | SHEET: 3 OF 3                          |  |  |  |



# Typical Characteristics ON APD-8-DC23G-292FF

## Technical Specifications

| TEST ITEM NO. | PARAMETERS  | SPECIFIED VALUE             | TEST RESULTS    |                 |                 | QA QC |
|---------------|---|-----------------------------|-----------------|-----------------|-----------------|-------|
|               |   |                             | +25°C           | -55°C           | +85°C           |       |
| 1             | Frequency Range   | DC GHz – 23 GHz             | DC GHz – 23 GHz | DC GHz – 23 GHz | DC GHz – 23 GHz |       |
| 2             | Insertion Loss:<br>(Over Theoretical Power Split of 9 dB) | 22 to 23 GHz - 7.0 dB Max.  | 4.55 dB         | 5.56 dB         | 6.34 dB         |       |
|               |   | 18 to 22 GHz - 5.0 dB Max.  | 4.81 dB         | 4.44 dB         | 4.29 dB         |       |
|               |   | 8 to 18 GHz - 3.2 dB Max.   | 2.86 dB         | 2.61 dB         | 3 dB            |       |
|               |   | 2 to 8 GHz - 2.0 dB Max.    | 1.82 dB         | 1.69 dB         | 1.85 dB         |       |
|               |   | 1 to 2 GHz – 2.0 dB Max.    | 1.62 dB         | 1.69 dB         | 1.6 dB          |       |
|               |   | 0.5 to 1 GHz – 2.0 dB Max.  | 1.45 dB         | 1.77 dB         | 1.45 dB         |       |
|               |   | 300 to 500 MHz - 1.5 dB Max | 0.64 dB         | 0.51 dB         | 0.75 dB         |       |
|               |   | 200 to 300 MHz - 2.6 dB Max | 1.91 dB         | 2.58 dB         | 2.43 dB         |       |
|               |   | 100 to 200 MHz - 3.2 dB Max | 2.64 dB         | 3.44 dB         | 3.18 dB         |       |
|               |   | 80 to 100 MHz - 4.0 dB Max  | 3.27 dB         | 3.8 dB          | 3.73 dB         |       |
|               |   | 40 to 80 MHz - 4.5 dB Max.  | 3.35 dB         | 3.29 dB         | 3.79 dB         |       |
|               |   | 20 to 40 MHz - 4.5 dB Max   | 3.59 dB         | 3.18 dB         | 3.88 dB         |       |
|               |   | 10 to 20 MHz -5.0 dB Max    | 3.84 dB         | 4.03 dB         | 4.07 dB         |       |
|               |   |                             | See Graphs      | See Graphs      | See Graphs      |       |
| 3             | Insertion Loss Flatness<br>(Ref Line of Best Fit)         | 0.5 to 23 GHz - ± 2 dB Max. | ± 1.05 dB       | ± 1.42 dB       | ± 1.68 dB       |       |
|               |   | 10 to 500 MHz - ± 2 dB Max  | ± 1.62 dB       | ± 1.69 dB       | ± 1.64 dB       |       |
|               |   |                             | See Graphs      | See Graphs      | See Graphs      |       |
| 4             | VSWR Input  | 22 to 23 GHz - 2.0:1 Typ.   | 1.98 :1         | 2.05 :1         | 1.98 :1         |       |
|               |   | 18 to 22 GHz - 2.0:1 Typ.   | 2.04 :1         | 2.11 :1         | 2.04 :1         |       |
|               |   | 8 to 18 GHz - 2.0:1 Max.    | 1.88 :1         | 1.99 :1         | 1.88 :1         |       |
|               |   | 2 to 8 GHz - 2.1:1 Max.     | 2.01 :1         | 2.04 :1         | 2.01 :1         |       |
|               |   | 1 to 2 GHz – 2.4:1 Max.     | 2.45 :1         | 2.5 :1          | 2.45 :1         |       |
|               |   | 0.5 to 1 GHz – 2.3:1 Typ.   | 2.32 :1         | 2.41 :1         | 2.32 :1         |       |
|               |   | 300 to 500 MHz - 4.0:1 Typ. | 4.09 :1         | 4.47 :1         | 4.02:1          |       |
|               |   | 200 to 300 MHz - 5.0:1 Typ. | 5.27 :1         | 5.75 :1         | 5.35:1          |       |
|               |   | 100 to 200 MHz - 6.0:1 Typ. | 6.31 :1         | 6.63 :1         | 6.48:1          |       |
|               |   | 80 to 100 MHz - 7.0:1 Typ   | 7.03 :1         | 7.25 :1         | 7.12:1          |       |
|               |   | 40 to 80 MHz -7.0:1 Typ.    | 7.03 :1         | 7.25 :1         | 7.12:1          |       |
|               |   | 20 to 40 MHz - 7.0:1 Typ.   | 7.18 :1         | 7.4 :1          | 7.36:1          |       |
|               |   | 10 to 20 MHz -7.0:1 Typ.    | 7.41 :1         | 8.17 :1         | 8.05:1          |       |
|               |   |                             | See Graphs      | See Graphs      | See Graphs      |       |
| 5             | VSWR /Output  | 22 to 23 GHz - 2.0:1 Typ.   | 1.28 :1         | 1.25 :1         | 1.28:1          |       |
|               |   | 18 to 22 GHz - 2.0:1 Typ.   | 1.22 :1         | 1.24 :1         | 1.22:1          |       |
|               |   | 8 to 18 GHz - 2.0:1 Max.    | 1.64 :1         | 1.65 :1         | 1.64:1          |       |
|               |   | 2 to 8 GHz - 2.1:1 Max.     | 1.69 :1         | 1.7 :1          | 1.69:1          |       |
|               |   | 1 to 2 GHz – 2.6:1 Max.     | 1.74 :1         | 1.78 :1         | 1.74:1          |       |
|               |   | 0.5 to 1 GHz – 2.0:1 Typ.   | 1.66 :1         | 1.62 :1         | 1.66:1          |       |
|               |   | 300 to 500 MHz - 2.0:1 Typ. | 1.82 :1         | 1.79 :1         | 1.81:1          |       |
|               |   | 200 to 300 MHz - 2.5:1 Typ. | 2.39 :1         | 2.44 :1         | 2.41:1          |       |
|               |   | 100 to 200 MHz - 3.0:1 Typ. | 3.7 :1          | 3.91 :1         | 3.71:1          |       |
|               |   | 80 to 100 MHz - 4.0:1 Typ   | 4.21 :1         | 4.37 :1         | 4.18:1          |       |
|               |   | 40 to 80 MHz - 7.0:1 Typ.   | 5.55 :1         | 5.77 :1         | 5.58:1          |       |
|               |   | 20 to 40 MHz - 7.0:1 Typ    | 6.46 :1         | 6.79 :1         | 6.68:1          |       |
|               |   | 10 to 20 MHz -7.0:1 Typ     | 7.02 :1         | 7.22 :1         | 7.15:1          |       |
|               |   |                             | See Graphs      | See Graphs      | See Graphs      |       |



# Typical Characteristics ON APD-8-DC23G-292FF

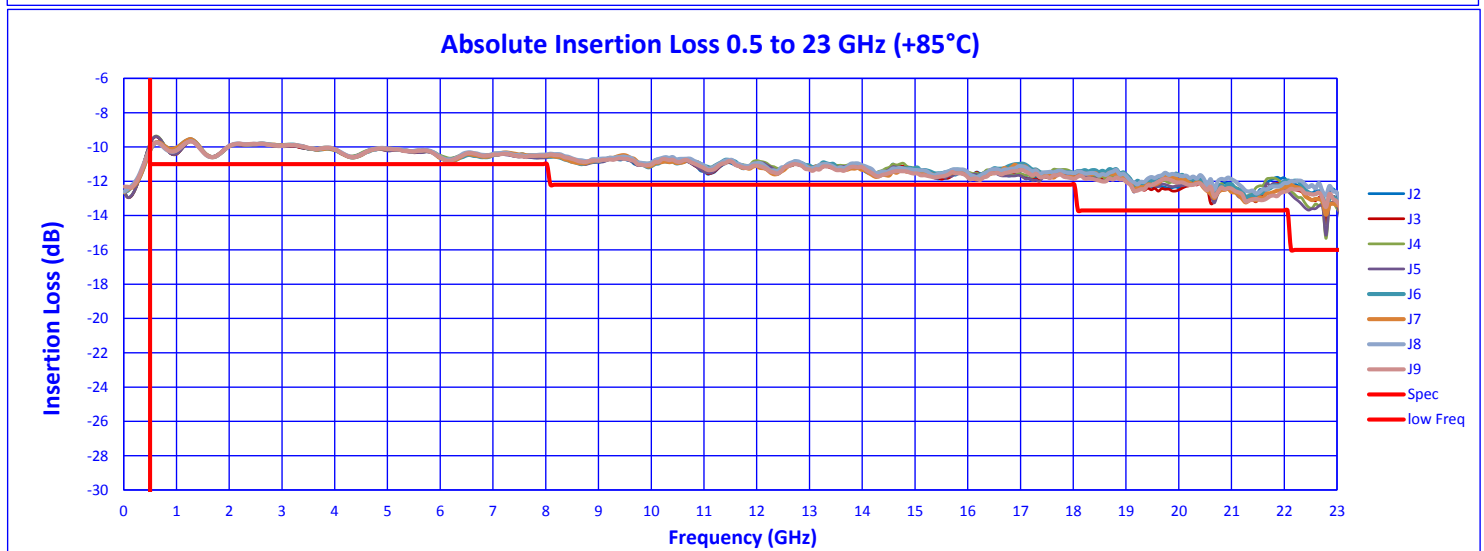
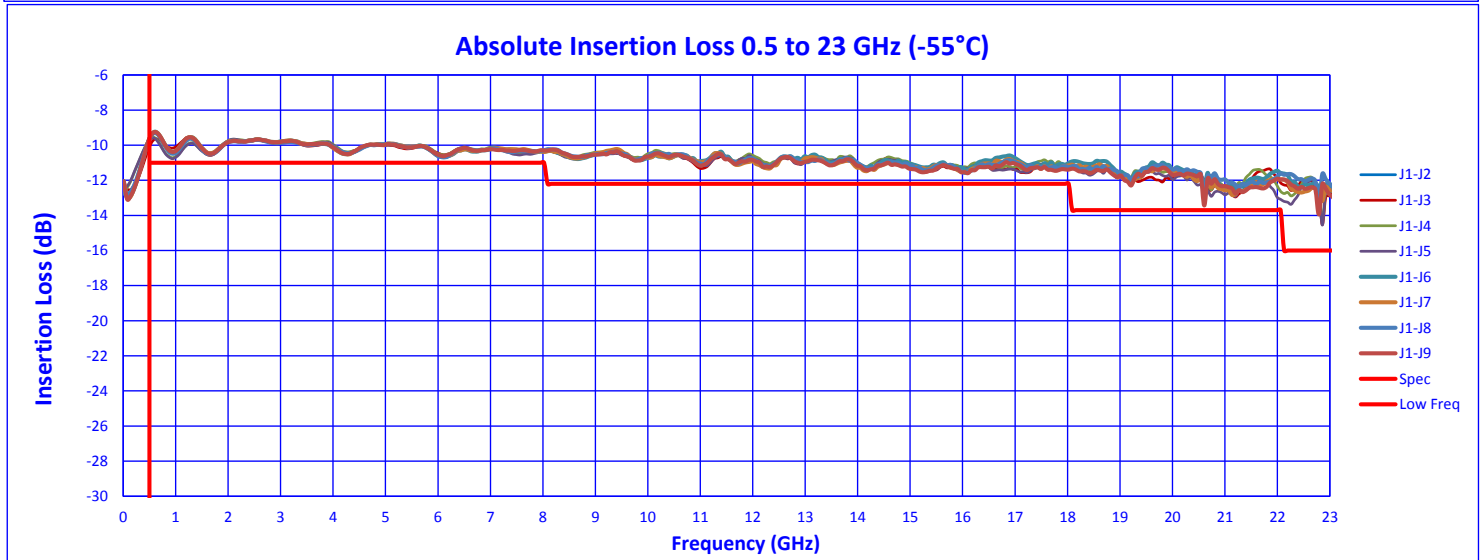
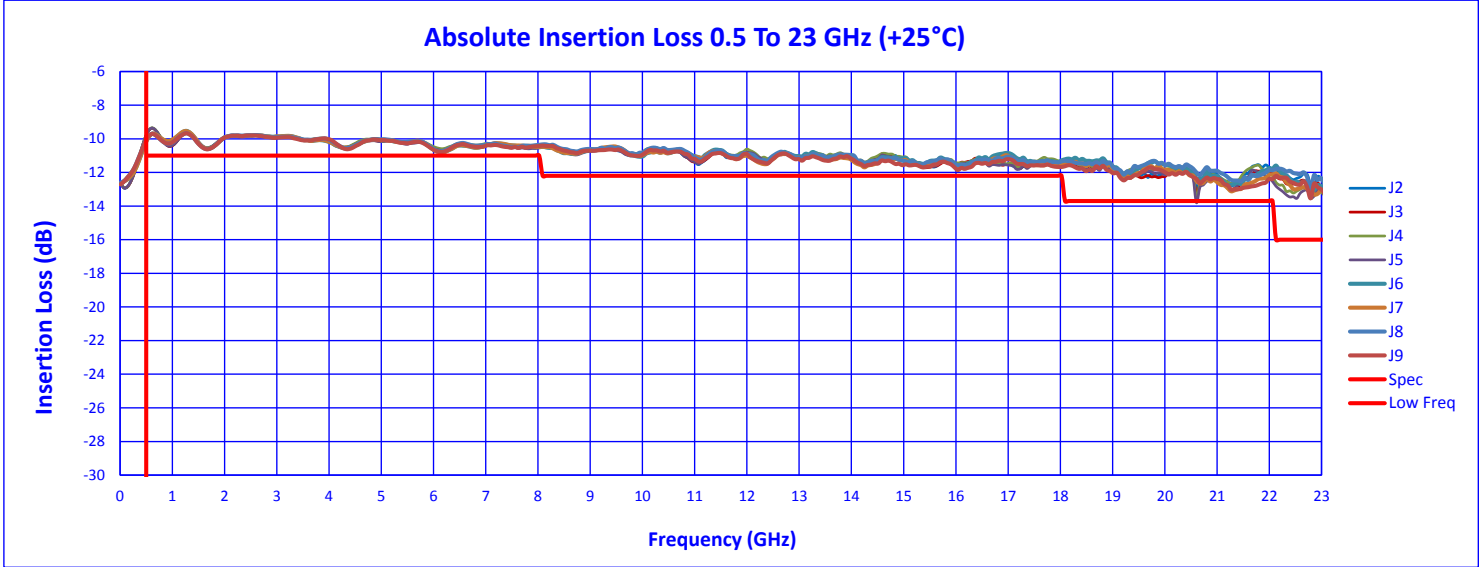
## Technical Specifications

| TEST ITEM NO. | PARAMETERS        | SPECIFIED VALUE                             | TEST RESULTS               |                            |                            | QA QC |
|---------------|-------------------|---|----------------------------|----------------------------|----------------------------|-------|
|               |                   |   | +25°C                      | -55°C                      | +85°C                      |       |
| 6             | Isolation         | 22 to 23 GHz - 10 dB Typ.                   | 8.88 dB                    | 8.96 dB                    | 8.84 dB                    |       |
|               |                   | 18 to 22 GHz - 15 dB Typ.                   | 12.89 dB                   | 11.36 dB                   | 13 dB                      |       |
|               |                   | 8 to 18 GHz - 20 dB Typ.                    | 17.08 dB                   | 17.2 dB                    | 17.03 dB                   |       |
|               |                   | 2 to 8 GHz - 20 dB Typ.                     | 19.84 dB                   | 19.81 dB                   | 19.82 dB                   |       |
|               |                   | 1 to 2 GHz - 20 dB Typ.                     | 11.21 dB                   | 11.25 dB                   | 11.22 dB                   |       |
|               |                   | 0.5 to 1 GHz - 10 dB Typ.                   | 6.36 dB                    | 6.39 dB                    | 6.42 dB                    |       |
|               |                   | 300 to 500 MHz - 5 dB Typ.                  | 4.75 dB                    | 4.72 dB                    | 4.77 dB                    |       |
|               |                   | 200 to 300 MHz - 5 dB Typ.                  | 4.7 dB                     | 4.66 dB                    | 4.71 dB                    |       |
|               |                   | 100 to 200 MHz - 5 dB Typ.                  | 4.89 dB                    | 4.89 dB                    | 4.92 dB                    |       |
|               |                   | 80 to 100 MHz - 7 dB Typ.                   | 6.36 dB                    | 6.23 dB                    | 6.41 dB                    |       |
|               |                   | 40 to 80 MHz - 7 dB Typ.                    | 4.7 dB                     | 4.66 dB                    | 4.71 dB                    |       |
|               |                   | 20 to 40 MHz - 10 dB Typ.                   | 9.36 dB                    | 8.79 dB                    | 9.5 dB                     |       |
|               |                   | 10 to 20 MHz - 12 dB Typ.                   | 11.22 dB                   | 10.63 dB                   | 11.45 dB                   |       |
|               |                   |   |                            | See Graphs                 | See Graphs                 |       |
| 7             | Amplitude Balance | 22 to 23 GHz - ± 2 dB Max.                  | 0.83 dB (±)                | 1.46 dB (±)                | 1.26 dB (±)                |       |
|               |                   | 18 to 22 GHz - ± 1.2 dB Max.                | 0.9 dB (±)                 | 0.87 dB (±)                | 0.71 dB (±)                |       |
|               |                   | 8 to 18 GHz - ± 0.5 dB Max.                 | 0.39 dB (±)                | 0.4 dB (±)                 | 0.42 dB (±)                |       |
|               |                   | 2 to 8 GHz - ± 0.3 dB Max.                  | 0.12 dB (±)                | 0.17 dB (±)                | 0.11 dB (±)                |       |
|               |                   | 1 to 2 GHz - ± 0.5 dB Max.                  | 0.18 dB (±)                | 0.31 dB (±)                | 0.19 dB (±)                |       |
|               |                   | 0.5 to 1 GHz - ± 0.5 dB Max.                | 0.21 dB (±)                | 0.31 dB (±)                | 0.22 dB (±)                |       |
|               |                   | 300 to 500 MHz - 0.5 dB Max                 | 0.43 dB (±)                | 0.13 dB (±)                | 0.15°dB (±)                |       |
|               |                   | 200 to 300 MHz - 0.5 dB Max                 | 0.33 dB (±)                | 0.12 dB (±)                | 0.1 dB (±)                 |       |
|               |                   | 100 to 200 MHz - 0.5 dB Max                 | 0.46 dB (±)                | 0.29 dB (±)                | 0.18 dB (±)                |       |
|               |                   | 80 to 100 MHz - 0.5 dB Max                  | 0.28 dB (±)                | 0.31 dB (±)                | 0.17 dB (±)                |       |
|               |                   | 40 to 80 MHz - 0.5 dB Max.                  | 0.27 dB (±)                | 0.44 dB (±)                | 0.16 dB (±)                |       |
|               |                   | 20 to 40 MHz - 0.5 dB Max                   | 0.11 dB (±)                | 0.44 dB (±)                | 0.08 dB (±)                |       |
|               |                   | 10 to 20 MHz - 0.5 dB Max                   | 0.11 dB (±)                | 0.48 dB (±)                | 0.12 dB (±)                |       |
|               |                   |   |                            | See Graphs                 | See Graphs                 |       |
| 8             | Phase Balance     | 22 to 23 GHz - 20° Max.                     | 13.29°                     | 18.69°                     | 7.24°                      |       |
|               |                   | 18 to 22 GHz - 15° Max.                     | 10.54°                     | 21.3°                      | 6.52°                      |       |
|               |                   | 8 to 18 GHz - 10° Max.                      | 8.15°                      | 13.05°                     | 4.19°                      |       |
|               |                   | 2 to 8 GHz - 4° Max.                        | 3.12°                      | 5.66°                      | 1.75°                      |       |
|               |                   | 1 to 2 GHz - 3° Max.                        | 0.92°                      | 1.24°                      | 0.78°                      |       |
|               |                   | 0.5 to 1 GHz - 5° Max.                      | 1.56°                      | 2.67°                      | 1.65°                      |       |
|               |                   | 300 to 500 MHz - 5° Max                     | 3.86°                      | 1.3°                       | 1.65°                      |       |
|               |                   | 200 to 300 MHz - 5° Max                     | 1.68°                      | 1.18°                      | 1.08°                      |       |
|               |                   | 100 to 200 MHz - 5° Max                     | 1.78°                      | 2.69°                      | 0.76°                      |       |
|               |                   | 80 to 100 MHz - 5° Max                      | 2.07°                      | 2.84°                      | 0.86°                      |       |
|               |                   | 40 to 80 MHz - 5° Max.                      | 1.84°                      | 2.94°                      | 1.13°                      |       |
|               |                   | 20 to 40 MHz - 5° Max                       | 1.34°                      | 1.9°                       | 0.49°                      |       |
|               |                   | 10 to 20 MHz - 5° Max                       | 1.03°                      | 1.15°                      | 0.95°                      |       |
|               |                   |   |                            | See Graphs                 | See Graphs                 |       |
| 9             | Average Power     | 25 Watts (+44dBm)<br>(Into 1.2:1 Load VSWR) | Pass 25 Watts<br>See Graph | Pass 25 Watts<br>See Graph | Pass 25 Watts<br>See Graph |       |

Note: Amplitude and phase balance are relative to J2 Port.



# Typical Characteristics ON APD-8-DC23G-292FF

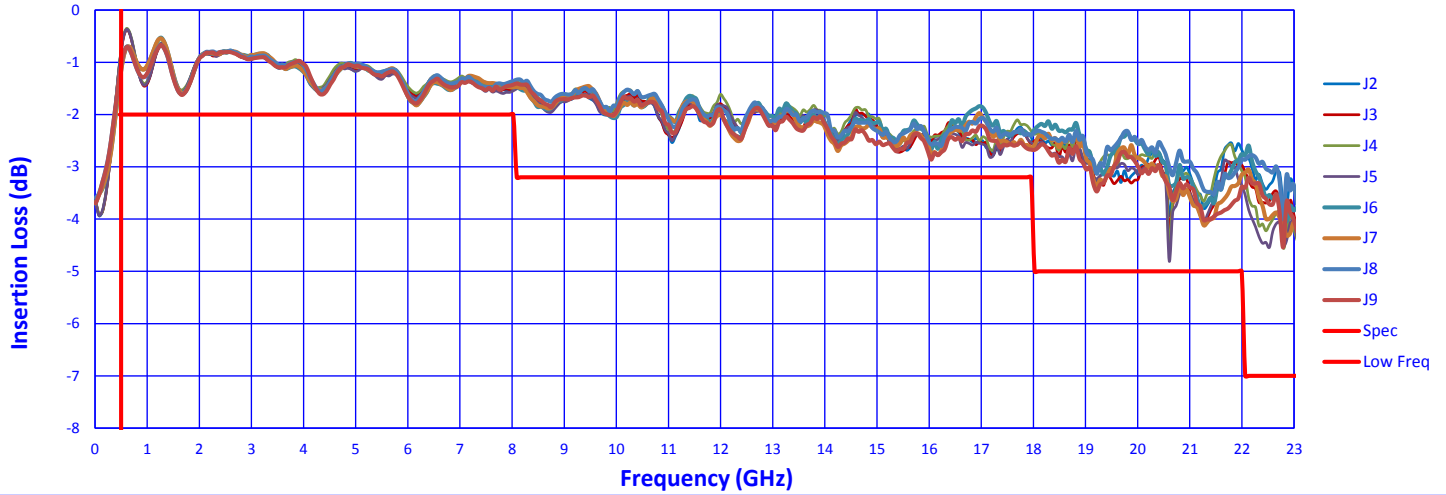




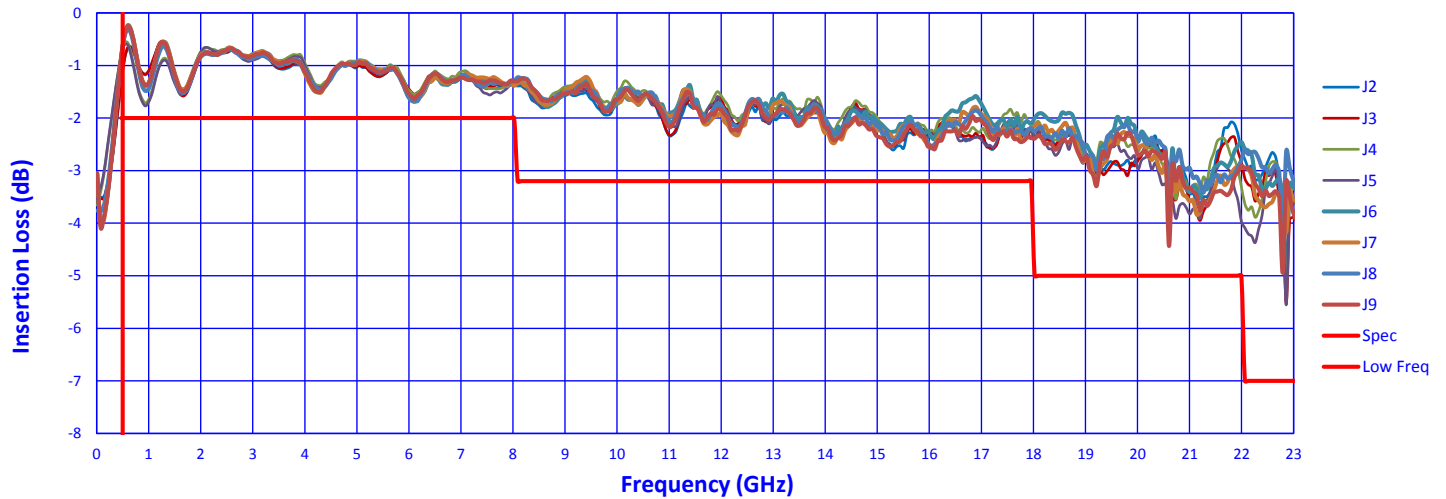


# Typical Characteristics ON APD-8-DC23G-292FF

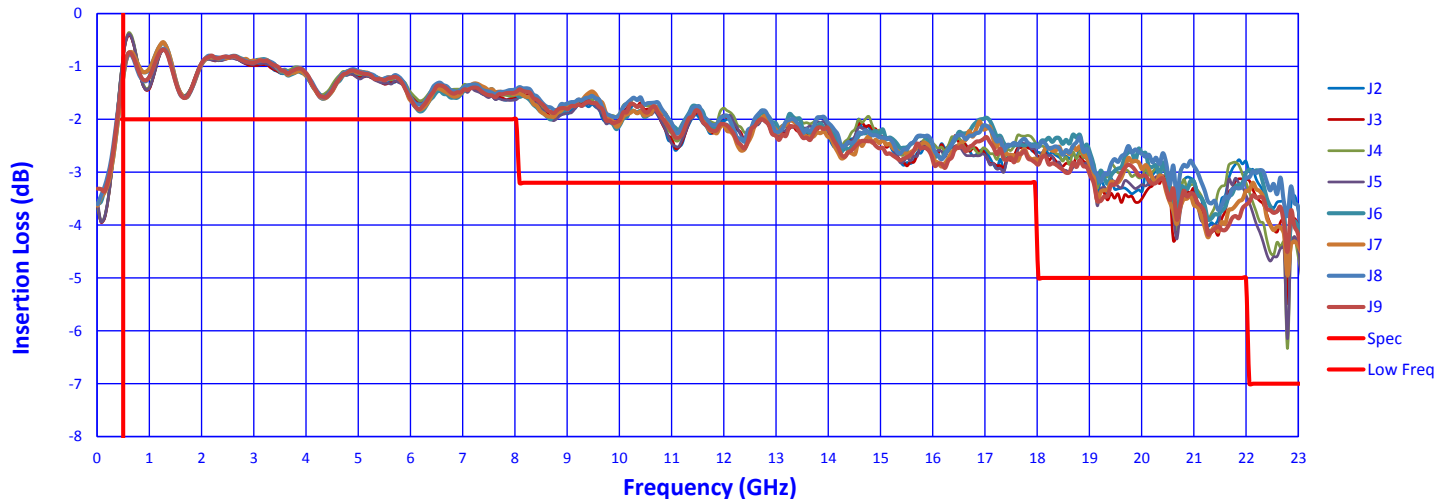
### Insertion Loss Over Theoretical Power Split of 9 dB, 0.5 to 23 GHz (+25°C)



### Insertion Loss Over Theoretical Power Split of 9 dB, 0.5 to 23 GHz (-55°C)



### Insertion Loss Over Theoretical Power Split of 9 dB, 0.5 to 23 GHz (+85°C)

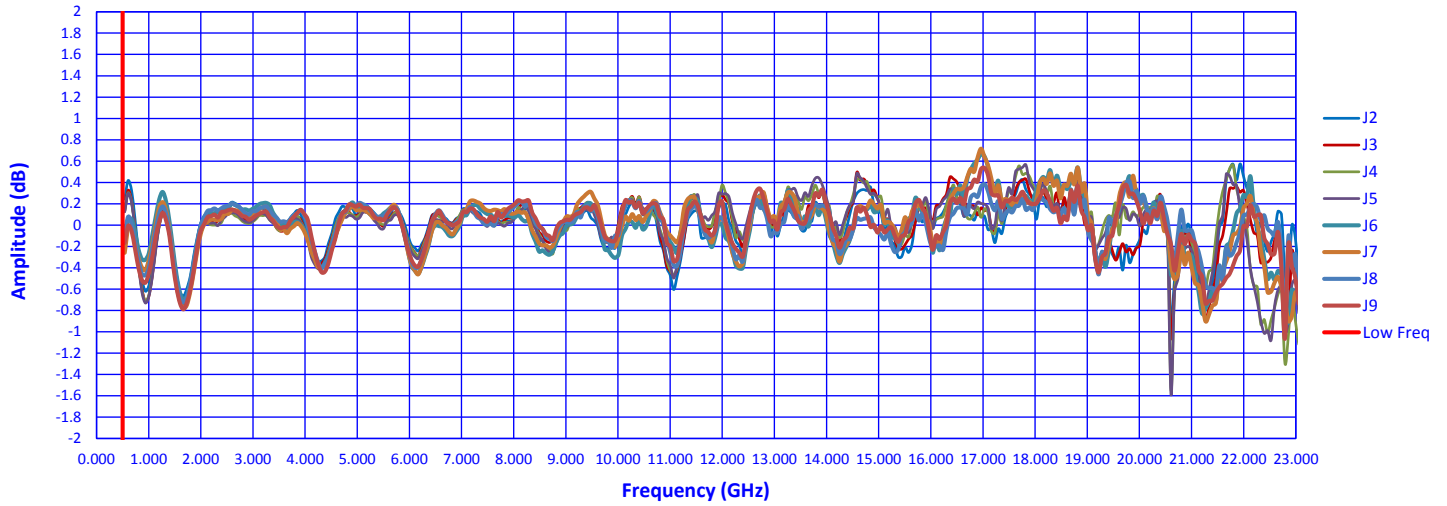




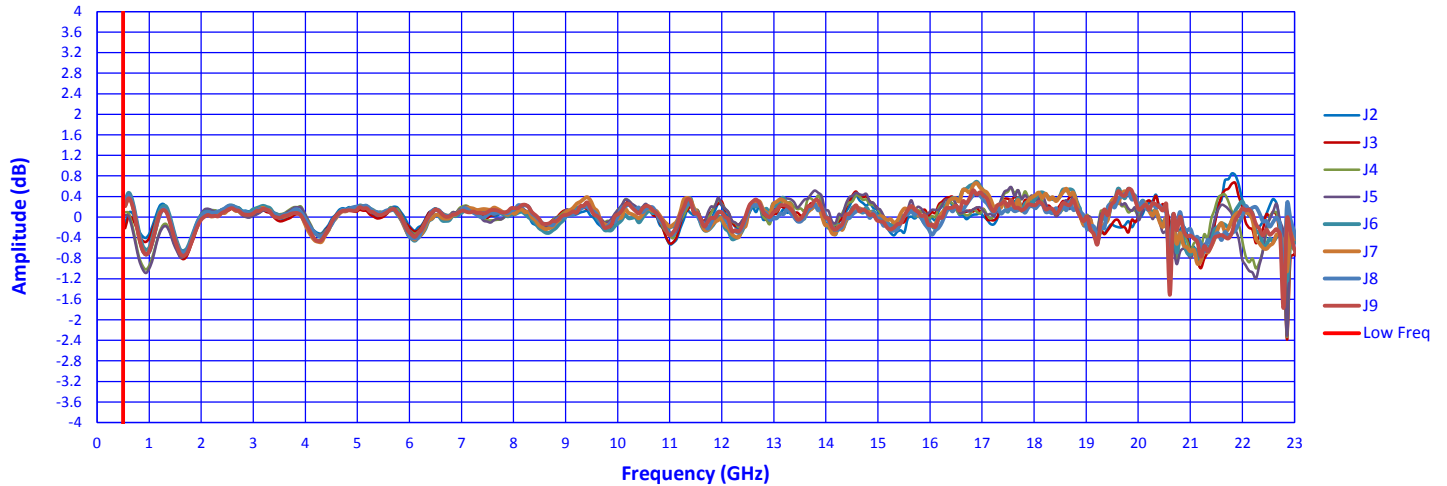


# Typical Characteristics ON APD-8-DC23G-292FF

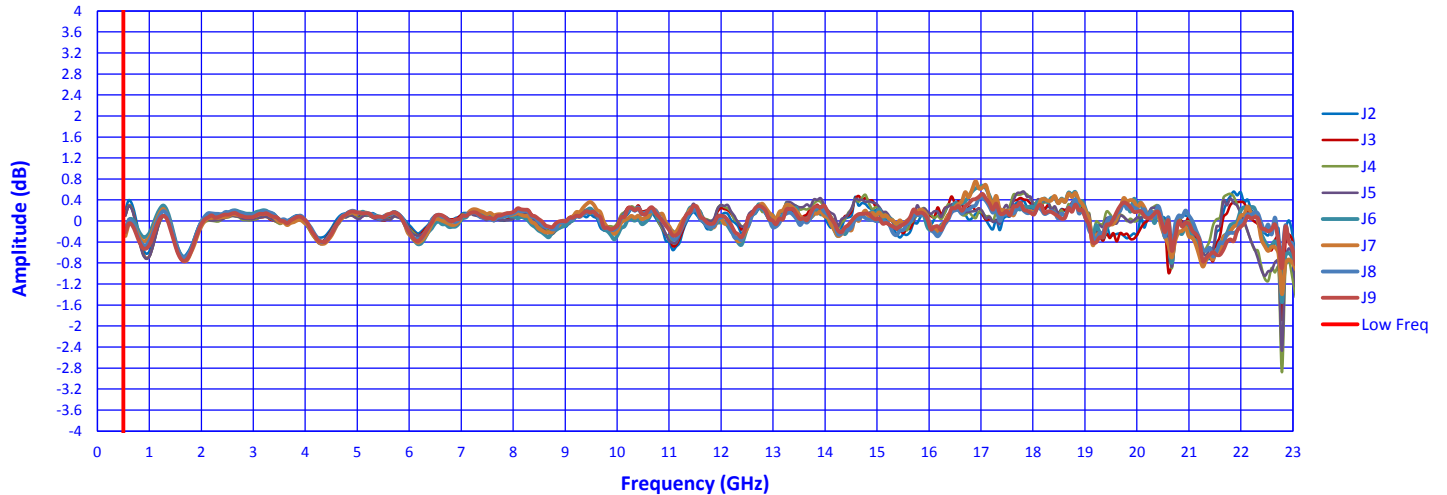
Insertion Loss flatness Ref Line of Best Fit 0.5 to 23GHz (+25°C)



Insertion Loss flatness Ref Line of Best Fit 0.5 to 23 GHz (-55°C)

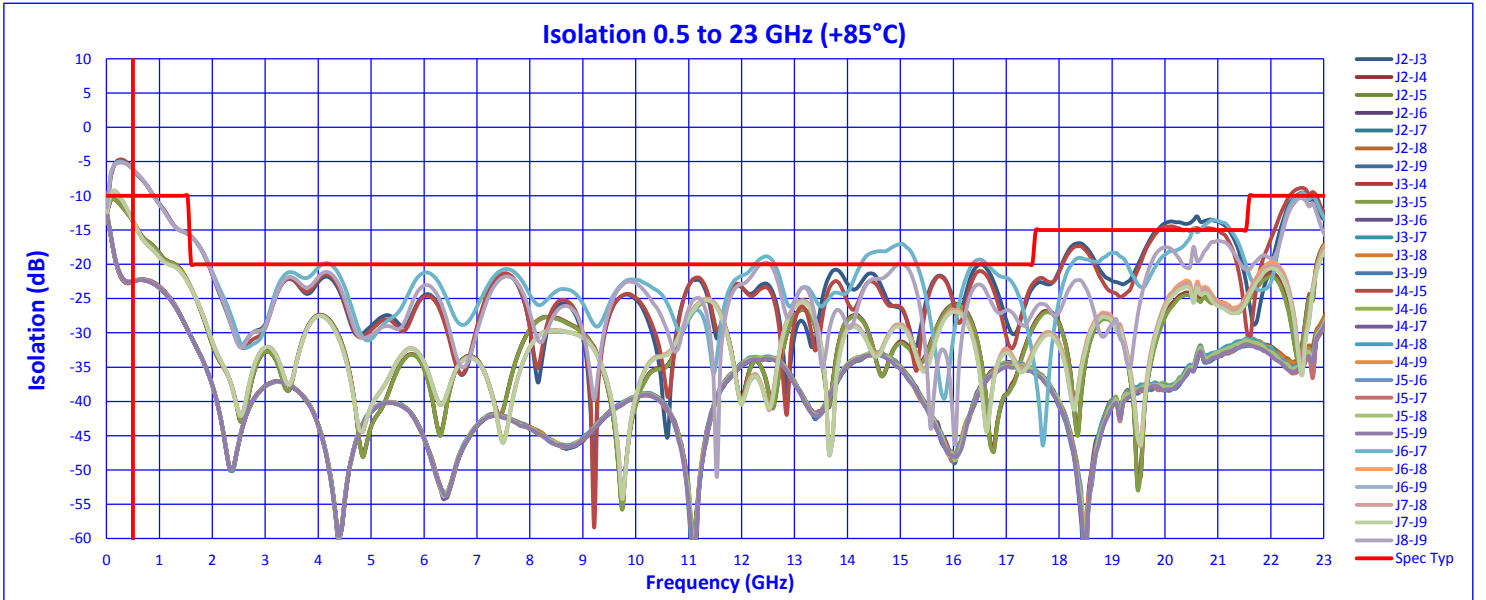
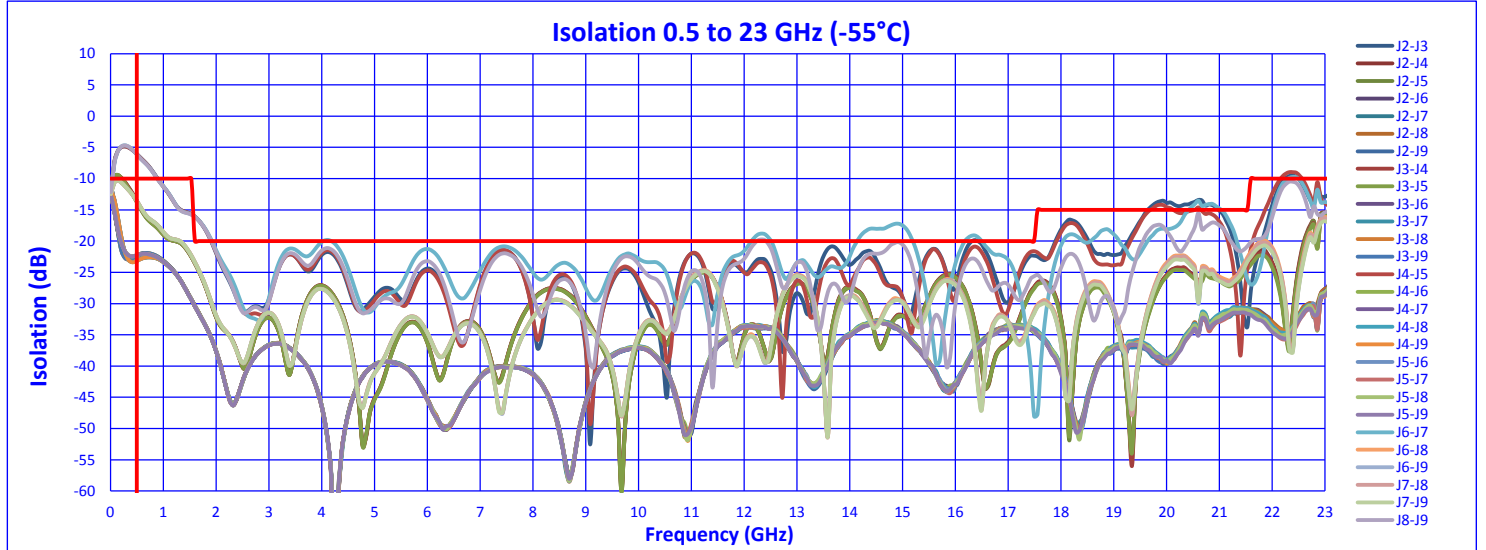
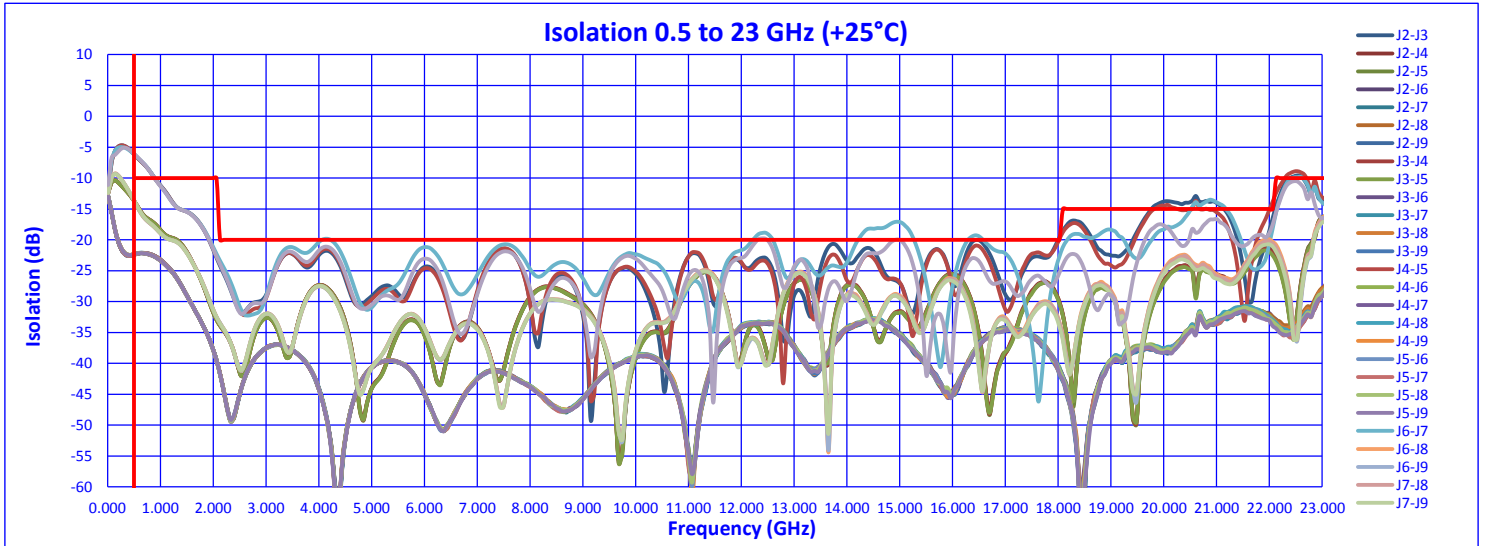


Insertion Loss flatness Ref Line of Best Fit 0.5 to 23 GHz (+85°C)



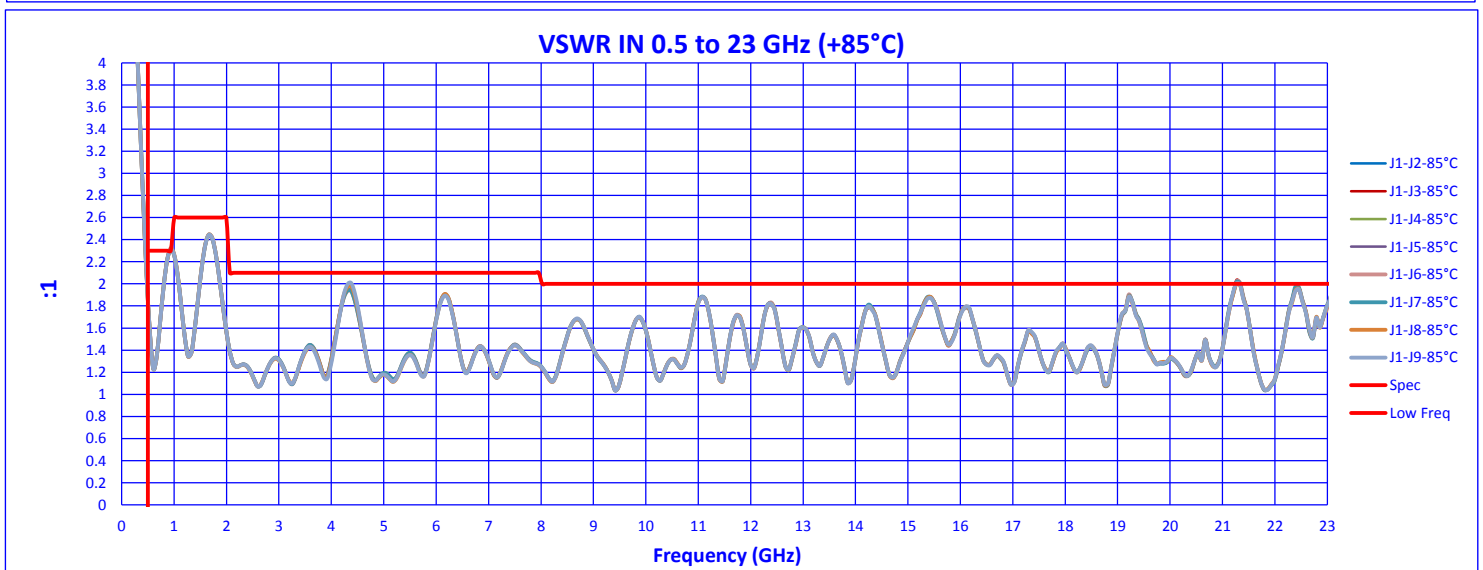
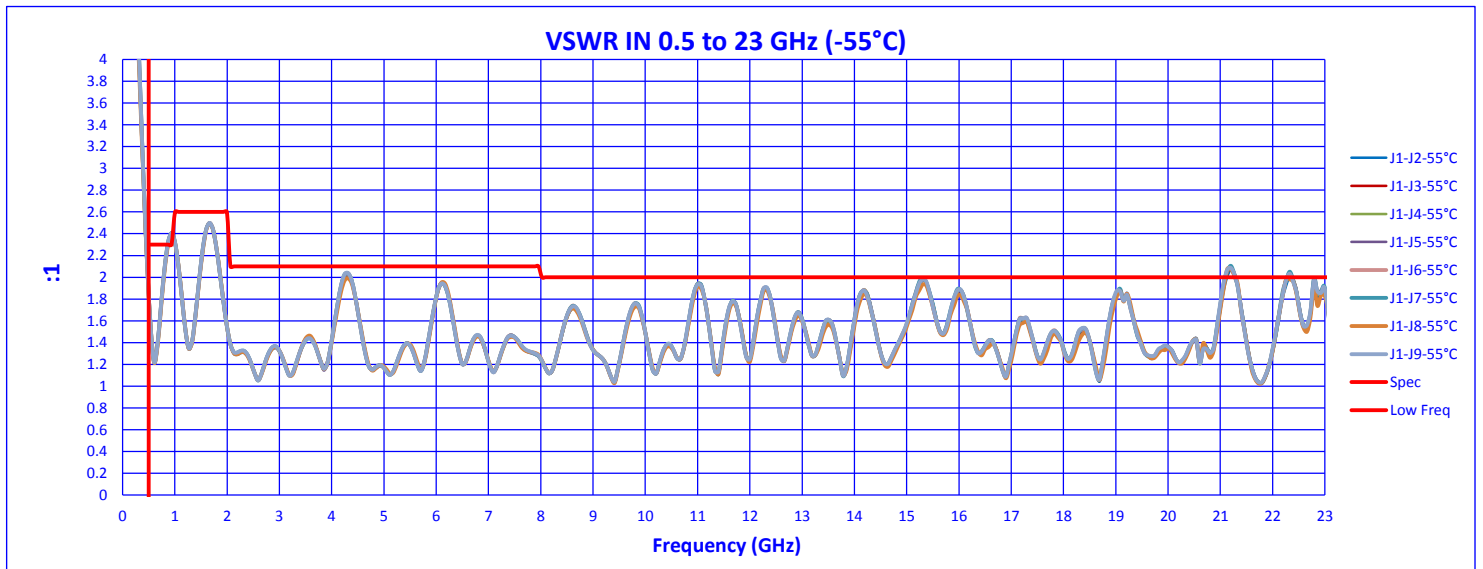
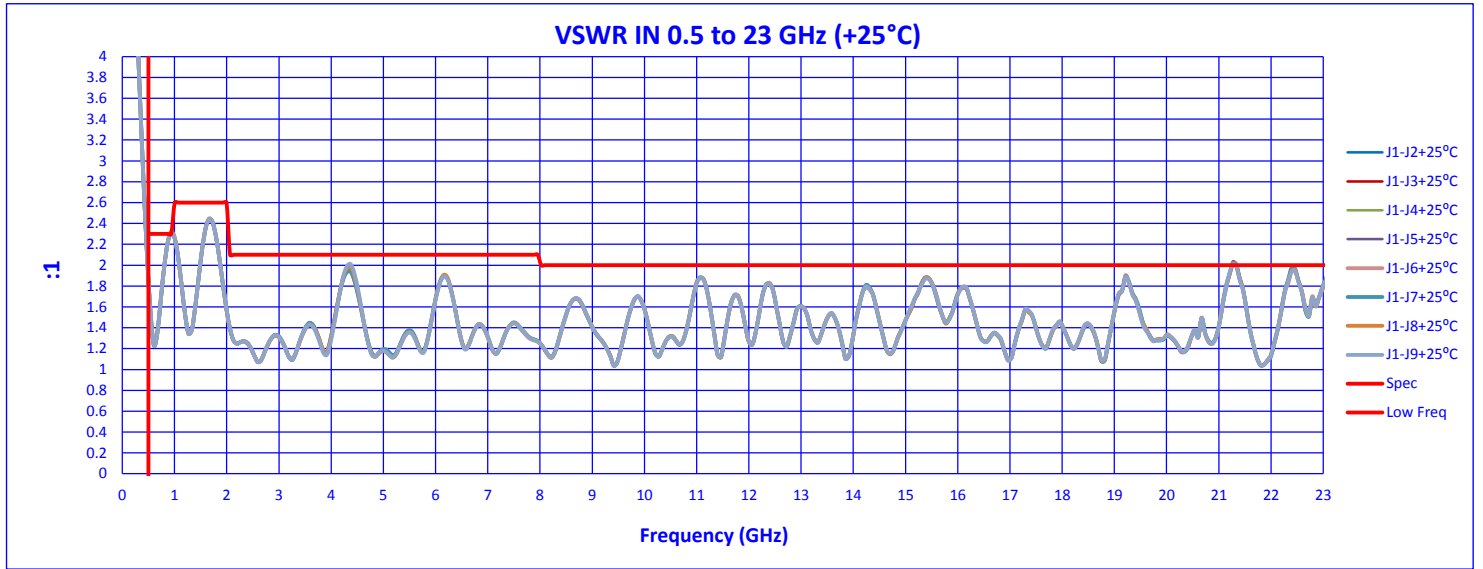


# Typical Characteristics ON APD-8-DC23G-292FF



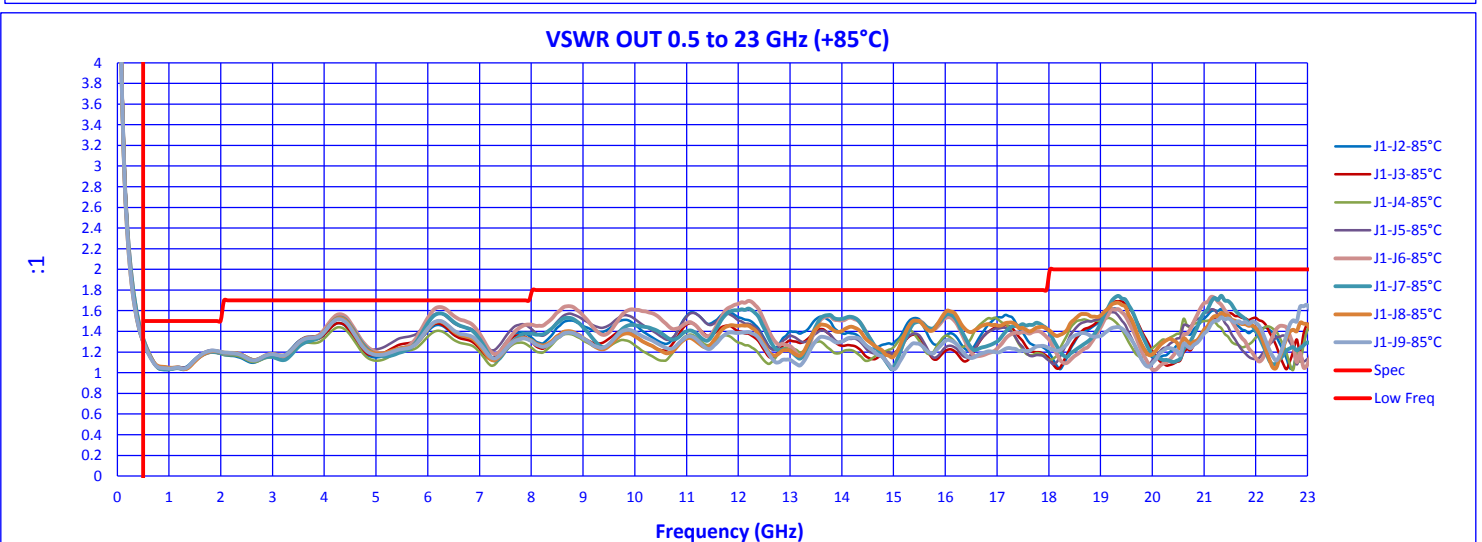
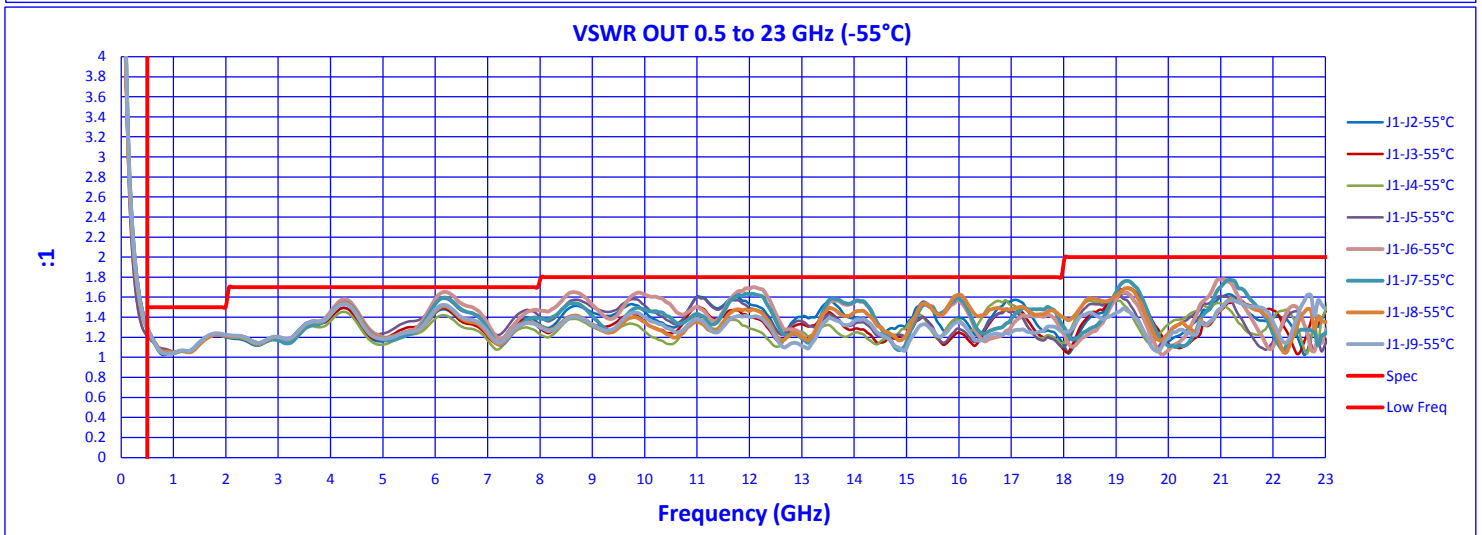
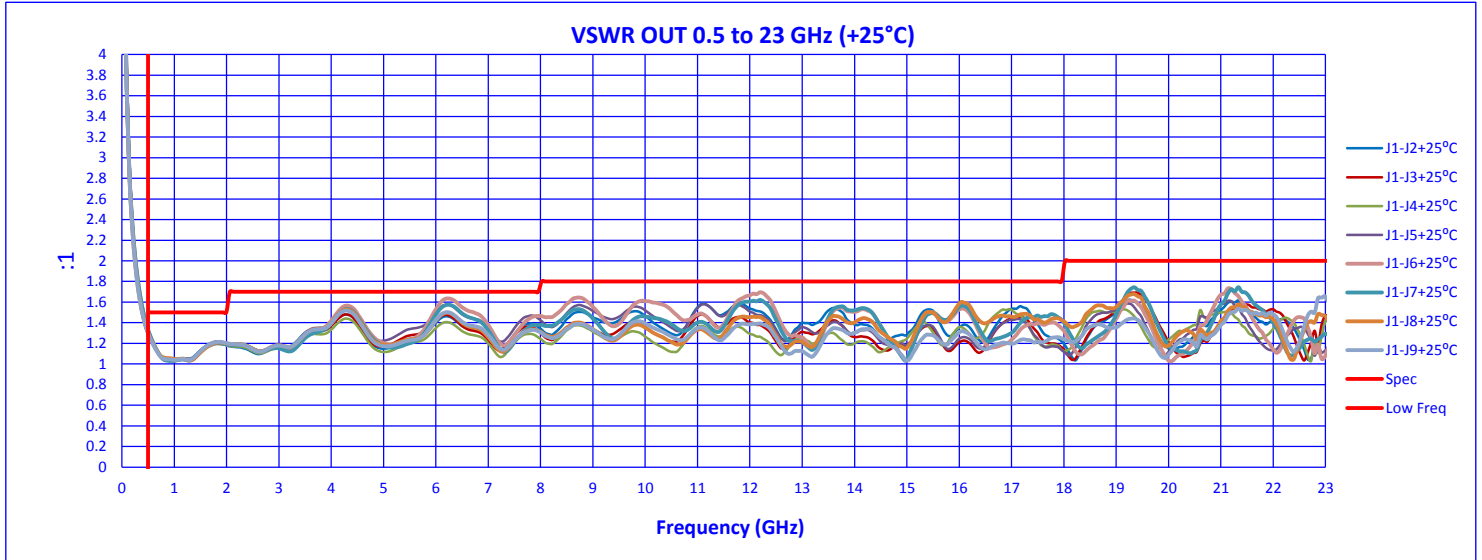


# Typical Characteristics ON APD-8-DC23G-292FF



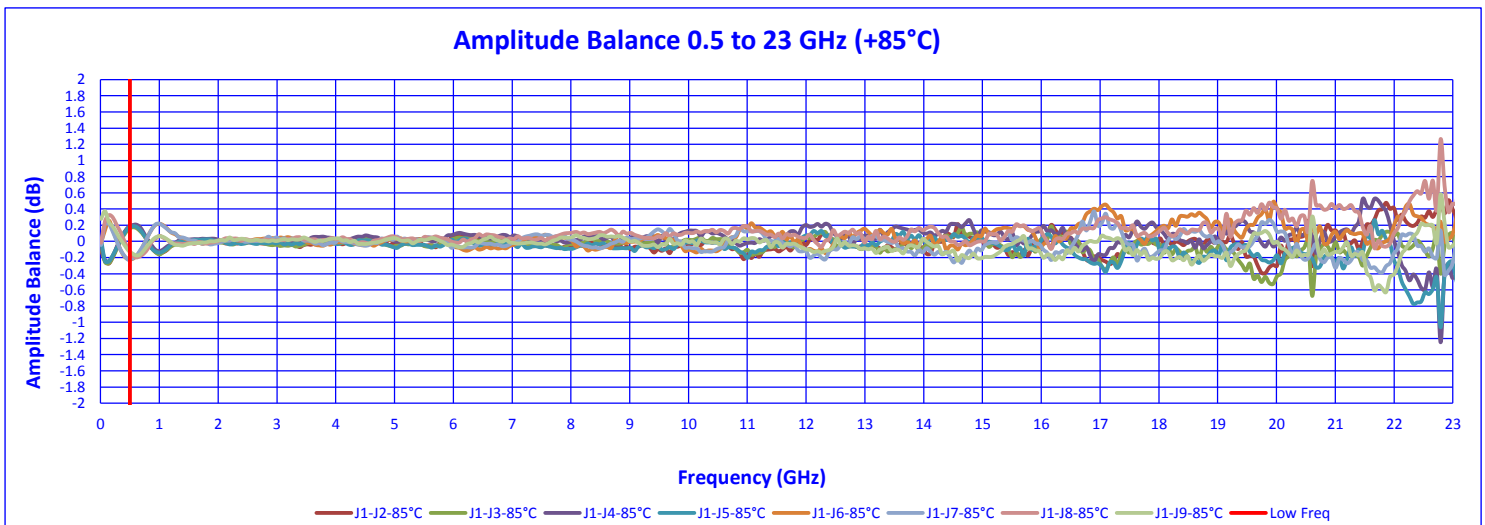
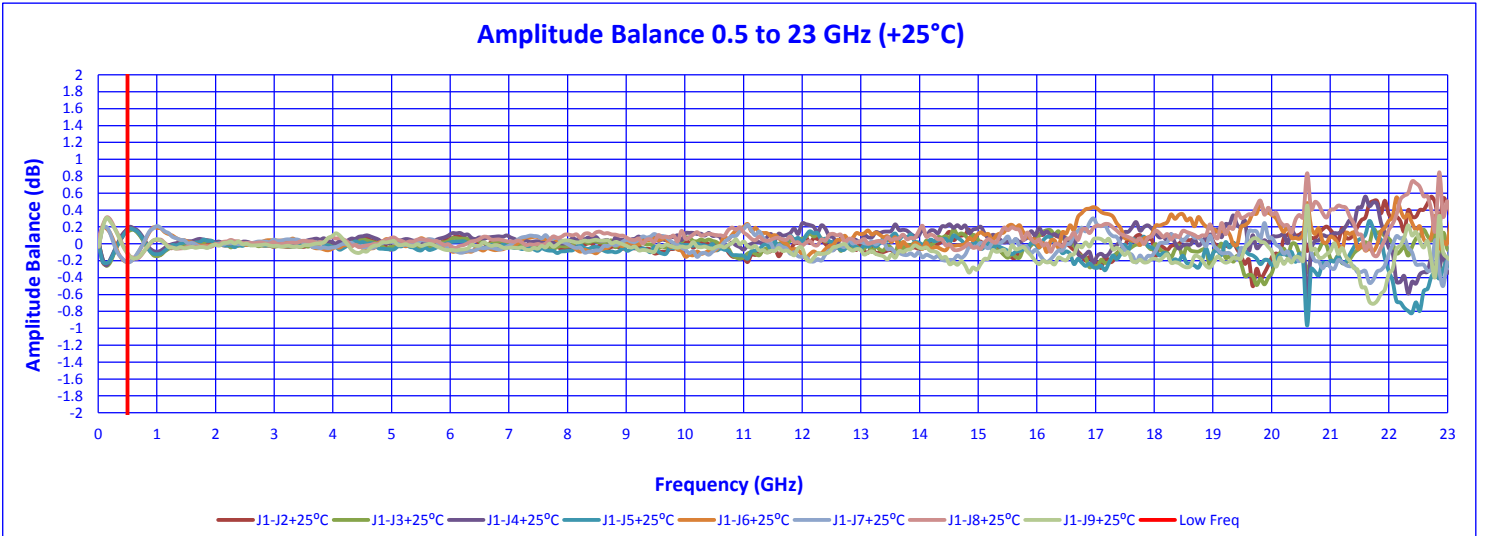
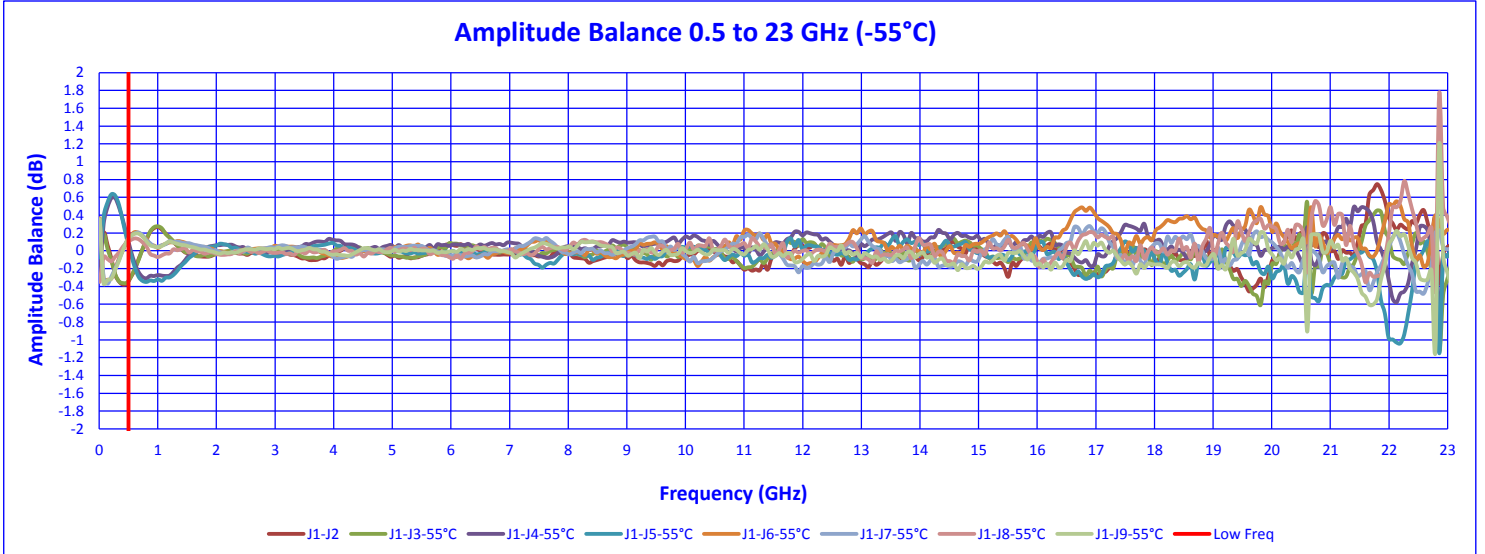


# Typical Characteristics ON APD-8-DC23G-292FF



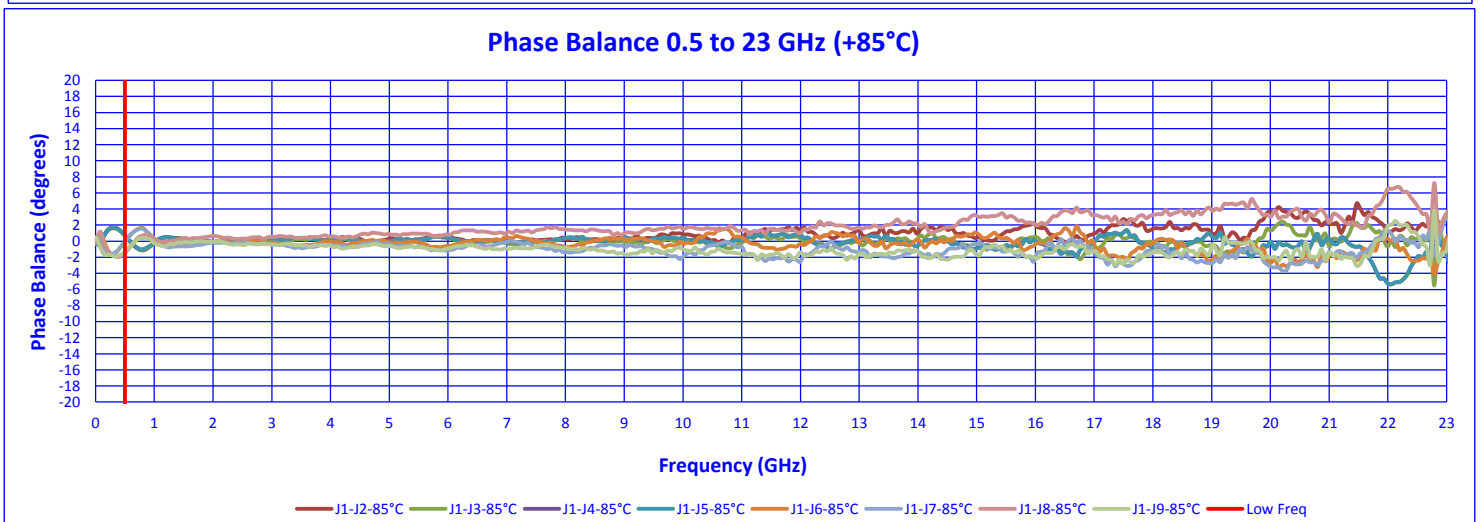
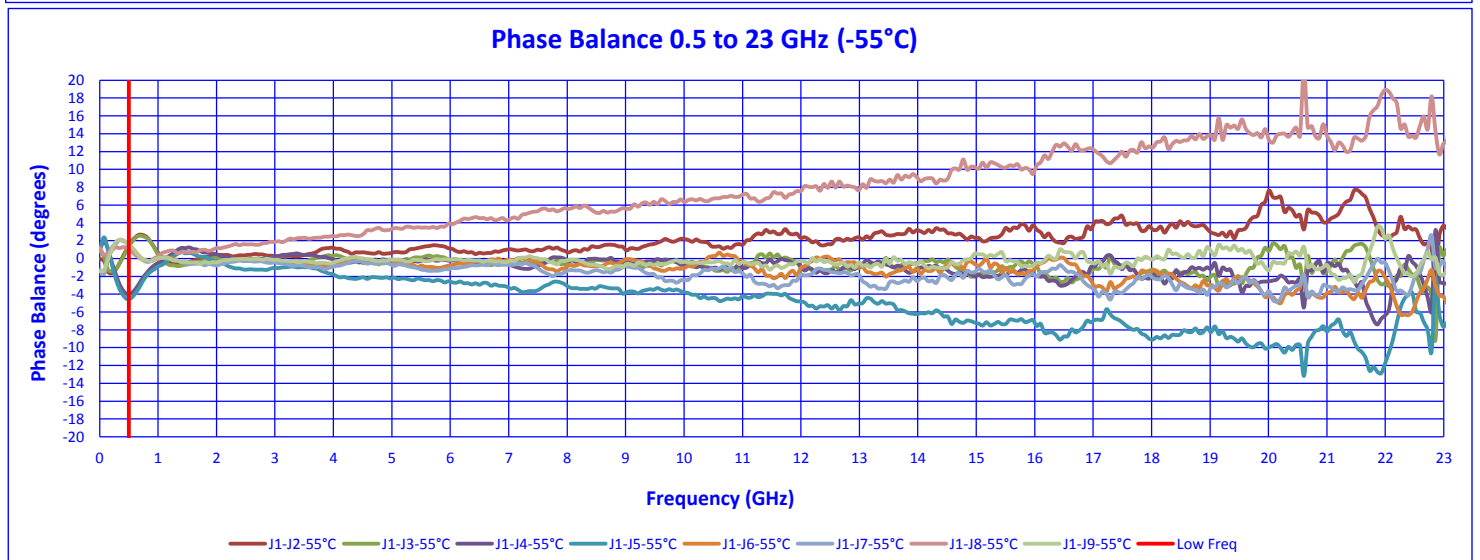
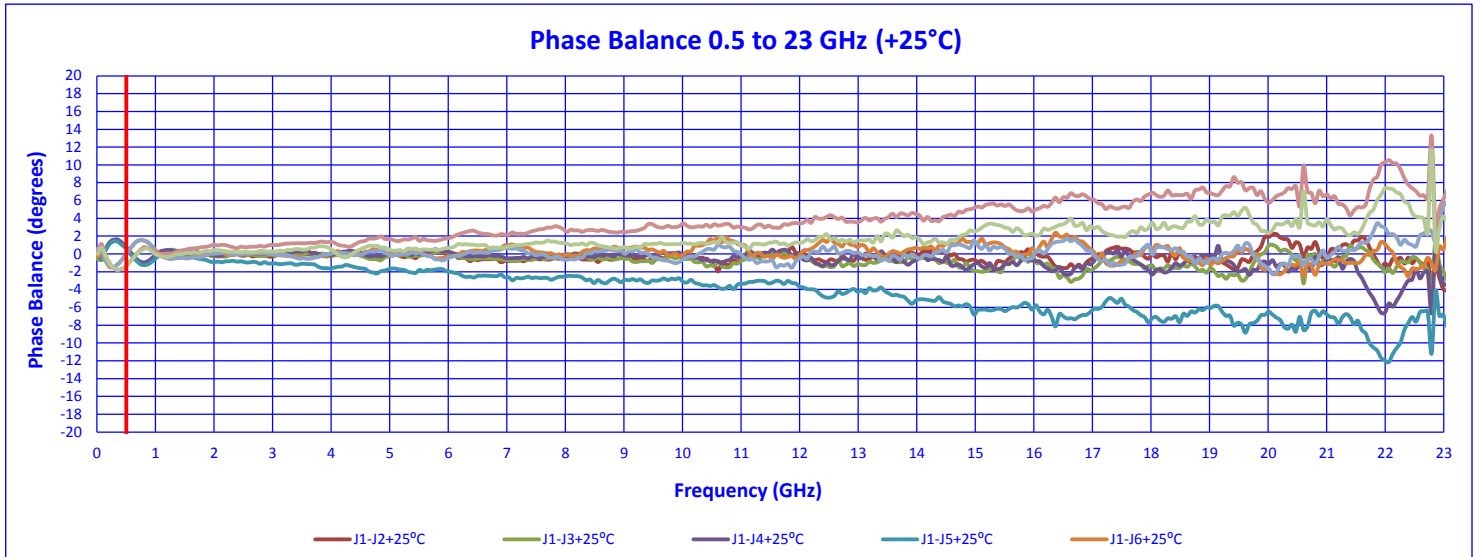


# Typical Characteristics ON APD-8-DC23G-292FF





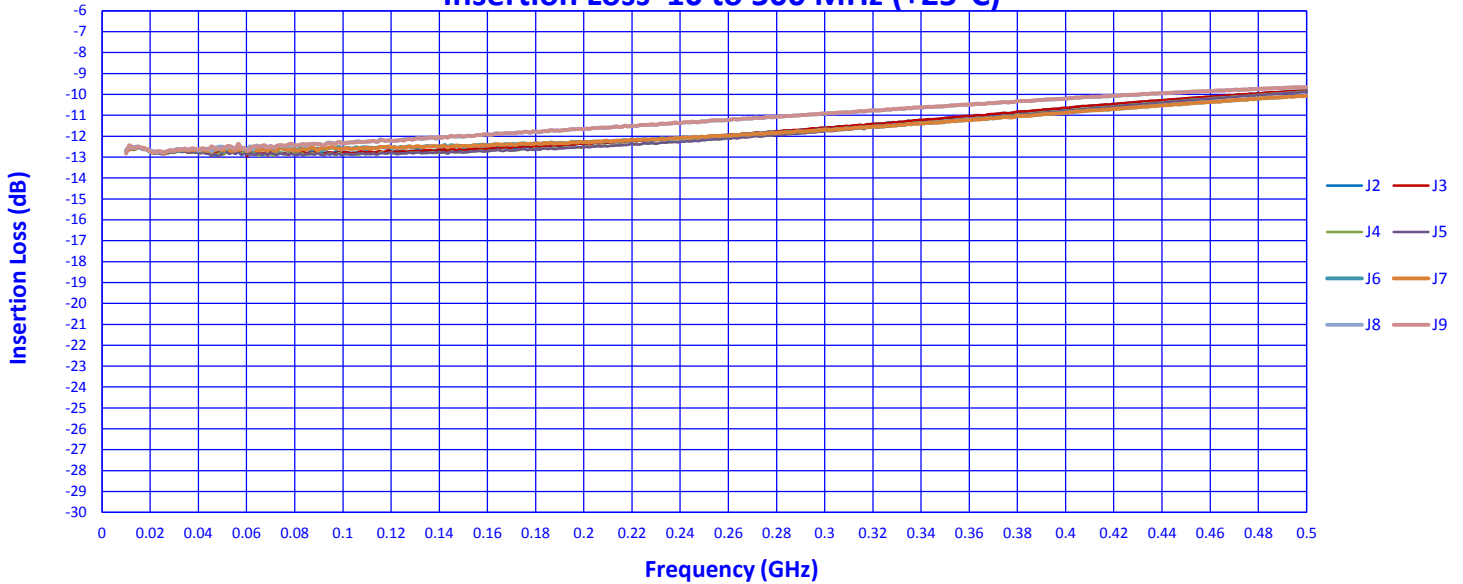
# Typical Characteristics ON APD-8-DC23G-292FF





# Typical Characteristics ON APD-8-DC23G-292FF

**Insertion Loss 10 to 500 MHz (+25°C)**



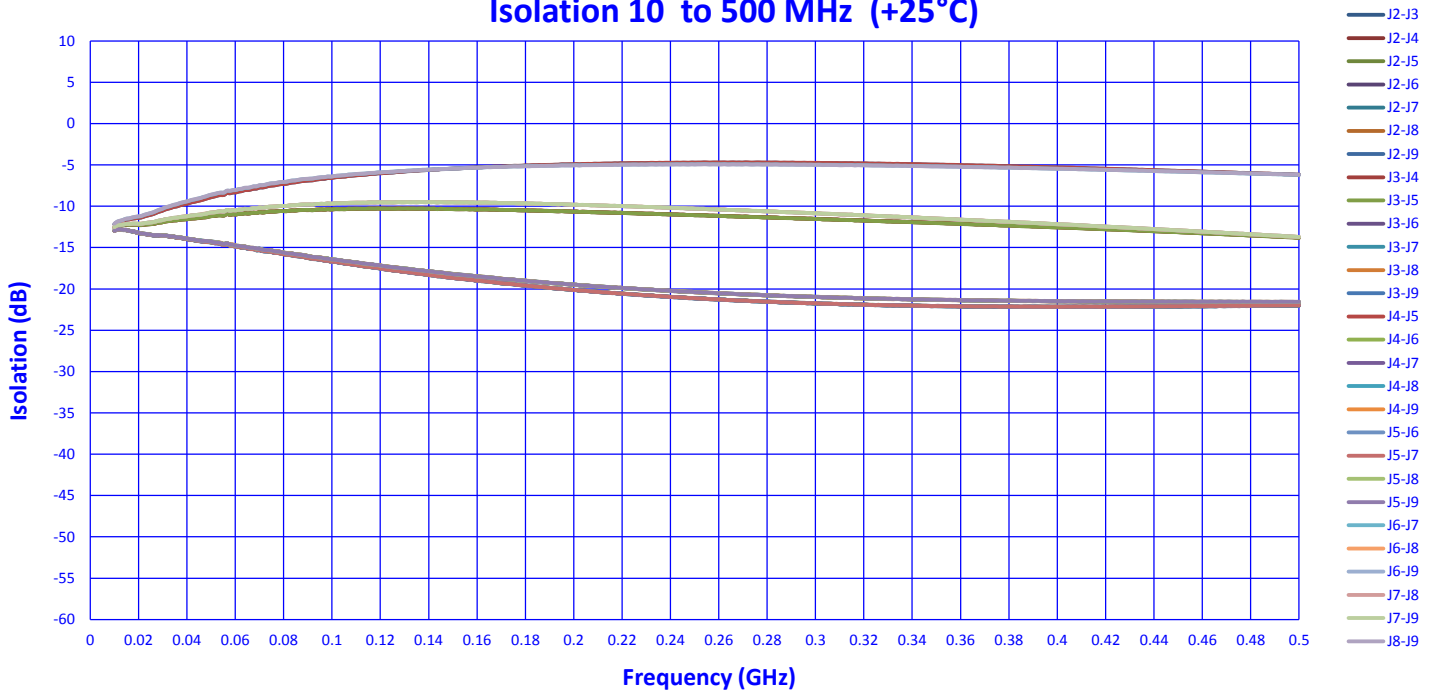
| Insertion Loss Data |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| Frequency (Hz)      | J2     | J3     | J4     | J5     | J6     | J7     | J8     |
| 0.010               | -12.78 | -12.78 | -12.74 | -12.79 | -12.77 | -12.71 | -12.64 |
| 0.020               | -12.83 | -12.77 | -12.84 | -12.80 | -12.73 | -12.76 | -12.72 |
| 0.030               | -12.71 | -12.74 | -12.75 | -12.75 | -12.71 | -12.68 | -12.62 |
| 0.041               | -12.78 | -12.81 | -12.82 | -12.79 | -12.69 | -12.67 | -12.65 |
| 0.050               | -12.78 | -12.75 | -12.88 | -12.76 | -12.70 | -12.68 | -12.51 |
| 0.060               | -12.92 | -12.96 | -12.82 | -12.86 | -12.66 | -12.71 | -12.62 |
| 0.070               | -12.78 | -12.77 | -12.85 | -12.83 | -12.57 | -12.54 | -12.46 |
| 0.080               | -12.80 | -12.88 | -12.89 | -12.89 | -12.67 | -12.70 | -12.45 |
| 0.090               | -12.83 | -12.88 | -12.86 | -12.88 | -12.66 | -12.56 | -12.38 |
| 0.101               | -12.77 | -12.76 | -12.88 | -12.85 | -12.60 | -12.57 | -12.36 |
| 0.110               | -12.74 | -12.76 | -12.87 | -12.83 | -12.54 | -12.56 | -12.25 |
| 0.120               | -12.76 | -12.76 | -12.78 | -12.81 | -12.57 | -12.52 | -12.23 |
| 0.130               | -12.69 | -12.70 | -12.79 | -12.80 | -12.52 | -12.50 | -12.13 |
| 0.140               | -12.63 | -12.66 | -12.76 | -12.79 | -12.49 | -12.48 | -12.06 |
| 0.150               | -12.65 | -12.66 | -12.76 | -12.76 | -12.49 | -12.47 | -12.00 |
| 0.161               | -12.59 | -12.59 | -12.69 | -12.72 | -12.43 | -12.44 | -11.91 |
| 0.170               | -12.53 | -12.53 | -12.69 | -12.68 | -12.37 | -12.41 | -11.87 |
| 0.180               | -12.48 | -12.46 | -12.60 | -12.63 | -12.33 | -12.34 | -11.79 |
| 0.190               | -12.45 | -12.43 | -12.59 | -12.57 | -12.32 | -12.33 | -11.75 |
| 0.200               | -12.38 | -12.35 | -12.48 | -12.52 | -12.29 | -12.26 | -11.64 |
| 0.210               | -12.30 | -12.29 | -12.45 | -12.46 | -12.25 | -12.26 | -11.57 |
| 0.221               | -12.22 | -12.23 | -12.38 | -12.39 | -12.17 | -12.18 | -11.50 |
| 0.231               | -12.17 | -12.16 | -12.35 | -12.35 | -12.13 | -12.15 | -11.45 |
| 0.240               | -12.11 | -12.09 | -12.25 | -12.26 | -12.10 | -12.07 | -11.36 |
| 0.250               | -12.01 | -12.05 | -12.19 | -12.19 | -12.05 | -12.04 | -11.29 |
| 0.260               | -11.94 | -11.94 | -12.10 | -12.11 | -11.98 | -11.97 | -11.23 |
| 0.270               | -11.83 | -11.83 | -12.00 | -11.99 | -11.87 | -11.88 | -11.11 |
| 0.280               | -11.75 | -11.77 | -11.92 | -11.93 | -11.83 | -11.83 | -11.06 |
| 0.291               | -11.68 | -11.69 | -11.83 | -11.86 | -11.78 | -11.77 | -10.98 |
| 0.300               | -11.60 | -11.60 | -11.75 | -11.75 | -11.68 | -11.68 | -10.93 |
| 0.310               | -11.53 | -11.52 | -11.68 | -11.69 | -11.63 | -11.63 | -10.87 |
| 0.320               | -11.41 | -11.41 | -11.56 | -11.56 | -11.54 | -11.55 | -10.77 |
| 0.330               | -11.31 | -11.31 | -11.45 | -11.47 | -11.45 | -11.45 | -10.68 |
| 0.341               | -11.24 | -11.22 | -11.37 | -11.38 | -11.39 | -11.40 | -10.63 |
| 0.351               | -11.12 | -11.12 | -11.28 | -11.27 | -11.29 | -11.30 | -10.56 |
| 0.360               | -11.03 | -11.03 | -11.17 | -11.19 | -11.23 | -11.23 | -10.49 |
| 0.370               | -10.95 | -10.94 | -11.10 | -11.10 | -11.15 | -11.15 | -10.43 |
| 0.380               | -10.84 | -10.82 | -10.95 | -10.98 | -11.02 | -11.02 | -10.31 |
| 0.390               | -10.74 | -10.72 | -10.84 | -10.87 | -10.94 | -10.94 | -10.25 |
| 0.400               | -10.65 | -10.65 | -10.76 | -10.78 | -10.87 | -10.87 | -10.20 |
| 0.411               | -10.55 | -10.53 | -10.65 | -10.67 | -10.76 | -10.77 | -10.11 |
| 0.420               | -10.47 | -10.46 | -10.57 | -10.59 | -10.70 | -10.70 | -10.08 |
| 0.430               | -10.37 | -10.35 | -10.47 | -10.48 | -10.60 | -10.61 | -10.02 |
| 0.440               | -10.29 | -10.28 | -10.37 | -10.40 | -10.52 | -10.53 | -9.94  |
| 0.450               | -10.19 | -10.17 | -10.27 | -10.28 | -10.44 | -10.43 | -9.88  |
| 0.460               | -10.11 | -10.09 | -10.18 | -10.21 | -10.35 | -10.35 | -9.84  |
| 0.471               | -10.03 | -10.01 | -10.09 | -10.12 | -10.28 | -10.27 | -9.77  |
| 0.480               | -9.95  | -9.95  | -10.02 | -10.02 | -10.20 | -10.20 | -9.74  |
| 0.490               | -9.88  | -9.87  | -9.94  | -9.96  | -10.13 | -10.13 | -9.70  |
| 0.500               | 9.82   | -9.82  | -9.85  | -9.89  | -10.07 | -10.06 | -9.65  |





# Typical Characteristics ON APD-8-DC23G-292FF

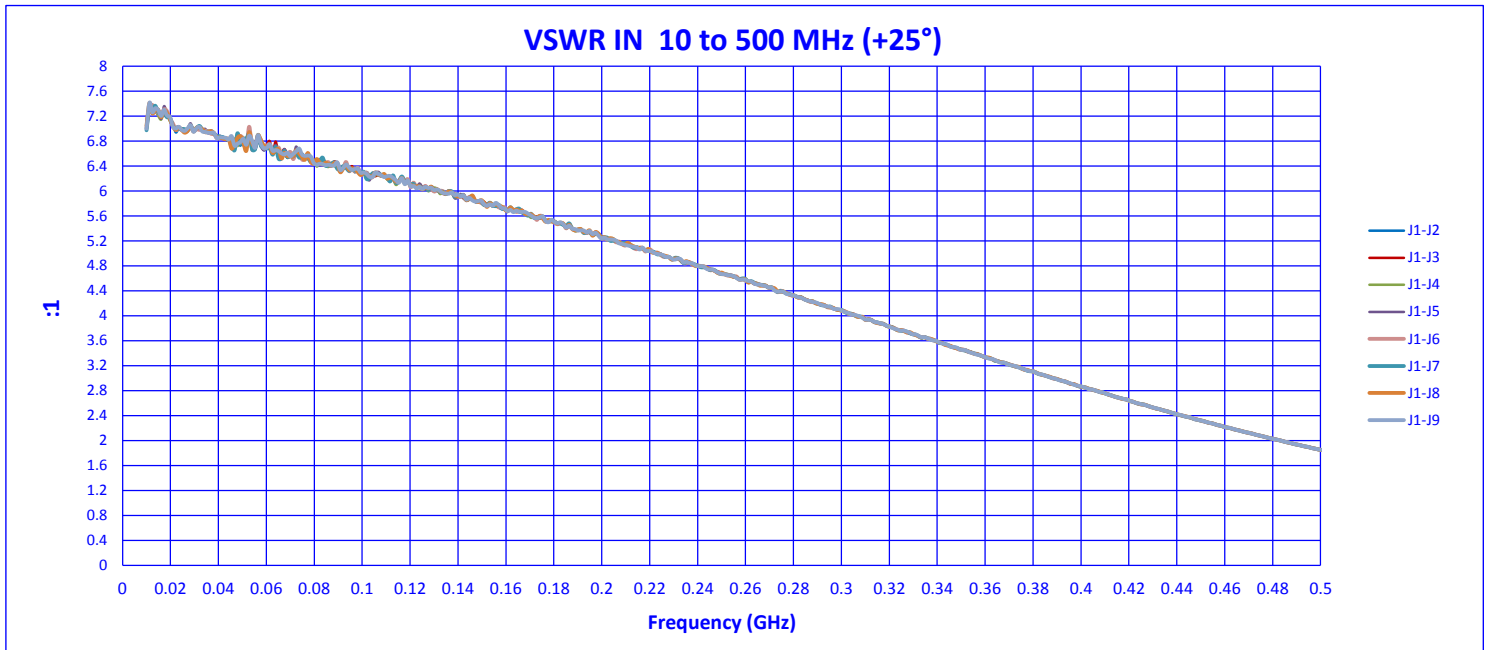
## Isolation 10 to 500 MHz (+25°C)



| Isolation      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Frequency (Hz) | J2-J3  | J2-J4  | J2-J5  | J2-J6  | J2-J7  | J2-J8  | J2-J9  | J3-J4  | J3-J5  | J3-J6  | J3-J7  | J3-J8  | J3-J9  | J4-J5  | J4-J6  | J4-J7  | J4-J8  | J4-J9  | J5-J6  | J5-J7  | J5-J8  | J5-J9  | J6-J7  | J6-J8  | J6-J9  | J7-J8  | J7-J9  | J8-J9 |
| 0.010          | -12.19 | -12.56 | -12.56 | -12.98 | -12.97 | -12.99 | -12.95 | -12.58 | -12.57 | -12.96 | -12.97 | -12.96 | -12.22 | -12.97 | -12.98 | -12.95 | -12.98 | -12.97 | -12.99 | -12.96 | -12.98 | -12.16 | -12.52 | -12.53 | -12.53 | -12.52 | -12.10 |       |
| 0.020          | -11.41 | -12.26 | -12.27 | -13.22 | -13.24 | -13.21 | -13.20 | -12.24 | -12.25 | -13.22 | -13.22 | -13.20 | -13.19 | -11.40 | -13.22 | -13.23 | -13.19 | -13.19 | -13.24 | -13.24 | -13.20 | -11.25 | -12.10 | -12.12 | -12.13 | -12.11 | -11.22 |       |
| 0.030          | -10.57 | -11.95 | -11.96 | -13.60 | -13.58 | -13.55 | -13.55 | -11.94 | -11.95 | -13.58 | -13.59 | -13.55 | -13.54 | -10.57 | -13.59 | -13.59 | -13.54 | -13.54 | -13.58 | -13.58 | -13.56 | -10.35 | -11.69 | -11.70 | -11.70 | -11.69 | -10.32 |       |
| 0.041          | -9.65  | -11.54 | -11.55 | -14.00 | -14.02 | -13.96 | -13.96 | -11.55 | -11.55 | -14.01 | -14.01 | -13.94 | -13.94 | -9.65  | -14.01 | -14.01 | -13.94 | -14.01 | -14.02 | -13.95 | -13.95 | -9.38  | -11.19 | -11.19 | -11.19 | -11.19 | -9.36  |       |
| 0.050          | -8.89  | -11.18 | -11.17 | -14.39 | -14.38 | -14.33 | -14.30 | -11.18 | -11.19 | -14.40 | -14.38 | -14.32 | -14.28 | -8.87  | -14.41 | -14.38 | -14.29 | -14.28 | -14.38 | -14.39 | -14.30 | -8.60  | -10.76 | -10.76 | -10.76 | -10.75 | -8.56  |       |
| 0.060          | -8.33  | -11.01 | -11.00 | -14.88 | -14.86 | -14.80 | -14.78 | -10.99 | -11.00 | -14.89 | -14.91 | -14.81 | -14.83 | -8.33  | -14.90 | -14.92 | -14.75 | -14.75 | -14.89 | -14.89 | -14.80 | -8.04  | -10.49 | -10.50 | -10.49 | -10.51 | -8.02  |       |
| 0.070          | -7.74  | -10.71 | -10.72 | -15.28 | -15.30 | -15.15 | -15.12 | -10.71 | -10.71 | -15.31 | -15.31 | -15.14 | -15.12 | -7.72  | -15.27 | -15.32 | -15.16 | -15.15 | -15.29 | -15.31 | -15.14 | -7.48  | -10.14 | -10.15 | -10.16 | -10.15 | -7.44  |       |
| 0.080          | -7.32  | -10.57 | -10.60 | -15.80 | -15.79 | -15.62 | -15.62 | -10.57 | -10.58 | -15.79 | -15.76 | -15.61 | -15.59 | -7.31  | -15.75 | -15.78 | -15.61 | -15.59 | -15.80 | -15.80 | -15.58 | -7.06  | -9.97  | -9.97  | -9.97  | -9.96  | -7.06  |       |
| 0.090          | -6.91  | -10.48 | -10.46 | -16.24 | -16.20 | -16.01 | -15.99 | -10.45 | -10.44 | -16.22 | -16.22 | -15.99 | -15.99 | -6.90  | -16.22 | -16.21 | -15.99 | -15.99 | -16.22 | -16.25 | -16.01 | -6.71  | -9.79  | -9.80  | -9.80  | -9.79  | -6.68  |       |
| 0.101          | -6.53  | -10.36 | -10.36 | -16.72 | -16.72 | -16.47 | -16.47 | -10.37 | -10.36 | -16.73 | -16.72 | -16.49 | -16.44 | -6.53  | -16.72 | -16.73 | -16.46 | -16.46 | -16.73 | -16.71 | -16.44 | -6.36  | -9.67  | -9.66  | -9.67  | -9.66  | -6.37  |       |
| 0.110          | -6.24  | -10.31 | -10.32 | -17.12 | -17.14 | -16.83 | -16.84 | -10.30 | -10.29 | -17.14 | -17.14 | -16.82 | -16.80 | -6.24  | -17.12 | -17.13 | -16.82 | -16.82 | -17.11 | -17.12 | -16.84 | -6.01  | -9.57  | -9.57  | -9.57  | -9.57  | -6.09  |       |
| 0.120          | -6.00  | -10.29 | -10.30 | -17.56 | -17.54 | -17.23 | -17.21 | -10.28 | -10.29 | -17.55 | -17.55 | -17.19 | -17.19 | -6.01  | -17.52 | -17.55 | -17.20 | -17.17 | -17.54 | -17.55 | -17.22 | -5.70  | -9.50  | -9.53  | -9.54  | -9.54  | -5.90  |       |
| 0.130          | -5.80  | -10.31 | -10.29 | -17.94 | -17.95 | -17.55 | -17.56 | -10.29 | -10.29 | -17.92 | -17.92 | -17.54 | -17.54 | -5.79  | -17.93 | -17.90 | -17.54 | -17.55 | -17.92 | -17.93 | -17.54 | -5.36  | -9.53  | -9.51  | -9.52  | -9.51  | -5.73  |       |
| 0.140          | -5.60  | -10.29 | -10.31 | -18.26 | -18.30 | -17.87 | -17.86 | -10.30 | -10.29 | -18.30 | -18.30 | -17.87 | -17.87 | -5.60  | -18.28 | -18.30 | -17.85 | -17.86 | -18.29 | -18.31 | -17.86 | -5.05  | -9.51  | -9.50  | -9.49  | -9.50  | -5.57  |       |
| 0.150          | -5.46  | -10.35 | -10.34 | -18.66 | -18.64 | -18.20 | -18.19 | -10.33 | -10.34 | -18.65 | -18.66 | -18.20 | -18.19 | -5.46  | -18.65 | -18.67 | -18.16 | -18.17 | -18.64 | -18.67 | -18.19 | -4.80  | -9.52  | -9.52  | -9.52  | -9.53  | -5.45  |       |
| 0.161          | -5.29  | -10.38 | -10.39 | -19.02 | -19.02 | -18.51 | -18.51 | -10.38 | -10.38 | -19.01 | -19.00 | -18.52 | -18.49 | -5.29  | -18.99 | -19.01 | -18.51 | -18.49 | -19.01 | -19.00 | -18.50 | -4.53  | -9.52  | -9.56  | -9.57  | -9.56  | -5.32  |       |
| 0.170          | -5.19  | -10.44 | -10.45 | -19.35 | -19.31 | -18.81 | -18.80 | -10.44 | -10.44 | -19.34 | -19.33 | -18.77 | -18.78 | -5.18  | -19.33 | -19.31 | -18.79 | -18.79 | -19.32 | -19.31 | -18.79 | -4.24  | -9.61  | -9.63  | -9.62  | -9.61  | -5.25  |       |
| 0.180          | -5.07  | -10.49 | -10.50 | -19.62 | -19.60 | -19.03 | -19.04 | -10.49 | -10.49 | -19.58 | -19.60 | -19.02 | -19.02 | -5.06  | -19.60 | -19.57 | -19.02 | -19.01 | -19.60 | -19.59 | -19.01 | -3.92  | -9.73  | -9.66  | -9.66  | -9.65  | -5.16  |       |
| 0.190          | -5.00  | -10.57 | -10.58 | -19.86 | -19.89 | -19.29 | -19.29 | -10.57 | -10.58 | -19.86 | -19.88 | -19.29 | -19.28 | -4.99  | -19.85 | -19.86 | -19.28 | -19.27 | -19.87 | -19.89 | -19.28 | -3.67  | -9.84  | -9.74  | -9.74  | -9.74  | -5.11  |       |
| 0.200          | -4.93  | -10.65 | -10.66 | -20.13 | -20.14 | -19.51 | -19.50 | -10.66 | -10.66 | -20.15 | -20.12 | -19.50 | -19.49 | -4.92  | -20.13 | -20.12 | -19.49 | -19.49 | -20.13 | -20.14 | -19.49 | -3.42  | -9.82  | -9.83  | -9.83  | -9.81  | -5.07  |       |
| 0.210          | -4.87  | -10.72 | -10.74 | -20.36 | -20.37 | -19.71 | -19.70 | -10.73 | -10.74 | -20.36 | -20.35 | -19.70 | -19.68 | -4.86  | -20.34 | -20.34 | -19.69 | -19.67 | -20.36 | -20.37 | -19.69 | -3.10  | -9.90  | -9.89  | -9.90  | -9.90  | -5.03  |       |
| 0.221          | -4.81  | -10.82 | -10.82 | -20.59 | -20.59 | -19.90 | -19.93 | -10.80 | -10.81 | -20.60 | -20.60 | -19.92 | -19.91 | -4.80  | -20.55 | -20.59 | -19.89 | -19.90 | -20.59 | -20.59 | -19.90 | -2.80  | -9.99  | -9.99  | -9.99  | -9.99  | -4.98  |       |
| 0.231          | -4.78  | -10.91 | -10.91 | -20.81 | -20.81 | -20.09 | -20.09 | -10.90 | -10.91 | -20.78 | -20.80 | -20.10 | -20.07 | -4.77  | -20.77 | -20.77 | -20.08 | -20.08 | -20.79 | -20.77 | -20.09 | -2.50  | -10.08 | -10.10 | -10.10 | -10.08 | -4.97  |       |
| 0.240          | -4.75  | -10.99 | -10.99 | -20.99 | -20.98 | -20.25 | -20.25 | -10.98 | -10.98 | -20.99 | -20.99 | -20.25 | -20.23 | -4.74  | -20.96 | -20.96 | -20.23 | -20.23 | -20.97 | -20.98 | -20.24 | -2.25  | -10.19 | -10.18 | -10.19 | -10.17 | -4.95  |       |
| 0.250          | -4.73  | -11.09 | -11.09 | -21.14 | -21.15 | -20.40 | -20.40 | -11.07 | -11.09 | -21.15 | -21.14 | -20.41 | -20.41 | -4.73  | -21.12 | -21.12 | -20.39 | -20.38 | -21.14 | -21.13 | -20.39 | -2.01  | -10.29 | -10.30 | -10.30 | -10.29 | -4.95  |       |
| 0.260          | -4.73  | -11.16 | -11.17 | -21.29 | -21.27 | -20.54 | -20.53 | -11.15 | -11.16 | -21.27 | -21.29 | -20.53 | -20.52 | -4.71  | -21.24 | -21.26 | -20.51 | -20.50 | -21.28 | -21.28 | -20.50 | -20.53 | -1.80  | -10.39 | -10.40 | -10.40 | -10.39 | -4.95 |
| 0.270          | -4.73  | -11.27 | -11.28 | -21.44 | -21.44 | -20.67 | -20.68 | -11.26 | -11.27 | -21.43 | -21.44 | -20.68 | -20.64 | -4.73  | -21.40 | -21.41 | -20.66 | -20.65 | -21.40 | -21.41 | -20.68 | -1.60  | -10.52 | -10.51 | -10.51 | -10.51 | -4.96  |       |
| 0.280          | -4.72  | -11.35 | -11.35 | -21.55 | -21.55 | -20.78 | -20.78 | -11.33 | -11.34 | -21.54 | -21.57 | -20.77 | -20.76 | -4.72  | -21.52 | -21.53 | -20.75 | -20.75 | -21.53 | -21.54 | -20.77 | -1.40  | -10.61 | -10.61 | -10.62 | -10.61 | -4.95  |       |
| 0.291          | -4.73  | -11.44 | -11.44 | -21.65 | -21.67 | -20.88 | -20.89 | -11.44 | -11.45 | -21.67 | -21.66 | -20.89 | -20.88 | -4.73  | -21.65 | -21.65 | -20.87 | -20.86 | -21.65 | -21.64 | -20.88 | -1.20  | -10.73 | -10.74 | -10.73 | -10.73 | -4.97  |       |
| 0.300          | -4.76  | -11.54 | -11.56 | -21.78 | -21.78 | -20.98 | -20.99 | -11.53 | -11.55 | -21.76 | -21.77 | -20.99 | -20.96 | -4.75  | -21.75 | -21.74 | -20.96 | -20.96 | -21.75 | -21.74 | -20.97 | -1.00  | -10.86 | -10.86 | -10.86 | -10.85 | -5.00  |       |
| 0.310          | -4.80  | -11.65 | -11.66 | -21.87 | -21.87 | -21.08 | -21.09 | -11.64 | -11.65 | -21.85 | -21.86 | -21.09 | -21.07 | -4.80  | -21.85 | -21.84 | -21.06 | -21.05 | -21.83 | -21.86 | -21.07 | -0.80  | -10.99 | -10.99 | -11.00 | -10.99 | -5.05  |       |
| 0.320          | -4.82  | -11.72 | -11.74 | -21.92 | -21.92 | -21.14 | -21.15 | -11.72 | -11.74 | -21.93 | -21.92 | -21.15 | -21.13 | -4.81  | -21.90 | -21.90 | -21.13 | -21.14 | -21.90 | -21.92 | -21.13 | -0.60  | -11.10 | -11.10 | -11.10 | -11.09 | -5.05  |       |
| 0.330          | -4.88  | -11.83 | -11.84 | -22.00 | -21.99 | -21.22 | -21.21 | -11.82 | -11.84 | -22.00 | -22.00 | -21.24 | -21.24 | -4.86  | -21.97 | -21.97 | -21.20 | -21.18 | -21.98 | -21.97 | -21.21 | -0.40  | -11.24 | -11.23 | -11.24 | -11.23 | -5.11  |       |
| 0.341          | -4.92  | -11.93 | -11.94 | -22.03 | -22.05 | -21.30 | -21.29 | -11.92 | -11.95 | -22.04 | -22.04 | -21.28 | -21.26 | -4.91  | -22.01 | -22.02 | -21.25 | -21.25 | -22.03 | -22.04 | -21.25 | -0.20  | -11.37 | -11.37 | -11.37 | -11.36 | -5.14  |       |
| 0.351          | -4.97  | -12.02 | -12.03 | -22.10 | -22.09 | -21.34 | -21.33 | -12.03 | -12.05 | -22.07 | -22.09 | -21.34 | -21.32 | -4.96  | -22.05 | -22.05 | -21.30 | -21.30 | -22.05 | -22.06 | -21.32 | -0.10  | -11.51 | -11.49 | -11.50 | -11.49 | -5.19  |       |
| 0.360          | -5.03  | -12.13 | -12.14 | -22.11 | -22.12 | -21.37 | -21.38 | -12.13 | -12.14 | -22.13 | -22.11 | -21.37 | -21.37 | -5.03  | -22.12 | -22.12 | -21.36 | -21.36 | -22.10 | -22.12 | -21.37 | -0.00  | -11.63 | -11.63 | -11.63 | -11.63 | -5.24  |       |
| 0.370          | -5.10  | -12.23 | -12.25 | -22.17 | -22.15 | -21.43 | -21.44 | -12.23 | -12.25 | -22.14 | -22.16 | -21.43 | -21.41 | -5.09  | -22.12 | -22.12 | -21.39 | -21.40 | -22.12 | -22.14 | -21.40 | -0.20  | -11.76 | -11.77 | -11.77 | -11.76 | -5.29  |       |
| 0.380          | -5.15  | -12.31 | -12.33 | -22.14 | -22.16 | -21.45 | -21.44 | -12.31 | -12.33 | -22.13 | -22.15 | -21.43 | -21.41 | -5.13  | -22.11 | -22.11 | -21.41 | -21.41 | -22.11 | -22.13 | -21.41 | -0.40  | -11.88 | -11.88 | -11.88 | -11.87 | -5.33  |       |
| 0.390          | -5.23  | -12.43 | -12.45 | -22.17 | -22.17 | -21.48 | -21.48 | -12.44 | -12.44 | -22.17 | -22.18 | -21.49 | -21.47 | -5.22  | -22.15 | -22.15 | -21.45 | -21.45 | -22.14 | -22.16 | -21.48 | -0.60  | -12.03 | -12.03 | -12.03 | -12.01 | -5.40  |       |
| 0.400          | -5.30  | -12.54 | -12.55 | -22.18 | -22.17 | -21.50 | -21.50 | -12.54 | -12.55 | -22.18 | -22.18 | -21.50 | -21.50 | -5.29  | -22.14 | -22.14 | -21.47 | -21.48 | -22.15 | -22.15 | -21.49 | -0.80  | -12.16 | -12.18 | -12.17 | -12.17 | -5.46  |       |
| 0.411          | -5.38  | -12.66 | -12.67 | -22.17 | -22.16 | -21.51 | -21.51 | -12.65 | -12.66 | -22.15 | -22.16 | -21.52 | -21.51 | -5.37  | -22.14 | -22.13 | -21.49 | -21.49 | -22.14 | -22.14 | -21.48 | -1.00  | -12.31 | -12.32 | -12.32 | -12.31 | -5.52  |       |
| 0.420          | -5.48  | -12.78 | -12.80 | -22.19 | -22.19 | -21.56 | -21.55 | -12.78 | -12.80 | -22.16 | -22.18 | -21.55 | -21.55 | -5.47  | -22.15 | -22.14 | -21.52 | -21.52 | -22.16 | -22.15 | -21.54 | -1.20  | -12    |        |        |        |        |       |



# Typical Characteristics ON APD-8-DC23G-292FF

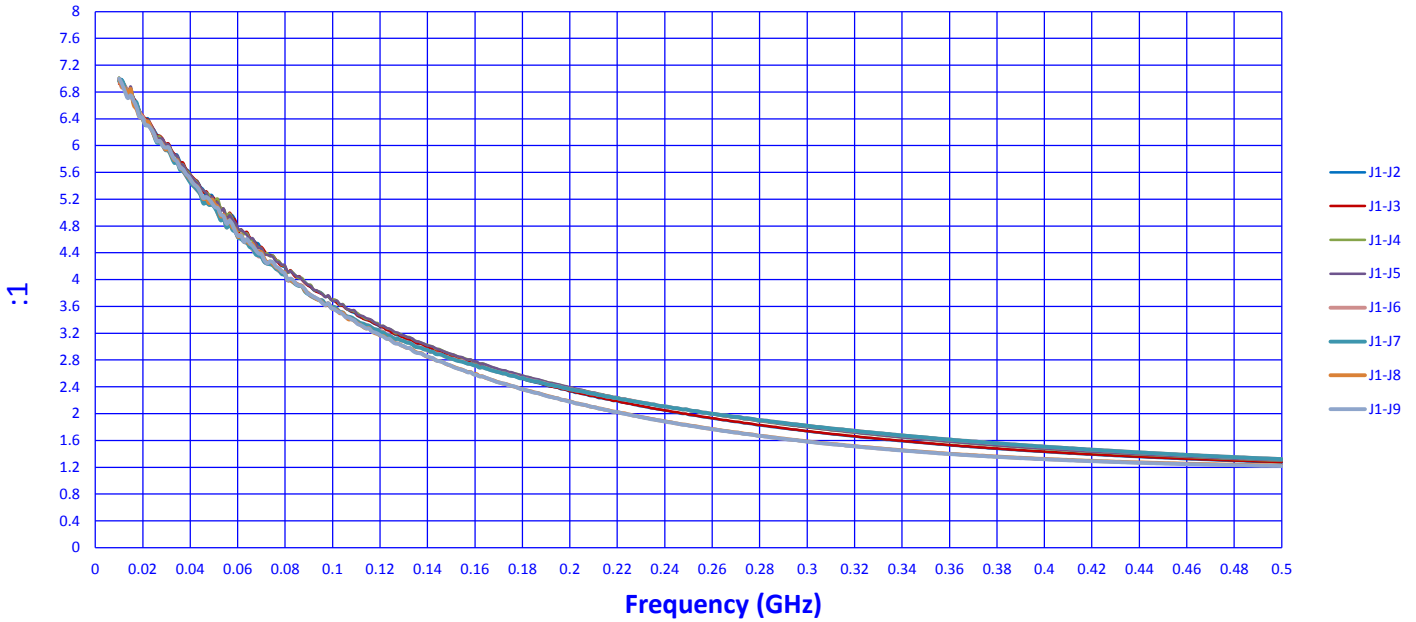


| VSWR IN         |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 6.98  | 7.13  | 7.05  | 7.11  | 7.01  | 6.97  | 7.04  | 7.00  |
| 0.020           | 7.17  | 7.13  | 7.11  | 7.16  | 7.15  | 7.18  | 7.15  | 7.18  |
| 0.030           | 6.95  | 6.98  | 6.95  | 6.96  | 6.97  | 6.97  | 6.95  | 6.95  |
| 0.041           | 6.86  | 6.87  | 6.86  | 6.88  | 6.84  | 6.87  | 6.85  | 6.86  |
| 0.042           | 6.87  | 6.85  | 6.86  | 6.85  | 6.85  | 6.86  | 6.84  | 6.85  |
| 0.050           | 6.83  | 6.79  | 6.86  | 6.73  | 6.82  | 6.83  | 6.77  | 6.83  |
| 0.060           | 6.69  | 6.75  | 6.73  | 6.69  | 6.72  | 6.68  | 6.71  | 6.69  |
| 0.070           | 6.57  | 6.55  | 6.57  | 6.63  | 6.62  | 6.57  | 6.55  | 6.55  |
| 0.080           | 6.46  | 6.49  | 6.50  | 6.48  | 6.44  | 6.47  | 6.44  | 6.45  |
| 0.090           | 6.43  | 6.44  | 6.44  | 6.41  | 6.45  | 6.35  | 6.44  | 6.46  |
| 0.101           | 6.27  | 6.30  | 6.30  | 6.31  | 6.29  | 6.31  | 6.29  | 6.30  |
| 0.110           | 6.21  | 6.22  | 6.18  | 6.19  | 6.22  | 6.21  | 6.20  | 6.24  |
| 0.120           | 6.09  | 6.07  | 6.09  | 6.11  | 6.06  | 6.10  | 6.09  | 6.07  |
| 0.130           | 6.03  | 6.01  | 6.05  | 5.99  | 5.99  | 6.02  | 6.01  | 6.01  |
| 0.140           | 5.95  | 5.93  | 5.89  | 5.89  | 5.91  | 5.92  | 5.91  | 5.95  |
| 0.150           | 5.82  | 5.82  | 5.81  | 5.82  | 5.81  | 5.83  | 5.85  | 5.84  |
| 0.161           | 5.66  | 5.70  | 5.68  | 5.69  | 5.68  | 5.69  | 5.67  | 5.68  |
| 0.170           | 5.62  | 5.61  | 5.57  | 5.60  | 5.61  | 5.64  | 5.63  | 5.61  |
| 0.180           | 5.52  | 5.52  | 5.51  | 5.49  | 5.49  | 5.50  | 5.51  | 5.50  |
| 0.190           | 5.37  | 5.36  | 5.36  | 5.38  | 5.37  | 5.38  | 5.38  | 5.37  |
| 0.200           | 5.27  | 5.25  | 5.24  | 5.25  | 5.24  | 5.25  | 5.25  | 5.24  |
| 0.210           | 5.15  | 5.14  | 5.14  | 5.14  | 5.14  | 5.12  | 5.17  | 5.14  |
| 0.221           | 5.05  | 5.03  | 5.04  | 5.04  | 5.05  | 5.02  | 5.02  | 5.03  |
| 0.231           | 4.92  | 4.91  | 4.91  | 4.90  | 4.91  | 4.93  | 4.92  | 4.90  |
| 0.240           | 4.80  | 4.80  | 4.80  | 4.80  | 4.80  | 4.80  | 4.80  | 4.79  |
| 0.250           | 4.68  | 4.67  | 4.67  | 4.68  | 4.67  | 4.68  | 4.69  | 4.67  |
| 0.260           | 4.56  | 4.59  | 4.59  | 4.59  | 4.57  | 4.59  | 4.58  | 4.58  |
| 0.270           | 4.46  | 4.45  | 4.46  | 4.46  | 4.45  | 4.45  | 4.45  | 4.45  |
| 0.280           | 4.33  | 4.34  | 4.33  | 4.33  | 4.32  | 4.34  | 4.33  | 4.33  |
| 0.291           | 4.20  | 4.19  | 4.20  | 4.20  | 4.18  | 4.19  | 4.19  | 4.19  |
| 0.300           | 4.08  | 4.08  | 4.08  | 4.08  | 4.09  | 4.09  | 4.08  | 4.08  |
| 0.310           | 3.93  | 3.94  | 3.94  | 3.95  | 3.94  | 3.94  | 3.93  | 3.94  |
| 0.320           | 3.83  | 3.83  | 3.83  | 3.84  | 3.82  | 3.83  | 3.83  | 3.83  |
| 0.330           | 3.70  | 3.70  | 3.70  | 3.70  | 3.71  | 3.70  | 3.71  | 3.70  |
| 0.340           | 3.59  | 3.59  | 3.59  | 3.60  | 3.59  | 3.60  | 3.59  | 3.60  |
| 0.351           | 3.45  | 3.45  | 3.45  | 3.46  | 3.46  | 3.45  | 3.45  | 3.45  |
| 0.360           | 3.33  | 3.34  | 3.33  | 3.34  | 3.33  | 3.33  | 3.33  | 3.33  |
| 0.370           | 3.22  | 3.22  | 3.21  | 3.22  | 3.22  | 3.22  | 3.22  | 3.21  |
| 0.380           | 3.10  | 3.11  | 3.11  | 3.11  | 3.11  | 3.11  | 3.11  | 3.11  |
| 0.390           | 2.99  | 2.99  | 2.99  | 2.99  | 2.99  | 2.99  | 2.99  | 2.99  |
| 0.400           | 2.87  | 2.87  | 2.87  | 2.87  | 2.87  | 2.86  | 2.87  | 2.87  |
| 0.411           | 2.75  | 2.75  | 2.75  | 2.75  | 2.75  | 2.75  | 2.75  | 2.75  |
| 0.420           | 2.63  | 2.64  | 2.64  | 2.64  | 2.63  | 2.64  | 2.64  | 2.64  |
| 0.430           | 2.53  | 2.53  | 2.52  | 2.53  | 2.53  | 2.53  | 2.53  | 2.53  |
| 0.440           | 2.42  | 2.42  | 2.42  | 2.42  | 2.42  | 2.42  | 2.42  | 2.42  |
| 0.450           | 2.33  | 2.32  | 2.32  | 2.33  | 2.33  | 2.32  | 2.32  | 2.32  |
| 0.460           | 2.22  | 2.22  | 2.22  | 2.22  | 2.22  | 2.22  | 2.22  | 2.22  |
| 0.471           | 2.12  | 2.12  | 2.12  | 2.12  | 2.12  | 2.12  | 2.12  | 2.12  |
| 0.480           | 2.03  | 2.02  | 2.02  | 2.03  | 2.03  | 2.03  | 2.03  | 2.02  |
| 0.490           | 1.94  | 1.94  | 1.93  | 1.94  | 1.93  | 1.94  | 1.94  | 1.94  |
| 0.500           | 1.85  | 1.85  | 1.85  | 1.85  | 1.85  | 1.85  | 1.85  | 1.85  |



# Typical Characteristics ON APD-8-DC23G-292FF

**VSWR OUT 10 to 500 MHz (+25°C)**

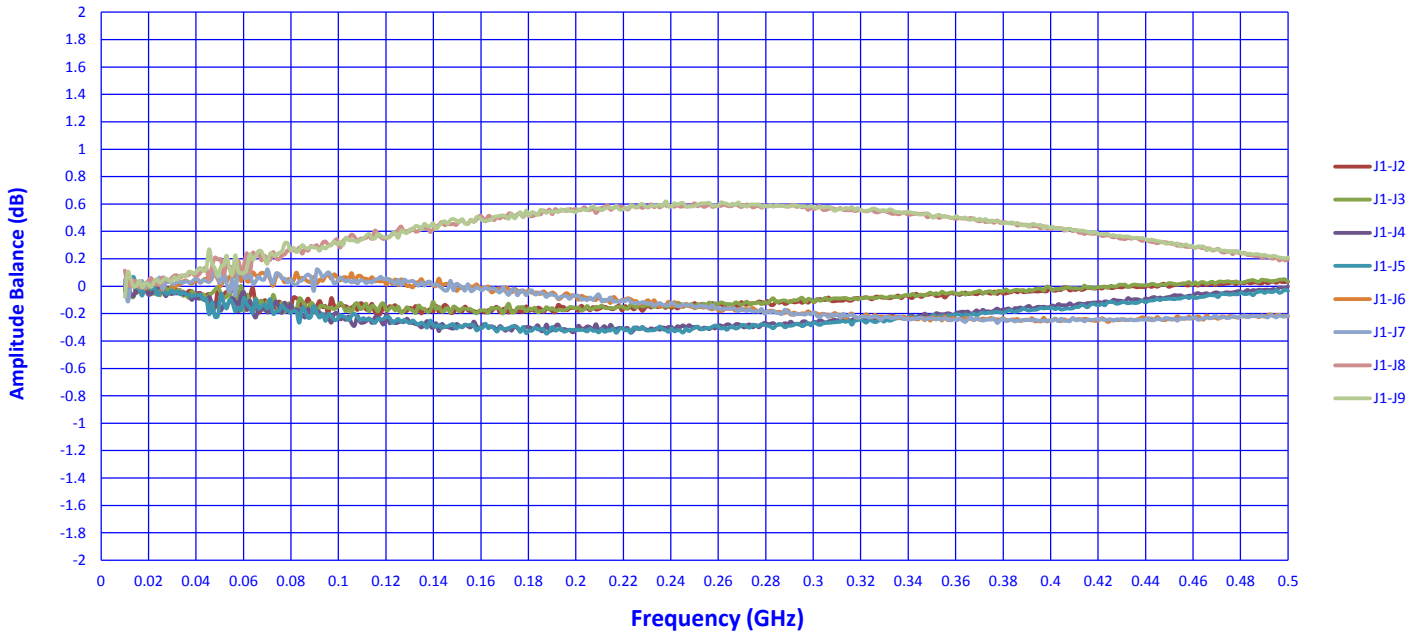


| VSWR OUT        |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 6.97  | 6.92  | 7.02  | 6.96  | 6.98  | 6.96  | 7.00  | 7.00  |
| 0.020           | 6.43  | 6.46  | 6.45  | 6.42  | 6.44  | 6.40  | 6.41  | 6.42  |
| 0.030           | 6.01  | 6.03  | 6.02  | 6.01  | 5.93  | 5.94  | 5.94  | 5.97  |
| 0.041           | 5.53  | 5.55  | 5.53  | 5.54  | 5.44  | 5.42  | 5.47  | 5.46  |
| 0.042           | 5.49  | 5.50  | 5.49  | 5.47  | 5.38  | 5.38  | 5.41  | 5.41  |
| 0.050           | 5.17  | 5.20  | 5.19  | 5.15  | 5.11  | 5.07  | 5.12  | 5.08  |
| 0.060           | 4.73  | 4.71  | 4.73  | 4.76  | 4.63  | 4.62  | 4.64  | 4.65  |
| 0.070           | 4.45  | 4.49  | 4.47  | 4.47  | 4.34  | 4.34  | 4.41  | 4.38  |
| 0.080           | 4.18  | 4.21  | 4.21  | 4.21  | 4.07  | 4.07  | 4.11  | 4.09  |
| 0.090           | 3.92  | 3.91  | 3.93  | 3.92  | 3.79  | 3.79  | 3.80  | 3.79  |
| 0.101           | 3.68  | 3.69  | 3.70  | 3.68  | 3.59  | 3.59  | 3.56  | 3.56  |
| 0.110           | 3.47  | 3.46  | 3.50  | 3.48  | 3.38  | 3.38  | 3.35  | 3.34  |
| 0.120           | 3.29  | 3.30  | 3.31  | 3.31  | 3.23  | 3.21  | 3.16  | 3.17  |
| 0.130           | 3.15  | 3.14  | 3.17  | 3.17  | 3.08  | 3.08  | 3.00  | 3.01  |
| 0.140           | 2.99  | 2.98  | 3.03  | 3.02  | 2.94  | 2.95  | 2.85  | 2.86  |
| 0.150           | 2.86  | 2.85  | 2.89  | 2.89  | 2.82  | 2.82  | 2.72  | 2.72  |
| 0.161           | 2.73  | 2.73  | 2.77  | 2.78  | 2.71  | 2.71  | 2.59  | 2.58  |
| 0.170           | 2.61  | 2.61  | 2.66  | 2.66  | 2.61  | 2.62  | 2.46  | 2.46  |
| 0.180           | 2.52  | 2.52  | 2.56  | 2.57  | 2.53  | 2.53  | 2.36  | 2.36  |
| 0.190           | 2.42  | 2.43  | 2.48  | 2.47  | 2.44  | 2.44  | 2.27  | 2.26  |
| 0.200           | 2.33  | 2.33  | 2.39  | 2.39  | 2.36  | 2.36  | 2.18  | 2.18  |
| 0.210           | 2.26  | 2.27  | 2.31  | 2.32  | 2.30  | 2.30  | 2.10  | 2.10  |
| 0.221           | 2.18  | 2.18  | 2.24  | 2.24  | 2.22  | 2.22  | 2.02  | 2.02  |
| 0.231           | 2.11  | 2.11  | 2.16  | 2.17  | 2.16  | 2.16  | 1.95  | 1.95  |
| 0.240           | 2.04  | 2.05  | 2.10  | 2.11  | 2.11  | 2.11  | 1.88  | 1.88  |
| 0.250           | 1.98  | 1.99  | 2.05  | 2.05  | 2.05  | 2.05  | 1.82  | 1.82  |
| 0.260           | 1.93  | 1.93  | 1.99  | 1.99  | 2.00  | 2.00  | 1.77  | 1.77  |
| 0.270           | 1.88  | 1.88  | 1.94  | 1.94  | 1.95  | 1.95  | 1.72  | 1.72  |
| 0.280           | 1.83  | 1.83  | 1.88  | 1.89  | 1.90  | 1.90  | 1.67  | 1.67  |
| 0.291           | 1.78  | 1.78  | 1.84  | 1.84  | 1.86  | 1.86  | 1.63  | 1.62  |
| 0.300           | 1.73  | 1.74  | 1.79  | 1.79  | 1.82  | 1.82  | 1.58  | 1.58  |
| 0.310           | 1.69  | 1.70  | 1.75  | 1.75  | 1.78  | 1.78  | 1.55  | 1.54  |
| 0.320           | 1.66  | 1.66  | 1.72  | 1.72  | 1.74  | 1.74  | 1.51  | 1.51  |
| 0.330           | 1.62  | 1.63  | 1.68  | 1.68  | 1.71  | 1.71  | 1.48  | 1.48  |
| 0.340           | 1.59  | 1.60  | 1.64  | 1.65  | 1.68  | 1.68  | 1.46  | 1.45  |
| 0.351           | 1.56  | 1.56  | 1.61  | 1.61  | 1.64  | 1.64  | 1.43  | 1.42  |
| 0.360           | 1.52  | 1.53  | 1.58  | 1.58  | 1.61  | 1.61  | 1.40  | 1.40  |
| 0.370           | 1.50  | 1.50  | 1.55  | 1.55  | 1.59  | 1.58  | 1.38  | 1.37  |
| 0.380           | 1.47  | 1.48  | 1.52  | 1.53  | 1.56  | 1.56  | 1.36  | 1.35  |
| 0.390           | 1.45  | 1.46  | 1.50  | 1.50  | 1.53  | 1.53  | 1.34  | 1.33  |
| 0.400           | 1.43  | 1.43  | 1.47  | 1.48  | 1.51  | 1.51  | 1.33  | 1.32  |
| 0.411           | 1.40  | 1.41  | 1.45  | 1.45  | 1.48  | 1.48  | 1.31  | 1.30  |
| 0.420           | 1.39  | 1.39  | 1.43  | 1.43  | 1.46  | 1.46  | 1.30  | 1.29  |
| 0.430           | 1.37  | 1.37  | 1.41  | 1.41  | 1.44  | 1.44  | 1.28  | 1.28  |
| 0.440           | 1.35  | 1.36  | 1.39  | 1.39  | 1.42  | 1.42  | 1.27  | 1.27  |
| 0.450           | 1.34  | 1.34  | 1.37  | 1.38  | 1.40  | 1.40  | 1.26  | 1.26  |
| 0.460           | 1.32  | 1.33  | 1.35  | 1.36  | 1.38  | 1.38  | 1.25  | 1.25  |
| 0.471           | 1.31  | 1.31  | 1.34  | 1.34  | 1.37  | 1.37  | 1.24  | 1.24  |
| 0.480           | 1.29  | 1.30  | 1.32  | 1.33  | 1.35  | 1.35  | 1.24  | 1.23  |
| 0.490           | 1.28  | 1.29  | 1.31  | 1.31  | 1.33  | 1.33  | 1.23  | 1.22  |
| 0.500           | 1.27  | 1.28  | 1.30  | 1.30  | 1.32  | 1.32  | 1.22  | 1.22  |



# Typical Characteristics ON APD-8-DC23G-292FF

**Amplitude Balance 10 to 500 MHz (+25°C)**

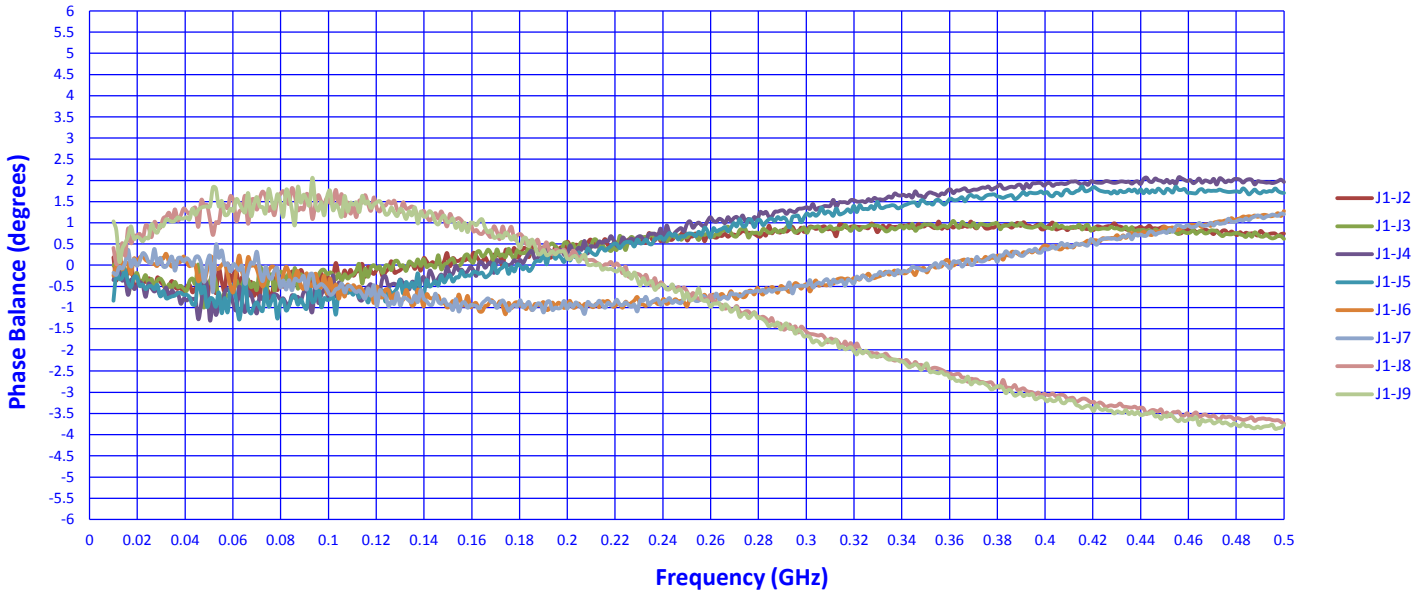


| AMPLITUDE BALANCE |       |       |       |       |       |       |       |       |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz)   | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010             | -0.02 | -0.02 | 0.02  | -0.04 | -0.01 | 0.05  | 0.11  | -0.08 |
| 0.020             | 0.01  | -0.02 | -0.06 | -0.01 | -0.01 | 0.03  | 0.04  | 0.01  |
| 0.030             | -0.05 | -0.01 | -0.06 | -0.03 | 0.03  | 0.03  | 0.06  | 0.03  |
| 0.041             | -0.05 | -0.08 | -0.09 | -0.07 | 0.04  | 0.05  | 0.08  | 0.12  |
| 0.050             | -0.08 | -0.05 | -0.18 | -0.06 | 0.00  | 0.02  | 0.20  | 0.14  |
| 0.060             | -0.14 | -0.18 | -0.04 | -0.08 | 0.12  | 0.07  | 0.16  | 0.09  |
| 0.070             | -0.11 | -0.11 | -0.19 | -0.16 | 0.09  | 0.12  | 0.20  | 0.16  |
| 0.080             | -0.17 | -0.13 | -0.13 | -0.20 | 0.05  | 0.05  | 0.26  | 0.26  |
| 0.090             | -0.16 | -0.14 | -0.15 | -0.14 | 0.07  | -0.03 | 0.28  | 0.28  |
| 0.101             | -0.13 | -0.12 | -0.24 | -0.21 | 0.04  | 0.06  | 0.28  | 0.32  |
| 0.110             | -0.14 | -0.16 | -0.27 | -0.23 | 0.06  | 0.04  | 0.35  | 0.34  |
| 0.120             | -0.17 | -0.18 | -0.20 | -0.22 | 0.01  | 0.06  | 0.35  | 0.36  |
| 0.130             | -0.16 | -0.17 | -0.26 | -0.27 | 0.00  | 0.03  | 0.40  | 0.41  |
| 0.140             | -0.19 | -0.11 | -0.31 | -0.28 | 0.00  | 0.01  | 0.41  | 0.46  |
| 0.150             | -0.17 | -0.16 | -0.28 | -0.31 | -0.03 | 0.02  | 0.45  | 0.48  |
| 0.161             | -0.18 | -0.18 | -0.28 | -0.30 | -0.01 | -0.03 | 0.50  | 0.48  |
| 0.170             | -0.16 | -0.16 | -0.33 | -0.31 | -0.01 | -0.04 | 0.50  | 0.51  |
| 0.180             | -0.18 | -0.16 | -0.30 | -0.32 | -0.03 | -0.04 | 0.51  | 0.52  |
| 0.190             | -0.18 | -0.16 | -0.32 | -0.30 | -0.05 | -0.06 | 0.53  | 0.54  |
| 0.200             | -0.16 | -0.16 | -0.32 | -0.32 | -0.08 | -0.07 | 0.56  | 0.54  |
| 0.210             | -0.17 | -0.16 | -0.32 | -0.34 | -0.08 | -0.06 | 0.56  | 0.57  |
| 0.221             | -0.14 | -0.16 | -0.31 | -0.32 | -0.10 | -0.11 | 0.57  | 0.57  |
| 0.231             | -0.14 | -0.14 | -0.32 | -0.32 | -0.10 | -0.13 | 0.57  | 0.58  |
| 0.240             | -0.16 | -0.14 | -0.30 | -0.31 | -0.15 | -0.12 | 0.59  | 0.58  |
| 0.250             | -0.12 | -0.16 | -0.30 | -0.30 | -0.16 | -0.15 | 0.60  | 0.59  |
| 0.260             | -0.13 | -0.13 | -0.29 | -0.29 | -0.17 | -0.16 | 0.59  | 0.59  |
| 0.270             | -0.12 | -0.14 | -0.29 | -0.29 | -0.17 | -0.16 | 0.58  | 0.59  |
| 0.280             | -0.13 | -0.11 | -0.27 | -0.28 | -0.19 | -0.20 | 0.59  | 0.59  |
| 0.291             | -0.11 | -0.12 | -0.26 | -0.29 | -0.21 | -0.20 | 0.59  | 0.58  |
| 0.300             | -0.12 | -0.12 | -0.26 | -0.26 | -0.19 | -0.19 | 0.56  | 0.58  |
| 0.310             | -0.11 | -0.09 | -0.25 | -0.26 | -0.21 | -0.20 | 0.56  | 0.56  |
| 0.320             | -0.09 | -0.09 | -0.24 | -0.24 | -0.22 | -0.23 | 0.55  | 0.55  |
| 0.330             | -0.08 | -0.08 | -0.23 | -0.26 | -0.22 | -0.23 | 0.55  | 0.56  |
| 0.340             | -0.07 | -0.06 | -0.23 | -0.23 | -0.23 | -0.24 | 0.52  | 0.54  |
| 0.351             | -0.06 | -0.06 | -0.22 | -0.21 | -0.23 | -0.24 | 0.50  | 0.50  |
| 0.360             | -0.05 | -0.05 | -0.19 | -0.21 | -0.25 | -0.25 | 0.49  | 0.51  |
| 0.370             | -0.05 | -0.03 | -0.20 | -0.20 | -0.25 | -0.24 | 0.47  | 0.49  |
| 0.380             | -0.05 | -0.04 | -0.17 | -0.19 | -0.23 | -0.24 | 0.47  | 0.46  |
| 0.390             | -0.04 | -0.04 | -0.15 | -0.17 | -0.24 | -0.25 | 0.44  | 0.45  |
| 0.400             | -0.02 | -0.01 | -0.15 | -0.16 | -0.25 | -0.25 | 0.42  | 0.43  |
| 0.411             | -0.03 | -0.01 | -0.14 | -0.15 | -0.24 | -0.25 | 0.41  | 0.41  |
| 0.420             | -0.01 | -0.01 | -0.12 | -0.14 | -0.25 | -0.24 | 0.38  | 0.38  |
| 0.430             | -0.01 | 0.01  | -0.11 | -0.12 | -0.24 | -0.25 | 0.35  | 0.36  |
| 0.440             | -0.01 | 0.01  | -0.09 | -0.12 | -0.23 | -0.25 | 0.34  | 0.34  |
| 0.450             | 0.00  | 0.02  | -0.08 | -0.09 | -0.23 | -0.24 | 0.32  | 0.31  |
| 0.460             | 0.02  | 0.01  | -0.07 | -0.07 | -0.24 | -0.23 | 0.29  | 0.30  |
| 0.471             | 0.02  | 0.03  | -0.05 | -0.08 | -0.24 | -0.23 | 0.27  | 0.27  |
| 0.480             | 0.02  | 0.03  | -0.04 | -0.05 | -0.22 | -0.22 | 0.24  | 0.24  |
| 0.490             | 0.03  | 0.04  | -0.03 | -0.05 | -0.22 | -0.22 | 0.21  | 0.23  |
| 0.500             | 0.03  | 0.03  | 0.00  | -0.04 | -0.22 | -0.21 | 0.20  | 0.21  |



# Typical Characteristics ON APD-8-DC23G-292FF

**Phase Balance 10 to 500 MHz (+25°C)**

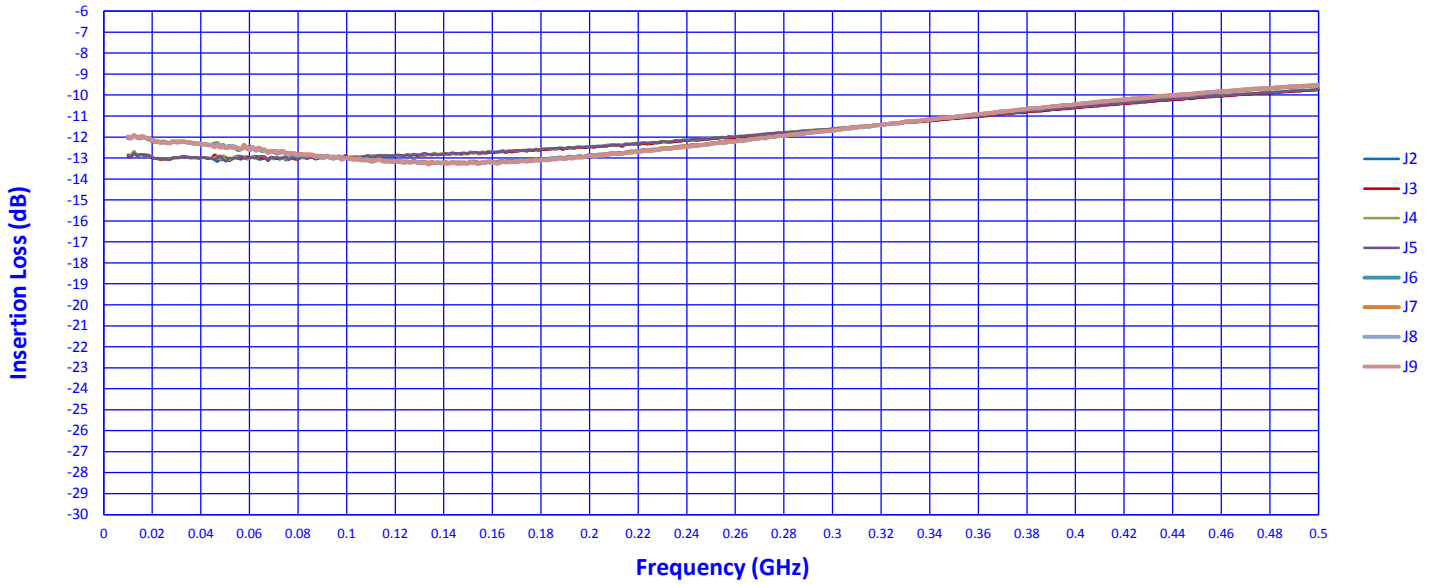


| PHASE BALANCE   |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 0.19  | -0.01 | -0.35 | -0.84 | -0.25 | -0.18 | 0.41  | 1.03  |
| 0.020           | -0.47 | -0.18 | -0.49 | -0.29 | 0.08  | -0.02 | 0.70  | 0.67  |
| 0.030           | -0.39 | -0.32 | -0.72 | -0.74 | 0.16  | 0.17  | 0.88  | 0.95  |
| 0.041           | -0.51 | -0.61 | -0.83 | -0.70 | 0.08  | 0.16  | 1.27  | 1.13  |
| 0.050           | -0.40 | -0.37 | -1.31 | -0.79 | 0.20  | 0.21  | 1.07  | 1.39  |
| 0.060           | -0.22 | -0.59 | -0.92 | -0.48 | -0.63 | 0.03  | 1.53  | 1.28  |
| 0.070           | -0.55 | -0.58 | -1.14 | -0.88 | -0.09 | 0.32  | 1.31  | 1.61  |
| 0.080           | -0.34 | -0.15 | -0.80 | -0.90 | -0.44 | -0.53 | 1.68  | 1.49  |
| 0.090           | -0.27 | -0.33 | -0.64 | -0.95 | -0.55 | -0.26 | 1.32  | 1.67  |
| 0.101           | -0.47 | -0.17 | -0.78 | -0.80 | -0.31 | -0.70 | 1.47  | 1.76  |
| 0.110           | -0.25 | -0.22 | -0.61 | -0.70 | -0.47 | -0.58 | 1.40  | 1.43  |
| 0.120           | -0.10 | -0.09 | -0.66 | -0.51 | -0.50 | -0.97 | 1.34  | 1.48  |
| 0.130           | -0.12 | -0.02 | -0.34 | -0.35 | -0.81 | -0.95 | 1.25  | 1.33  |
| 0.140           | 0.16  | 0.14  | -0.28 | -0.70 | -0.97 | -0.78 | 1.28  | 1.14  |
| 0.150           | 0.29  | 0.05  | -0.04 | -0.30 | -1.00 | -0.93 | 0.92  | 1.03  |
| 0.161           | 0.29  | 0.06  | -0.12 | -0.16 | -0.92 | -0.95 | 0.80  | 0.99  |
| 0.170           | 0.23  | 0.37  | 0.11  | -0.18 | -0.98 | -1.01 | 0.80  | 0.67  |
| 0.180           | 0.26  | 0.29  | 0.12  | -0.02 | -0.96 | -0.83 | 0.74  | 0.40  |
| 0.190           | 0.33  | 0.42  | 0.17  | 0.31  | -0.87 | -1.12 | 0.40  | 0.36  |
| 0.200           | 0.55  | 0.53  | 0.24  | 0.25  | -0.93 | -1.03 | 0.23  | 0.16  |
| 0.210           | 0.61  | 0.40  | 0.44  | 0.33  | -0.96 | -0.93 | 0.12  | 0.00  |
| 0.221           | 0.53  | 0.36  | 0.46  | 0.50  | -0.93 | -0.81 | 0.04  | -0.15 |
| 0.231           | 0.58  | 0.67  | 0.68  | 0.52  | -0.91 | -0.83 | -0.23 | -0.48 |
| 0.240           | 0.73  | 0.70  | 0.56  | 0.60  | -0.80 | -0.85 | -0.47 | -0.47 |
| 0.250           | 0.58  | 0.66  | 0.97  | 0.74  | -0.97 | -0.70 | -0.62 | -0.65 |
| 0.260           | 0.69  | 0.74  | 1.13  | 0.65  | -0.81 | -0.71 | -0.70 | -0.98 |
| 0.270           | 0.72  | 0.69  | 1.11  | 0.99  | -0.74 | -0.69 | -1.04 | -1.04 |
| 0.280           | 0.69  | 0.77  | 1.06  | 1.06  | -0.54 | -0.60 | -1.20 | -1.24 |
| 0.291           | 0.84  | 0.78  | 1.29  | 1.13  | -0.53 | -0.56 | -1.52 | -1.43 |
| 0.300           | 0.84  | 0.76  | 1.37  | 1.22  | -0.46 | -0.48 | -1.58 | -1.67 |
| 0.310           | 0.86  | 0.92  | 1.40  | 1.24  | -0.39 | -0.48 | -1.73 | -1.81 |
| 0.320           | 0.92  | 0.92  | 1.53  | 1.40  | -0.30 | -0.43 | -2.01 | -2.03 |
| 0.330           | 0.78  | 0.93  | 1.55  | 1.49  | -0.28 | -0.23 | -2.08 | -2.17 |
| 0.340           | 0.91  | 0.94  | 1.64  | 1.36  | -0.14 | -0.20 | -2.24 | -2.28 |
| 0.351           | 0.96  | 0.95  | 1.67  | 1.45  | -0.17 | -0.11 | -2.44 | -2.32 |
| 0.360           | 0.94  | 0.96  | 1.79  | 1.57  | 0.04  | -0.07 | -2.56 | -2.67 |
| 0.370           | 0.92  | 0.99  | 1.79  | 1.62  | 0.10  | 0.03  | -2.69 | -2.75 |
| 0.380           | 0.96  | 1.00  | 1.85  | 1.62  | 0.22  | 0.08  | -2.87 | -2.86 |
| 0.390           | 0.93  | 0.99  | 1.89  | 1.66  | 0.24  | 0.23  | -2.93 | -3.01 |
| 0.400           | 0.85  | 0.90  | 1.88  | 1.69  | 0.46  | 0.39  | -3.04 | -3.14 |
| 0.411           | 0.90  | 0.87  | 1.97  | 1.71  | 0.45  | 0.43  | -3.14 | -3.19 |
| 0.420           | 0.83  | 0.89  | 1.97  | 1.85  | 0.59  | 0.55  | -3.22 | -3.44 |
| 0.430           | 0.92  | 0.87  | 1.95  | 1.69  | 0.71  | 0.61  | -3.31 | -3.45 |
| 0.440           | 0.91  | 0.83  | 1.92  | 1.79  | 0.74  | 0.72  | -3.36 | -3.54 |
| 0.450           | 0.91  | 0.83  | 1.95  | 1.70  | 0.91  | 0.79  | -3.54 | -3.55 |
| 0.460           | 0.82  | 0.76  | 1.99  | 1.71  | 0.92  | 0.95  | -3.49 | -3.66 |
| 0.471           | 0.73  | 0.82  | 2.04  | 1.76  | 1.00  | 0.94  | -3.55 | -3.74 |
| 0.480           | 0.71  | 0.76  | 2.03  | 1.74  | 1.09  | 1.04  | -3.61 | -3.77 |
| 0.490           | 0.81  | 0.68  | 1.97  | 1.70  | 1.17  | 1.15  | -3.62 | -3.84 |
| 0.500           | 0.75  | 0.62  | 1.96  | 1.70  | 1.28  | 1.20  | -3.74 | -3.78 |



# Typical Characteristics ON APD-8-DC23G-292FF

**Insertion Loss 10 to 50MHz (-55°C)**

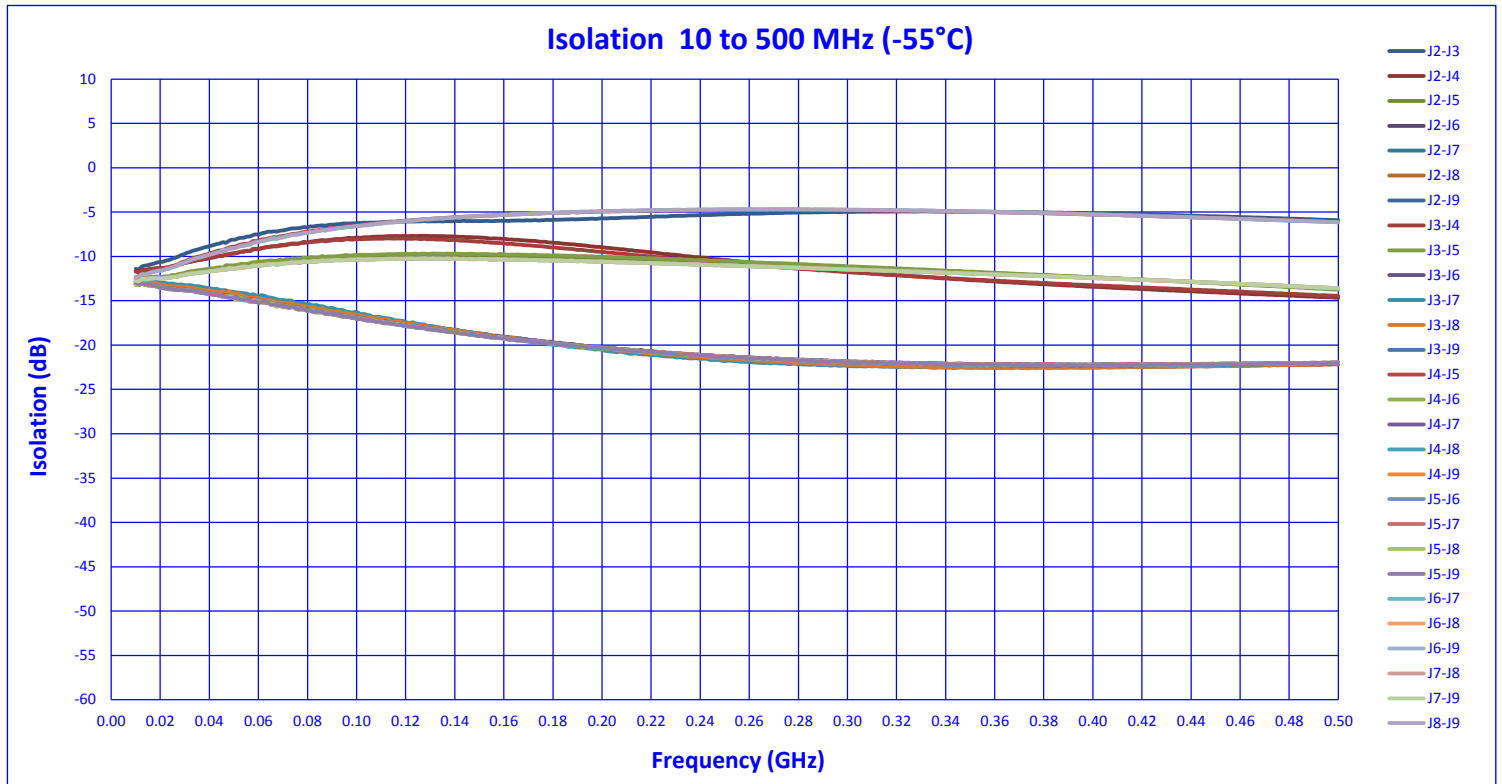


| Insertion Loss Data |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| Frequency (Hz)      | J2     | J3     | J4     | J5     | J6     | J7     | J8     |
| 0.010               | -12.91 | -12.92 | -12.83 | -12.86 | -12.06 | -11.97 | -12.00 |
| 0.020               | -13.02 | -13.03 | -13.02 | -13.02 | -12.24 | -12.20 | -12.20 |
| 0.030               | -12.97 | -12.99 | -12.98 | -13.01 | -12.25 | -12.25 | -12.26 |
| 0.041               | -12.98 | -12.99 | -12.99 | -12.99 | -12.33 | -12.35 | -12.37 |
| 0.050               | -12.98 | -13.01 | -13.10 | -13.16 | -12.51 | -12.52 | -12.47 |
| 0.060               | -12.99 | -12.96 | -13.00 | -12.99 | -12.45 | -12.56 | -12.63 |
| 0.070               | -13.05 | -12.97 | -13.03 | -13.00 | -12.72 | -12.69 | -12.69 |
| 0.080               | -12.99 | -12.98 | -12.95 | -13.00 | -12.80 | -12.82 | -12.84 |
| 0.090               | -13.00 | -12.97 | -13.02 | -12.97 | -12.94 | -12.93 | -12.96 |
| 0.101               | -12.98 | -12.99 | -12.95 | -12.97 | -13.04 | -13.00 | -13.03 |
| 0.110               | -12.89 | -12.97 | -12.91 | -12.96 | -13.09 | -13.09 | -13.11 |
| 0.120               | -12.88 | -12.91 | -12.90 | -12.87 | -13.15 | -13.15 | -13.15 |
| 0.130               | -12.87 | -12.84 | -12.84 | -12.87 | -13.19 | -13.22 | -13.23 |
| 0.140               | -12.83 | -12.79 | -12.81 | -12.80 | -13.21 | -13.20 | -13.28 |
| 0.150               | -12.72 | -12.75 | -12.70 | -12.75 | -13.17 | -13.22 | -13.20 |
| 0.161               | -12.76 | -12.72 | -12.70 | -12.72 | -13.21 | -13.20 | -13.22 |
| 0.170               | -12.67 | -12.68 | -12.65 | -12.64 | -13.12 | -13.14 | -13.16 |
| 0.180               | -12.59 | -12.61 | -12.56 | -12.56 | -13.04 | -13.07 | -13.11 |
| 0.190               | -12.54 | -12.56 | -12.54 | -12.53 | -12.99 | -13.01 | -13.03 |
| 0.200               | -12.48 | -12.48 | -12.44 | -12.44 | -12.88 | -12.86 | -12.92 |
| 0.210               | -12.40 | -12.39 | -12.39 | -12.37 | -12.79 | -12.79 | -12.82 |
| 0.221               | -12.32 | -12.36 | -12.30 | -12.29 | -12.68 | -12.67 | -12.71 |
| 0.231               | -12.23 | -12.24 | -12.22 | -12.20 | -12.55 | -12.53 | -12.57 |
| 0.240               | -12.16 | -12.18 | -12.15 | -12.17 | -12.43 | -12.46 | -12.49 |
| 0.250               | -12.09 | -12.09 | -12.04 | -12.06 | -12.30 | -12.30 | -12.33 |
| 0.260               | -12.00 | -12.03 | -11.98 | -11.98 | -12.20 | -12.20 | -12.23 |
| 0.270               | -11.87 | -11.89 | -11.85 | -11.87 | -12.03 | -12.02 | -12.05 |
| 0.280               | -11.80 | -11.79 | -11.76 | -11.77 | -11.91 | -11.92 | -11.94 |
| 0.291               | -11.72 | -11.71 | -11.67 | -11.70 | -11.81 | -11.79 | -11.81 |
| 0.300               | -11.64 | -11.65 | -11.58 | -11.60 | -11.68 | -11.68 | -11.69 |
| 0.310               | -11.54 | -11.55 | -11.49 | -11.50 | -11.54 | -11.53 | -11.54 |
| 0.320               | -11.44 | -11.45 | -11.40 | -11.42 | -11.44 | -11.42 | -11.43 |
| 0.330               | -11.30 | -11.31 | -11.27 | -11.29 | -11.27 | -11.24 | -11.25 |
| 0.341               | -11.22 | -11.24 | -11.18 | -11.19 | -11.16 | -11.14 | -11.16 |
| 0.351               | -11.12 | -11.13 | -11.08 | -11.09 | -11.04 | -11.03 | -11.03 |
| 0.360               | -11.00 | -11.02 | -10.96 | -10.98 | -10.92 | -10.90 | -10.90 |
| 0.370               | -10.91 | -10.93 | -10.87 | -10.89 | -10.79 | -10.80 | -10.79 |
| 0.380               | -10.79 | -10.82 | -10.75 | -10.77 | -10.67 | -10.66 | -10.65 |
| 0.390               | -10.68 | -10.70 | -10.66 | -10.67 | -10.54 | -10.53 | -10.53 |
| 0.400               | -10.60 | -10.61 | -10.56 | -10.57 | -10.43 | -10.43 | -10.41 |
| 0.411               | -10.49 | -10.50 | -10.46 | -10.47 | -10.32 | -10.31 | -10.32 |
| 0.420               | -10.40 | -10.42 | -10.36 | -10.38 | -10.21 | -10.20 | -10.22 |
| 0.430               | -10.32 | -10.31 | -10.26 | -10.29 | -10.12 | -10.10 | -10.10 |
| 0.440               | -10.22 | -10.24 | -10.17 | -10.20 | -10.02 | -10.01 | -10.01 |
| 0.450               | -10.12 | -10.13 | -10.07 | -10.09 | -9.90  | -9.91  | -9.88  |
| 0.460               | -10.05 | -10.05 | -10.01 | -10.04 | -9.84  | -9.83  | -9.82  |
| 0.471               | -9.96  | -9.96  | -9.93  | -9.94  | -9.75  | -9.74  | -9.73  |
| 0.480               | -9.90  | -9.92  | -9.85  | -9.88  | -9.67  | -9.68  | -9.67  |
| 0.490               | -9.81  | -9.83  | -9.79  | -9.80  | -9.60  | -9.60  | -9.58  |
| 0.500               | 9.74   | -9.76  | -9.72  | -9.73  | -9.53  | -9.53  | -9.53  |





# Typical Characteristics ON APD-8-DC23G-292FF

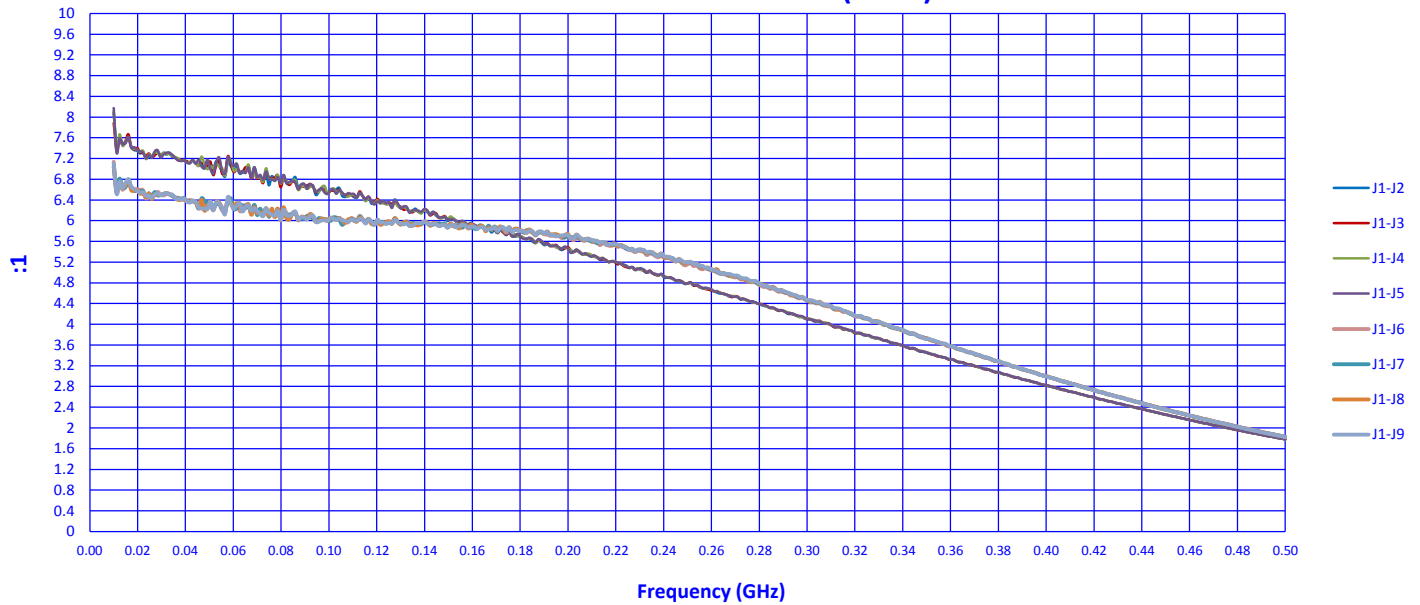






# Typical Characteristics ON APD-8-DC23G-292FF

**VSWR IN 10 to 500 MHz (-55°C)**

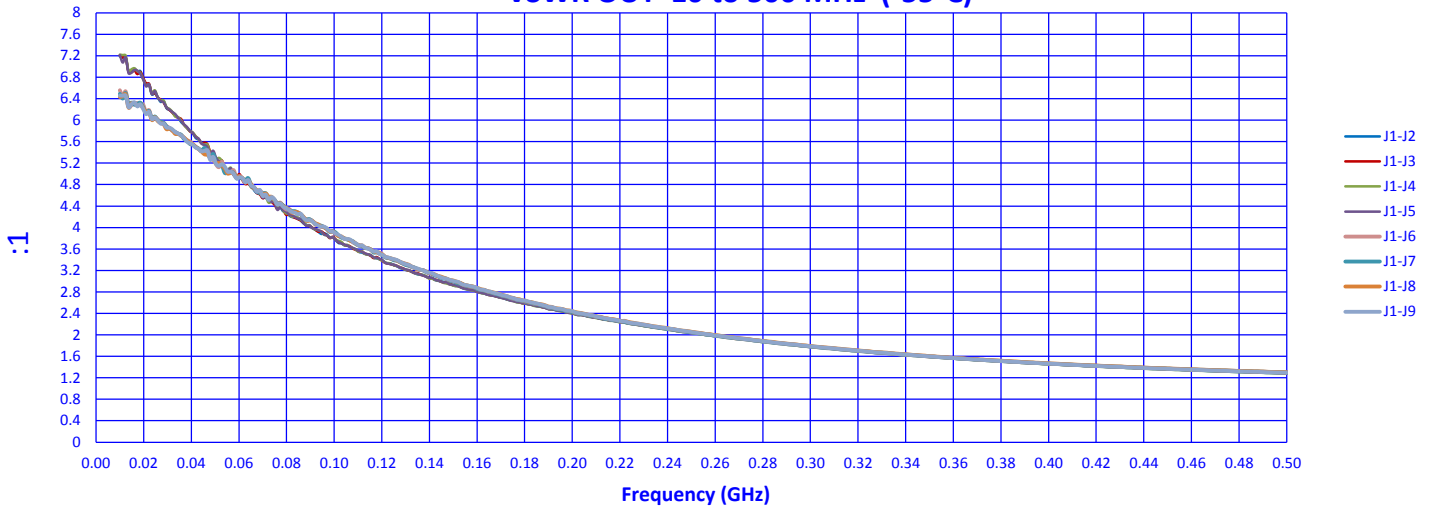


| VSWR IN         |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 8.08  | 7.88  | 8.11  | 8.17  | 7.14  | 7.04  | 7.03  | 7.11  |
| 0.020           | 7.35  | 7.40  | 7.37  | 7.36  | 6.61  | 6.57  | 6.60  | 6.57  |
| 0.030           | 7.24  | 7.28  | 7.27  | 7.22  | 6.50  | 6.49  | 6.50  | 6.49  |
| 0.041           | 7.14  | 7.14  | 7.11  | 7.12  | 6.39  | 6.37  | 6.37  | 6.37  |
| 0.042           | 7.10  | 7.14  | 7.05  | 7.00  | 6.36  | 6.29  | 6.30  | 6.37  |
| 0.050           | 6.96  | 6.94  | 6.96  | 7.05  | 6.22  | 6.22  | 6.28  | 6.23  |
| 0.060           | 6.84  | 6.82  | 6.83  | 6.85  | 6.13  | 6.11  | 6.15  | 6.18  |
| 0.070           | 6.73  | 6.65  | 6.71  | 6.72  | 6.01  | 6.10  | 6.02  | 6.02  |
| 0.080           | 6.68  | 6.66  | 6.67  | 6.71  | 6.07  | 6.03  | 6.07  | 6.06  |
| 0.090           | 6.61  | 6.57  | 6.59  | 6.59  | 6.04  | 6.00  | 6.06  | 6.05  |
| 0.101           | 6.46  | 6.48  | 6.49  | 6.52  | 6.03  | 6.01  | 6.00  | 6.00  |
| 0.110           | 6.38  | 6.42  | 6.40  | 6.37  | 6.01  | 5.99  | 6.00  | 6.02  |
| 0.120           | 6.24  | 6.27  | 6.26  | 6.24  | 5.94  | 5.93  | 5.92  | 5.94  |
| 0.130           | 6.19  | 6.21  | 6.20  | 6.22  | 5.99  | 5.98  | 5.98  | 5.98  |
| 0.140           | 5.99  | 6.03  | 6.03  | 6.03  | 5.88  | 5.87  | 5.87  | 5.87  |
| 0.150           | 5.90  | 5.88  | 5.89  | 5.93  | 5.87  | 5.85  | 5.88  | 5.89  |
| 0.161           | 5.78  | 5.77  | 5.76  | 5.77  | 5.82  | 5.85  | 5.83  | 5.80  |
| 0.170           | 5.70  | 5.68  | 5.70  | 5.68  | 5.80  | 5.81  | 5.82  | 5.81  |
| 0.180           | 5.53  | 5.55  | 5.55  | 5.55  | 5.74  | 5.76  | 5.75  | 5.75  |
| 0.190           | 5.48  | 5.49  | 5.47  | 5.47  | 5.70  | 5.72  | 5.75  | 5.73  |
| 0.200           | 5.33  | 5.32  | 5.34  | 5.30  | 5.60  | 5.60  | 5.62  | 5.63  |
| 0.210           | 5.16  | 5.16  | 5.19  | 5.19  | 5.50  | 5.51  | 5.50  | 5.54  |
| 0.221           | 5.08  | 5.05  | 5.05  | 5.07  | 5.41  | 5.45  | 5.43  | 5.43  |
| 0.231           | 4.90  | 4.92  | 4.92  | 4.92  | 5.28  | 5.29  | 5.29  | 5.31  |
| 0.240           | 4.79  | 4.79  | 4.79  | 4.80  | 5.16  | 5.20  | 5.20  | 5.20  |
| 0.250           | 4.66  | 4.65  | 4.68  | 4.68  | 5.04  | 5.06  | 5.06  | 5.07  |
| 0.260           | 4.53  | 4.54  | 4.54  | 4.53  | 4.91  | 4.93  | 4.94  | 4.94  |
| 0.270           | 4.40  | 4.40  | 4.40  | 4.40  | 4.77  | 4.78  | 4.80  | 4.81  |
| 0.280           | 4.25  | 4.25  | 4.26  | 4.25  | 4.61  | 4.62  | 4.63  | 4.64  |
| 0.291           | 4.10  | 4.10  | 4.11  | 4.11  | 4.45  | 4.46  | 4.46  | 4.47  |
| 0.300           | 3.99  | 3.98  | 3.98  | 3.99  | 4.33  | 4.35  | 4.34  | 4.34  |
| 0.310           | 3.83  | 3.83  | 3.84  | 3.84  | 4.15  | 4.17  | 4.16  | 4.17  |
| 0.320           | 3.72  | 3.73  | 3.72  | 3.74  | 4.03  | 4.04  | 4.06  | 4.05  |
| 0.330           | 3.59  | 3.60  | 3.59  | 3.60  | 3.89  | 3.89  | 3.89  | 3.90  |
| 0.340           | 3.44  | 3.45  | 3.45  | 3.45  | 3.71  | 3.72  | 3.72  | 3.72  |
| 0.351           | 3.33  | 3.32  | 3.32  | 3.32  | 3.57  | 3.58  | 3.58  | 3.58  |
| 0.360           | 3.19  | 3.19  | 3.20  | 3.20  | 3.42  | 3.42  | 3.43  | 3.43  |
| 0.370           | 3.08  | 3.07  | 3.07  | 3.08  | 3.29  | 3.29  | 3.29  | 3.29  |
| 0.380           | 2.93  | 2.94  | 2.94  | 2.94  | 3.13  | 3.13  | 3.14  | 3.13  |
| 0.390           | 2.82  | 2.83  | 2.83  | 2.82  | 3.00  | 3.00  | 3.00  | 3.00  |
| 0.400           | 2.70  | 2.70  | 2.69  | 2.70  | 2.85  | 2.86  | 2.85  | 2.85  |
| 0.411           | 2.59  | 2.59  | 2.59  | 2.59  | 2.73  | 2.73  | 2.72  | 2.73  |
| 0.420           | 2.47  | 2.47  | 2.47  | 2.47  | 2.60  | 2.60  | 2.60  | 2.60  |
| 0.430           | 2.36  | 2.36  | 2.37  | 2.37  | 2.48  | 2.48  | 2.48  | 2.48  |
| 0.440           | 2.25  | 2.26  | 2.26  | 2.26  | 2.36  | 2.35  | 2.36  | 2.36  |
| 0.450           | 2.15  | 2.16  | 2.16  | 2.16  | 2.25  | 2.24  | 2.24  | 2.24  |
| 0.460           | 2.06  | 2.06  | 2.06  | 2.06  | 2.14  | 2.13  | 2.13  | 2.13  |
| 0.471           | 1.96  | 1.95  | 1.96  | 1.96  | 2.02  | 2.02  | 2.02  | 2.02  |
| 0.480           | 1.87  | 1.86  | 1.86  | 1.87  | 1.92  | 1.92  | 1.92  | 1.92  |
| 0.490           | 1.78  | 1.78  | 1.78  | 1.78  | 1.83  | 1.82  | 1.82  | 1.82  |
| 0.500           | 1.78  | 1.78  | 1.78  | 1.78  | 1.83  | 1.82  | 1.82  | 1.82  |



# Typical Characteristics ON APD-8-DC23G-292FF

**VSWR OUT 10 to 500 MHz (-55°C)**

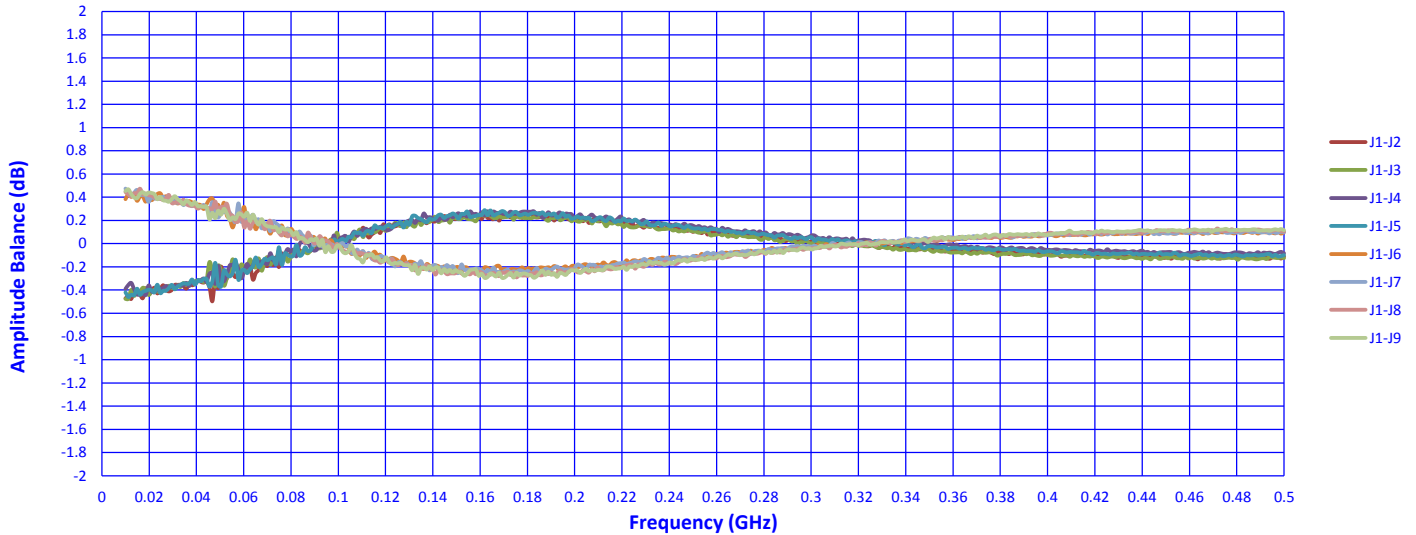


| VSWR OUT        |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 7.19  | 7.21  | 7.22  | 7.21  | 6.56  | 6.49  | 6.43  | 6.46  |
| 0.020           | 6.77  | 6.79  | 6.76  | 6.76  | 6.29  | 6.24  | 6.23  | 6.21  |
| 0.030           | 6.22  | 6.24  | 6.24  | 6.24  | 5.89  | 5.88  | 5.83  | 5.86  |
| 0.041           | 5.76  | 5.76  | 5.77  | 5.76  | 5.56  | 5.54  | 5.55  | 5.54  |
| 0.050           | 5.23  | 5.29  | 5.28  | 5.30  | 5.17  | 5.20  | 5.21  | 5.18  |
| 0.060           | 4.93  | 5.00  | 4.95  | 4.94  | 4.96  | 4.93  | 4.94  | 4.94  |
| 0.070           | 4.56  | 4.55  | 4.57  | 4.56  | 4.64  | 4.64  | 4.61  | 4.59  |
| 0.080           | 4.29  | 4.24  | 4.26  | 4.30  | 4.34  | 4.37  | 4.37  | 4.36  |
| 0.090           | 4.03  | 4.03  | 4.04  | 4.04  | 4.15  | 4.16  | 4.13  | 4.14  |
| 0.101           | 3.77  | 3.78  | 3.78  | 3.77  | 3.89  | 3.91  | 3.88  | 3.89  |
| 0.110           | 3.55  | 3.55  | 3.55  | 3.56  | 3.67  | 3.67  | 3.66  | 3.66  |
| 0.120           | 3.39  | 3.38  | 3.38  | 3.39  | 3.50  | 3.48  | 3.50  | 3.49  |
| 0.130           | 3.21  | 3.21  | 3.21  | 3.22  | 3.33  | 3.30  | 3.32  | 3.32  |
| 0.140           | 3.07  | 3.06  | 3.05  | 3.06  | 3.14  | 3.16  | 3.16  | 3.16  |
| 0.150           | 2.93  | 2.93  | 2.93  | 2.93  | 3.00  | 3.00  | 3.02  | 3.01  |
| 0.161           | 2.80  | 2.80  | 2.79  | 2.79  | 2.85  | 2.85  | 2.87  | 2.86  |
| 0.170           | 2.69  | 2.69  | 2.69  | 2.69  | 2.73  | 2.73  | 2.75  | 2.74  |
| 0.180           | 2.59  | 2.59  | 2.58  | 2.58  | 2.62  | 2.62  | 2.64  | 2.64  |
| 0.190           | 2.48  | 2.48  | 2.48  | 2.48  | 2.51  | 2.51  | 2.53  | 2.52  |
| 0.200           | 2.40  | 2.41  | 2.40  | 2.40  | 2.43  | 2.43  | 2.44  | 2.44  |
| 0.210           | 2.33  | 2.33  | 2.32  | 2.32  | 2.34  | 2.34  | 2.35  | 2.35  |
| 0.221           | 2.24  | 2.24  | 2.23  | 2.23  | 2.25  | 2.25  | 2.26  | 2.26  |
| 0.231           | 2.17  | 2.17  | 2.16  | 2.16  | 2.17  | 2.17  | 2.19  | 2.18  |
| 0.240           | 2.10  | 2.11  | 2.09  | 2.10  | 2.11  | 2.11  | 2.12  | 2.11  |
| 0.242           | 2.09  | 2.10  | 2.09  | 2.09  | 2.10  | 2.10  | 2.11  | 2.11  |
| 0.250           | 2.04  | 2.05  | 2.03  | 2.04  | 2.05  | 2.05  | 2.06  | 2.05  |
| 0.260           | 1.98  | 1.98  | 1.97  | 1.98  | 1.98  | 1.98  | 2.00  | 1.99  |
| 0.270           | 1.93  | 1.93  | 1.92  | 1.92  | 1.93  | 1.93  | 1.94  | 1.94  |
| 0.280           | 1.88  | 1.88  | 1.87  | 1.87  | 1.88  | 1.88  | 1.89  | 1.88  |
| 0.291           | 1.82  | 1.83  | 1.82  | 1.82  | 1.83  | 1.82  | 1.83  | 1.83  |
| 0.300           | 1.78  | 1.78  | 1.77  | 1.78  | 1.78  | 1.78  | 1.79  | 1.79  |
| 0.310           | 1.74  | 1.74  | 1.73  | 1.74  | 1.74  | 1.74  | 1.75  | 1.75  |
| 0.320           | 1.70  | 1.71  | 1.69  | 1.70  | 1.70  | 1.70  | 1.71  | 1.71  |
| 0.330           | 1.66  | 1.67  | 1.66  | 1.66  | 1.67  | 1.67  | 1.67  | 1.67  |
| 0.340           | 1.63  | 1.64  | 1.62  | 1.63  | 1.63  | 1.63  | 1.64  | 1.63  |
| 0.351           | 1.59  | 1.60  | 1.59  | 1.59  | 1.60  | 1.59  | 1.60  | 1.60  |
| 0.360           | 1.56  | 1.57  | 1.56  | 1.56  | 1.57  | 1.57  | 1.57  | 1.57  |
| 0.370           | 1.53  | 1.54  | 1.53  | 1.53  | 1.54  | 1.54  | 1.55  | 1.54  |
| 0.380           | 1.51  | 1.51  | 1.50  | 1.50  | 1.51  | 1.52  | 1.52  | 1.51  |
| 0.390           | 1.48  | 1.49  | 1.48  | 1.48  | 1.49  | 1.49  | 1.49  | 1.49  |
| 0.400           | 1.46  | 1.47  | 1.45  | 1.46  | 1.47  | 1.47  | 1.47  | 1.47  |
| 0.411           | 1.43  | 1.44  | 1.43  | 1.43  | 1.44  | 1.44  | 1.45  | 1.44  |
| 0.420           | 1.41  | 1.42  | 1.41  | 1.41  | 1.42  | 1.42  | 1.43  | 1.42  |
| 0.430           | 1.39  | 1.40  | 1.39  | 1.40  | 1.41  | 1.41  | 1.41  | 1.40  |
| 0.440           | 1.37  | 1.38  | 1.37  | 1.37  | 1.39  | 1.39  | 1.39  | 1.38  |
| 0.450           | 1.36  | 1.36  | 1.35  | 1.36  | 1.37  | 1.37  | 1.37  | 1.37  |
| 0.460           | 1.34  | 1.35  | 1.34  | 1.34  | 1.36  | 1.36  | 1.36  | 1.35  |
| 0.471           | 1.32  | 1.33  | 1.32  | 1.33  | 1.34  | 1.34  | 1.34  | 1.33  |
| 0.480           | 1.31  | 1.32  | 1.31  | 1.31  | 1.33  | 1.33  | 1.33  | 1.32  |
| 0.490           | 1.29  | 1.30  | 1.29  | 1.30  | 1.31  | 1.31  | 1.32  | 1.31  |
| 0.500           | 1.28  | 1.29  | 1.28  | 1.29  | 1.30  | 1.30  | 1.30  | 1.29  |



# Typical Characteristics ON APD-8-DC23G-292FF

Amplitude Balance 10 to 500 MHz (-55°C)

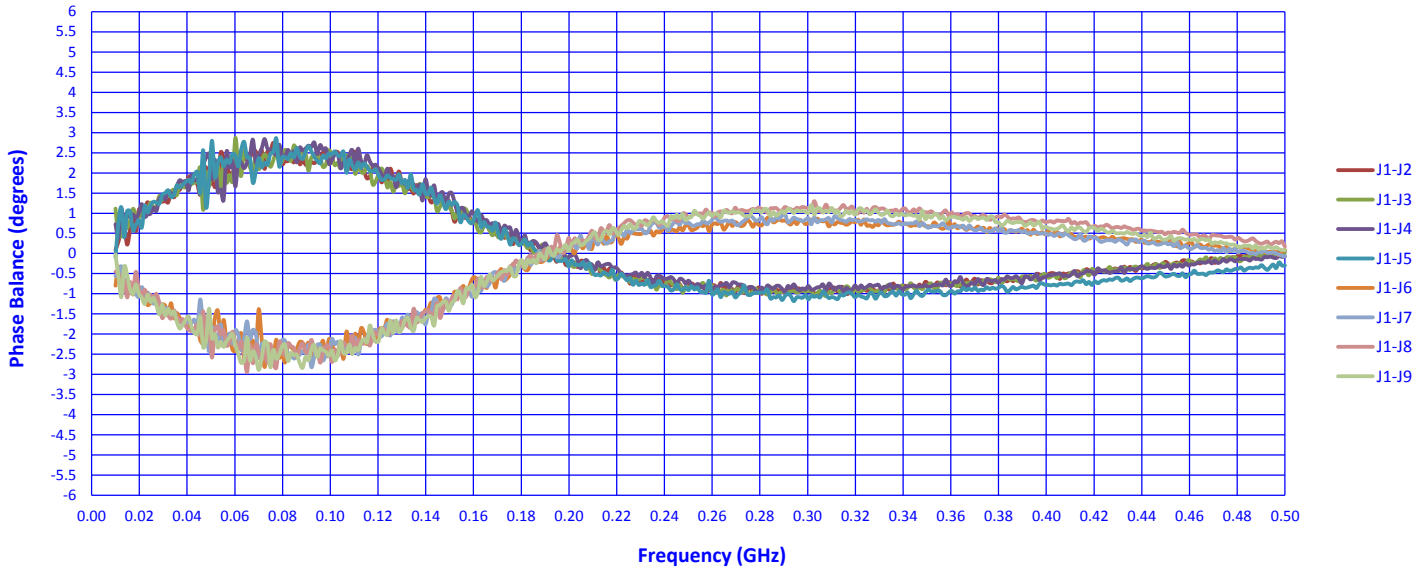


| AMPLITUDE BALANCE |       |       |       |       |       |       |       |       |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz)   | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010             | -0.47 | -0.48 | -0.39 | -0.42 | 0.38  | 0.47  | 0.44  | 0.45  |
| 0.020             | -0.44 | -0.44 | -0.36 | -0.40 | 0.42  | 0.36  | 0.42  | 0.44  |
| 0.030             | -0.40 | -0.38 | -0.37 | -0.36 | 0.39  | 0.38  | 0.35  | 0.38  |
| 0.041             | -0.31 | -0.32 | -0.32 | -0.31 | 0.34  | 0.31  | 0.30  | 0.32  |
| 0.050             | -0.20 | -0.23 | -0.31 | -0.37 | 0.28  | 0.26  | 0.32  | 0.25  |
| 0.060             | -0.23 | -0.20 | -0.24 | -0.23 | 0.31  | 0.20  | 0.14  | 0.23  |
| 0.070             | -0.19 | -0.12 | -0.17 | -0.14 | 0.14  | 0.17  | 0.17  | 0.15  |
| 0.080             | -0.11 | -0.12 | -0.07 | -0.11 | 0.13  | 0.09  | 0.08  | 0.11  |
| 0.090             | 0.01  | -0.02 | -0.06 | 0.00  | 0.06  | -0.01 | 0.01  | 0.03  |
| 0.101             | 0.02  | 0.01  | 0.04  | 0.03  | -0.04 | -0.01 | -0.04 | -0.02 |
| 0.110             | 0.14  | 0.06  | 0.12  | 0.07  | -0.07 | -0.06 | -0.09 | -0.16 |
| 0.120             | 0.14  | 0.11  | 0.12  | 0.15  | -0.13 | -0.13 | -0.14 | -0.12 |
| 0.130             | 0.17  | 0.19  | 0.20  | 0.16  | -0.16 | -0.19 | -0.19 | -0.19 |
| 0.140             | 0.19  | 0.22  | 0.22  | 0.21  | -0.20 | -0.19 | -0.22 | -0.23 |
| 0.150             | 0.21  | 0.22  | 0.25  | 0.24  | -0.20 | -0.24 | -0.25 | -0.23 |
| 0.161             | 0.21  | 0.25  | 0.27  | 0.25  | -0.24 | -0.23 | -0.25 | -0.26 |
| 0.170             | 0.24  | 0.23  | 0.25  | 0.27  | -0.22 | -0.23 | -0.25 | -0.29 |
| 0.180             | 0.25  | 0.22  | 0.27  | 0.25  | -0.21 | -0.23 | -0.28 | -0.27 |
| 0.190             | 0.24  | 0.22  | 0.24  | 0.25  | -0.21 | -0.23 | -0.25 | -0.27 |
| 0.200             | 0.21  | 0.21  | 0.22  | 0.22  | -0.19 | -0.21 | -0.23 | -0.23 |
| 0.210             | 0.19  | 0.19  | 0.22  | 0.22  | -0.18 | -0.21 | -0.21 | -0.23 |
| 0.221             | 0.18  | 0.14  | 0.20  | 0.22  | -0.18 | -0.16 | -0.20 | -0.20 |
| 0.231             | 0.16  | 0.15  | 0.17  | 0.19  | -0.16 | -0.14 | -0.18 | -0.18 |
| 0.240             | 0.15  | 0.13  | 0.17  | 0.15  | -0.12 | -0.14 | -0.17 | -0.16 |
| 0.242             | 0.15  | 0.11  | 0.16  | 0.15  | -0.11 | -0.12 | -0.17 | -0.17 |
| 0.250             | 0.10  | 0.11  | 0.15  | 0.13  | -0.11 | -0.11 | -0.14 | -0.14 |
| 0.260             | 0.10  | 0.08  | 0.13  | 0.12  | -0.09 | -0.09 | -0.13 | -0.12 |
| 0.270             | 0.08  | 0.08  | 0.10  | 0.10  | -0.07 | -0.09 | -0.10 | -0.10 |
| 0.280             | 0.06  | 0.04  | 0.09  | 0.09  | -0.06 | -0.07 | -0.07 | -0.07 |
| 0.291             | 0.03  | 0.04  | 0.08  | 0.05  | -0.06 | -0.04 | -0.06 | -0.05 |
| 0.300             | 0.02  | 0.00  | 0.07  | 0.05  | -0.03 | -0.03 | -0.04 | -0.05 |
| 0.310             | 0.00  | -0.02 | 0.04  | 0.03  | -0.01 | 0.00  | -0.01 | -0.02 |
| 0.320             | -0.01 | -0.02 | 0.03  | 0.01  | -0.01 | 0.01  | 0.00  | -0.01 |
| 0.330             | -0.03 | -0.03 | 0.00  | 0.00  | 0.00  | 0.02  | 0.02  | 0.01  |
| 0.340             | -0.03 | -0.05 | 0.00  | -0.01 | 0.02  | 0.02  | 0.02  | 0.04  |
| 0.351             | -0.05 | -0.06 | -0.01 | -0.02 | 0.03  | 0.04  | 0.04  | 0.03  |
| 0.360             | -0.05 | -0.08 | -0.01 | -0.04 | 0.03  | 0.05  | 0.05  | 0.04  |
| 0.370             | -0.06 | -0.09 | -0.03 | -0.04 | 0.05  | 0.05  | 0.06  | 0.07  |
| 0.380             | -0.07 | -0.09 | -0.03 | -0.05 | 0.05  | 0.06  | 0.07  | 0.06  |
| 0.390             | -0.09 | -0.08 | -0.04 | -0.06 | 0.06  | 0.07  | 0.07  | 0.08  |
| 0.400             | -0.09 | -0.09 | -0.05 | -0.07 | 0.08  | 0.07  | 0.09  | 0.07  |
| 0.411             | -0.10 | -0.10 | -0.07 | -0.07 | 0.08  | 0.09  | 0.08  | 0.10  |
| 0.420             | -0.10 | -0.12 | -0.06 | -0.08 | 0.09  | 0.10  | 0.08  | 0.11  |
| 0.430             | -0.12 | -0.11 | -0.07 | -0.09 | 0.08  | 0.10  | 0.10  | 0.10  |
| 0.440             | -0.12 | -0.13 | -0.06 | -0.09 | 0.09  | 0.10  | 0.10  | 0.12  |
| 0.450             | -0.12 | -0.11 | -0.07 | -0.09 | 0.09  | 0.09  | 0.11  | 0.12  |
| 0.460             | -0.11 | -0.13 | -0.08 | -0.10 | 0.09  | 0.10  | 0.12  | 0.11  |
| 0.471             | -0.12 | -0.12 | -0.08 | -0.10 | 0.09  | 0.10  | 0.11  | 0.12  |
| 0.480             | -0.12 | -0.14 | -0.08 | -0.10 | 0.10  | 0.10  | 0.11  | 0.12  |
| 0.490             | -0.11 | -0.13 | -0.09 | -0.10 | 0.10  | 0.10  | 0.12  | 0.11  |
| 0.500             | -0.11 | -0.13 | -0.08 | -0.10 | 0.10  | 0.10  | 0.11  | 0.12  |



# Typical Characteristics ON APD-8-DC23G-292FF

Phase Balance 10 to 500 MHz (-55°C)

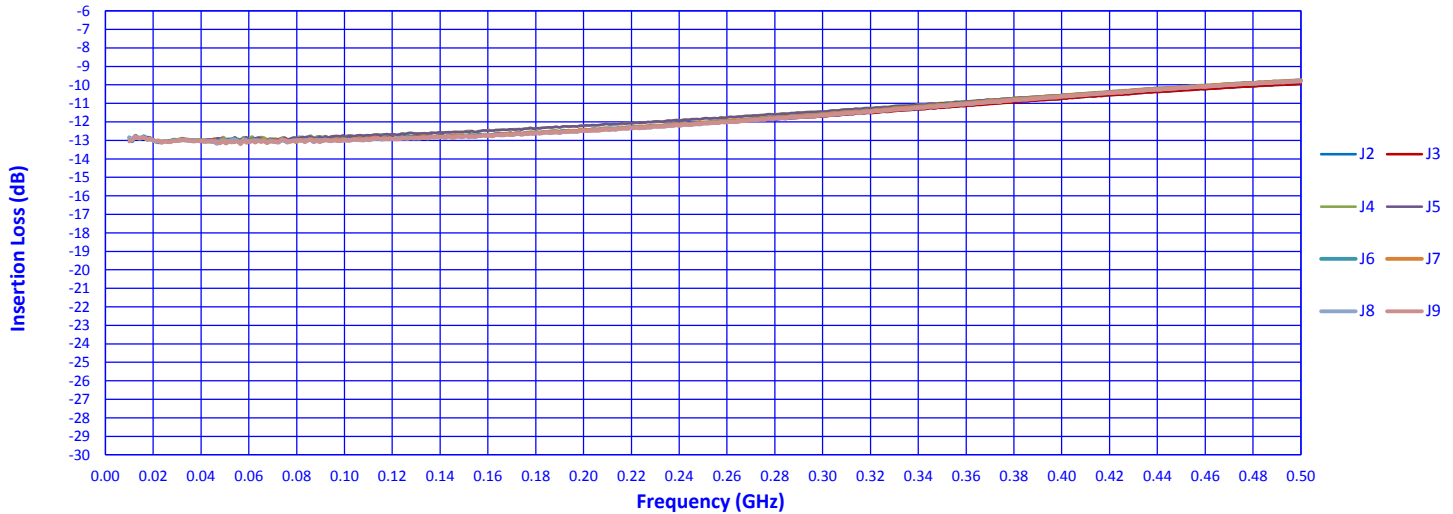


| PHASE BALANCE   |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 0.09  | 1.11  | 0.73  | -0.10 | -0.80 | -0.56 | -0.45 | -0.02 |
| 0.020           | 1.09  | 0.89  | 1.00  | 0.84  | -0.86 | -1.08 | -0.88 | -1.00 |
| 0.030           | 1.29  | 1.33  | 1.43  | 1.46  | -1.27 | -1.35 | -1.60 | -1.27 |
| 0.041           | 1.90  | 1.68  | 1.56  | 1.83  | -1.79 | -1.72 | -1.90 | -1.56 |
| 0.050           | 1.85  | 2.22  | 1.84  | 2.80  | -2.20 | -1.82 | -2.59 | -2.11 |
| 0.060           | 1.84  | 2.87  | 1.66  | 2.43  | -2.42 | -1.90 | -2.20 | -2.27 |
| 0.070           | 2.41  | 2.09  | 2.44  | 2.37  | -1.38 | -2.59 | -2.44 | -2.89 |
| 0.080           | 2.22  | 2.28  | 2.43  | 2.40  | -2.49 | -2.15 | -2.39 | -2.30 |
| 0.090           | 2.21  | 2.49  | 2.60  | 2.52  | -2.34 | -2.47 | -2.44 | -2.56 |
| 0.101           | 2.31  | 2.41  | 2.32  | 2.45  | -2.26 | -2.12 | -2.69 | -2.41 |
| 0.110           | 2.53  | 1.98  | 2.22  | 2.09  | -1.99 | -2.10 | -2.37 | -2.34 |
| 0.120           | 2.06  | 1.97  | 2.11  | 1.95  | -1.89 | -1.99 | -2.03 | -2.17 |
| 0.130           | 1.74  | 1.72  | 1.78  | 1.74  | -1.85 | -1.59 | -1.67 | -1.86 |
| 0.140           | 1.46  | 1.42  | 1.84  | 1.48  | -1.40 | -1.76 | -1.44 | -1.60 |
| 0.150           | 1.31  | 1.15  | 1.48  | 1.29  | -1.26 | -1.22 | -1.33 | -1.42 |
| 0.161           | 0.78  | 0.79  | 0.91  | 0.92  | -0.59 | -0.89 | -0.82 | -1.09 |
| 0.170           | 0.45  | 0.40  | 0.73  | 0.47  | -0.52 | -0.55 | -0.45 | -0.53 |
| 0.180           | 0.31  | 0.25  | 0.25  | 0.25  | -0.32 | -0.30 | -0.29 | -0.16 |
| 0.190           | 0.01  | -0.04 | 0.25  | -0.02 | -0.15 | -0.02 | 0.10  | -0.14 |
| 0.200           | -0.28 | -0.19 | -0.08 | -0.32 | 0.18  | 0.25  | 0.39  | 0.06  |
| 0.210           | -0.34 | -0.51 | -0.28 | -0.42 | 0.12  | 0.40  | 0.57  | 0.46  |
| 0.221           | -0.54 | -0.52 | -0.41 | -0.61 | 0.39  | 0.61  | 0.62  | 0.46  |
| 0.231           | -0.75 | -0.61 | -0.48 | -0.74 | 0.49  | 0.61  | 0.69  | 0.79  |
| 0.240           | -0.78 | -0.79 | -0.63 | -0.81 | 0.68  | 0.69  | 0.91  | 0.73  |
| 0.242           | -0.66 | -0.62 | -0.62 | -0.83 | 0.55  | 0.57  | 0.92  | 0.69  |
| 0.250           | -0.80 | -0.85 | -0.67 | -0.91 | 0.69  | 0.77  | 0.89  | 0.90  |
| 0.260           | -0.79 | -0.79 | -0.89 | -1.02 | 0.70  | 0.83  | 1.02  | 0.94  |
| 0.270           | -0.95 | -0.90 | -0.72 | -1.09 | 0.78  | 0.73  | 1.14  | 1.01  |
| 0.280           | -0.84 | -0.98 | -0.96 | -0.97 | 0.71  | 0.83  | 1.14  | 1.07  |
| 0.291           | -0.96 | -0.98 | -0.95 | -1.06 | 0.82  | 0.98  | 1.15  | 1.00  |
| 0.300           | -0.89 | -0.94 | -0.81 | -1.14 | 0.76  | 0.88  | 1.12  | 1.01  |
| 0.310           | -0.85 | -0.98 | -0.82 | -1.08 | 0.76  | 0.76  | 1.09  | 1.13  |
| 0.320           | -0.86 | -0.86 | -0.79 | -1.08 | 0.77  | 0.84  | 1.03  | 0.96  |
| 0.330           | -0.92 | -0.93 | -0.78 | -1.01 | 0.70  | 0.83  | 1.10  | 1.01  |
| 0.340           | -0.82 | -0.79 | -0.91 | -1.01 | 0.73  | 0.72  | 1.09  | 0.99  |
| 0.351           | -0.75 | -0.78 | -0.84 | -0.90 | 0.68  | 0.64  | 1.01  | 0.94  |
| 0.360           | -0.77 | -0.74 | -0.80 | -0.93 | 0.65  | 0.66  | 1.02  | 0.90  |
| 0.370           | -0.62 | -0.79 | -0.76 | -0.85 | 0.62  | 0.57  | 0.93  | 0.90  |
| 0.380           | -0.70 | -0.60 | -0.73 | -0.85 | 0.62  | 0.56  | 0.92  | 0.77  |
| 0.390           | -0.59 | -0.58 | -0.74 | -0.83 | 0.62  | 0.53  | 0.81  | 0.78  |
| 0.400           | -0.56 | -0.51 | -0.59 | -0.78 | 0.48  | 0.50  | 0.78  | 0.67  |
| 0.411           | -0.51 | -0.47 | -0.52 | -0.78 | 0.48  | 0.41  | 0.75  | 0.65  |
| 0.420           | -0.46 | -0.45 | -0.52 | -0.69 | 0.41  | 0.40  | 0.69  | 0.62  |
| 0.430           | -0.40 | -0.43 | -0.44 | -0.60 | 0.36  | 0.35  | 0.66  | 0.50  |
| 0.440           | -0.37 | -0.34 | -0.31 | -0.62 | 0.34  | 0.30  | 0.57  | 0.43  |
| 0.450           | -0.21 | -0.27 | -0.33 | -0.57 | 0.27  | 0.28  | 0.48  | 0.35  |
| 0.460           | -0.24 | -0.16 | -0.30 | -0.52 | 0.25  | 0.14  | 0.48  | 0.36  |
| 0.471           | -0.23 | -0.12 | -0.17 | -0.46 | 0.20  | 0.06  | 0.45  | 0.28  |
| 0.480           | -0.05 | -0.18 | -0.14 | -0.38 | 0.17  | 0.02  | 0.39  | 0.17  |
| 0.490           | -0.03 | -0.04 | -0.15 | -0.29 | 0.09  | 0.03  | 0.24  | 0.15  |
| 0.500           | 0.07  | 0.02  | -0.07 | -0.30 | 0.09  | -0.07 | 0.17  | 0.09  |



# Typical Characteristics ON APD-8-DC23G-292FF

**Insertion Loss 10 to 500 MHz (+85°C)**

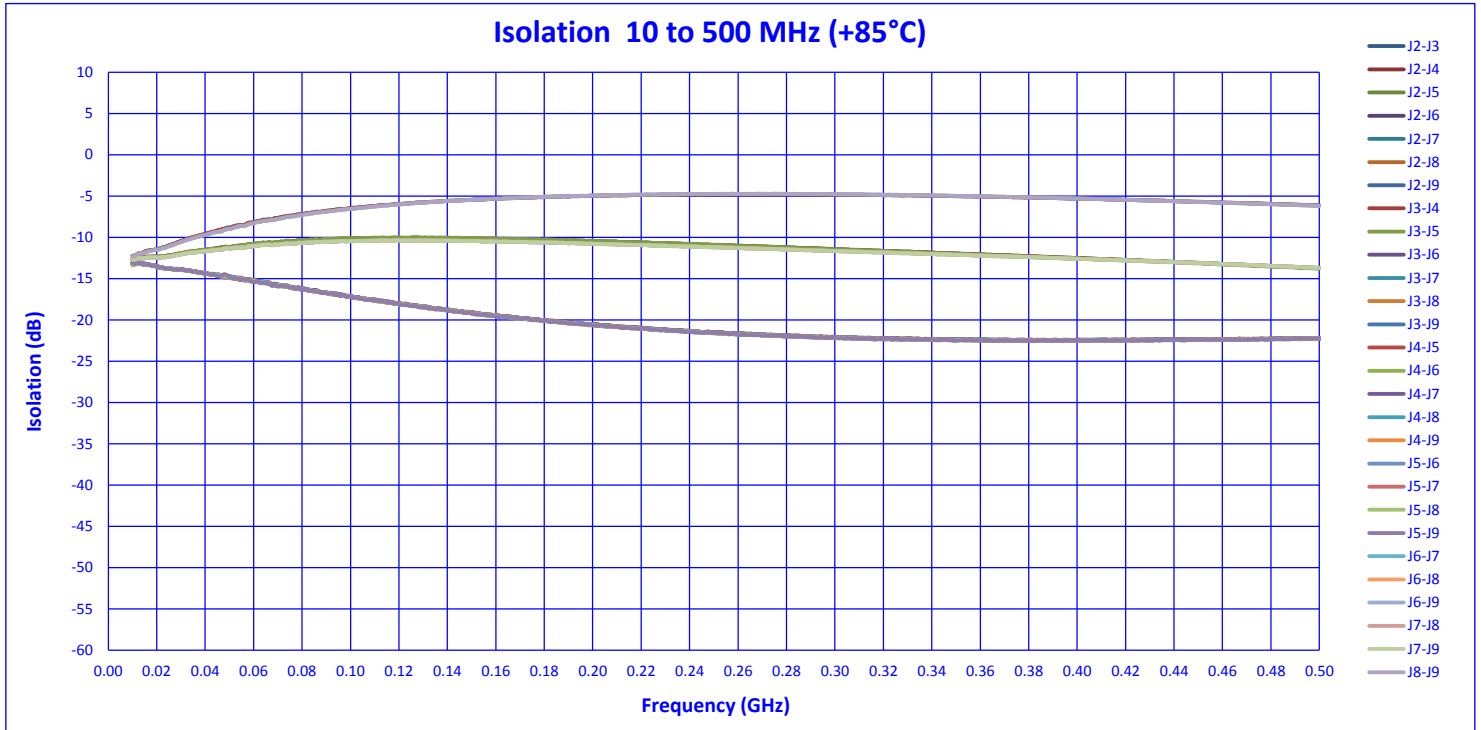


| Insertion Loss Data |        |        |        |        |        |        |        |
|---------------------|--------|--------|--------|--------|--------|--------|--------|
| Frequency (Hz)      | J2     | J3     | J4     | J5     | J6     | J7     | J8     |
| 0.010               | -12.88 | -12.83 | -13.01 | -12.98 | -12.83 | -12.95 | -12.86 |
| 0.020               | -13.02 | -13.04 | -12.99 | -13.00 | -13.05 | -13.05 | -13.07 |
| 0.030               | -12.98 | -12.93 | -12.92 | -12.97 | -13.01 | -13.02 | -12.97 |
| 0.041               | -13.00 | -13.00 | -12.95 | -12.99 | -13.04 | -13.06 | -13.03 |
| 0.050               | -13.02 | -13.04 | -12.92 | -12.98 | -13.15 | -13.06 | -13.02 |
| 0.060               | -12.97 | -13.03 | -12.90 | -13.00 | -13.05 | -13.04 | -13.10 |
| 0.070               | -13.02 | -12.96 | -12.90 | -12.96 | -13.00 | -13.05 | -13.08 |
| 0.080               | -12.94 | -12.92 | -12.80 | -12.89 | -12.98 | -12.98 | -13.01 |
| 0.090               | -12.95 | -12.92 | -12.81 | -12.88 | -13.03 | -12.99 | -13.00 |
| 0.101               | -12.93 | -12.91 | -12.75 | -12.81 | -12.96 | -12.96 | -13.02 |
| 0.110               | -12.86 | -12.84 | -12.73 | -12.73 | -12.92 | -12.91 | -12.97 |
| 0.120               | -12.81 | -12.82 | -12.67 | -12.66 | -12.90 | -12.92 | -12.92 |
| 0.130               | -12.79 | -12.82 | -12.62 | -12.64 | -12.85 | -12.85 | -12.90 |
| 0.140               | -12.76 | -12.74 | -12.56 | -12.60 | -12.78 | -12.81 | -12.84 |
| 0.150               | -12.72 | -12.74 | -12.51 | -12.52 | -12.75 | -12.74 | -12.75 |
| 0.161               | -12.68 | -12.67 | -12.44 | -12.47 | -12.73 | -12.70 | -12.74 |
| 0.170               | -12.63 | -12.63 | -12.40 | -12.41 | -12.64 | -12.67 | -12.72 |
| 0.180               | -12.56 | -12.55 | -12.34 | -12.33 | -12.55 | -12.58 | -12.61 |
| 0.190               | -12.52 | -12.52 | -12.30 | -12.30 | -12.53 | -12.55 | -12.59 |
| 0.200               | -12.42 | -12.46 | -12.18 | -12.19 | -12.43 | -12.42 | -12.48 |
| 0.210               | -12.39 | -12.42 | -12.13 | -12.14 | -12.35 | -12.38 | -12.44 |
| 0.221               | -12.32 | -12.34 | -12.07 | -12.08 | -12.28 | -12.29 | -12.33 |
| 0.231               | -12.27 | -12.24 | -11.97 | -11.98 | -12.21 | -12.21 | -12.25 |
| 0.240               | -12.19 | -12.19 | -11.91 | -11.93 | -12.16 | -12.13 | -12.19 |
| 0.250               | -12.09 | -12.10 | -11.81 | -11.82 | -12.04 | -12.04 | -12.09 |
| 0.260               | -12.04 | -12.04 | -11.78 | -11.76 | -11.97 | -11.97 | -12.02 |
| 0.270               | -11.93 | -11.94 | -11.66 | -11.66 | -11.84 | -11.86 | -11.91 |
| 0.280               | -11.86 | -11.85 | -11.57 | -11.60 | -11.78 | -11.76 | -11.80 |
| 0.291               | -11.77 | -11.78 | -11.50 | -11.50 | -11.69 | -11.67 | -11.74 |
| 0.300               | -11.68 | -11.71 | -11.44 | -11.43 | -11.58 | -11.59 | -11.65 |
| 0.310               | -11.59 | -11.59 | -11.34 | -11.33 | -11.47 | -11.48 | -11.52 |
| 0.320               | -11.51 | -11.52 | -11.26 | -11.25 | -11.41 | -11.42 | -11.45 |
| 0.330               | -11.38 | -11.41 | -11.13 | -11.14 | -11.27 | -11.26 | -11.33 |
| 0.341               | -11.31 | -11.32 | -11.06 | -11.07 | -11.18 | -11.18 | -11.24 |
| 0.351               | -11.23 | -11.23 | -10.99 | -10.99 | -11.08 | -11.08 | -11.15 |
| 0.360               | -11.12 | -11.12 | -10.89 | -10.89 | -10.98 | -10.97 | -11.02 |
| 0.370               | -11.02 | -11.03 | -10.81 | -10.81 | -10.87 | -10.87 | -10.94 |
| 0.380               | -10.91 | -10.93 | -10.70 | -10.71 | -10.76 | -10.77 | -10.81 |
| 0.390               | -10.81 | -10.83 | -10.62 | -10.62 | -10.67 | -10.67 | -10.72 |
| 0.400               | -10.72 | -10.73 | -10.54 | -10.54 | -10.56 | -10.58 | -10.62 |
| 0.411               | -10.63 | -10.64 | -10.47 | -10.45 | -10.48 | -10.48 | -10.53 |
| 0.420               | -10.55 | -10.56 | -10.38 | -10.38 | -10.38 | -10.39 | -10.43 |
| 0.430               | -10.47 | -10.47 | -10.30 | -10.30 | -10.28 | -10.30 | -10.34 |
| 0.440               | -10.38 | -10.39 | -10.22 | -10.22 | -10.19 | -10.21 | -10.25 |
| 0.450               | -10.29 | -10.29 | -10.14 | -10.14 | -10.10 | -10.11 | -10.16 |
| 0.460               | -10.21 | -10.23 | -10.08 | -10.09 | -10.04 | -10.04 | -10.09 |
| 0.471               | -10.14 | -10.15 | -10.01 | -10.01 | -9.96  | -9.96  | -10.00 |
| 0.480               | -10.07 | -10.08 | -9.96  | -9.96  | -9.91  | -9.89  | -9.92  |
| 0.490               | -10.00 | -10.01 | -9.89  | -9.90  | -9.83  | -9.82  | -9.86  |
| 0.500               | 9.94   | -9.95  | -9.85  | -9.85  | -9.76  | -9.75  | -9.80  |



# Typical Characteristics ON APD-8-DC23G-292FF

**Isolation 10 to 500 MHz (+85°C)**

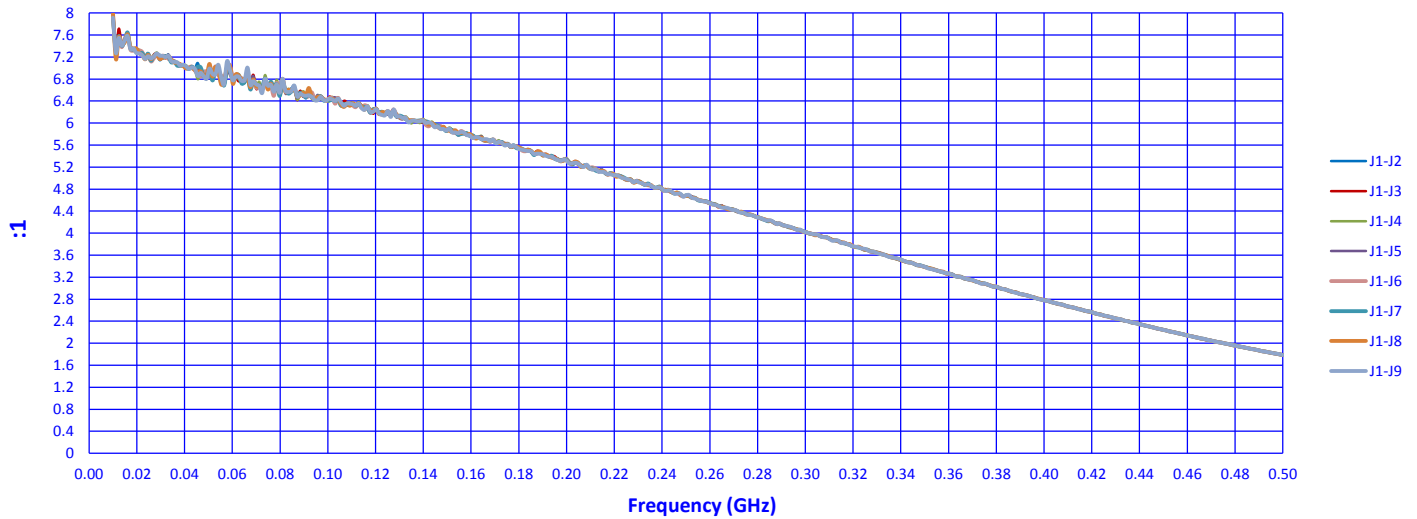


| Isolation      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |       |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Frequency (Hz) | J2-J3  | J2-J4  | J2-J5  | J2-J6  | J2-J7  | J2-J8  | J2-J9  | J3-J4  | J3-J5  | J3-J6  | J3-J7  | J3-J8  | J3-J9  | J4-J5  | J4-J6  | J4-J7  | J4-J8  | J4-J9  | J5-J6  | J5-J7  | J5-J8  | J5-J9  | J6-J7  | J6-J8  | J6-J9  | J7-J8  | J7-J9  | J8-J9  |        |       |
| 0.00           | -12.23 | -12.78 | -12.67 | -13.19 | -13.17 | -13.14 | -13.20 | -12.61 | -12.64 | -13.18 | -13.20 | -13.03 | -13.15 | -12.22 | -13.38 | -13.05 | -13.11 | -13.17 | -13.13 | -13.11 | -13.19 | -13.07 | -12.25 | -12.67 | -12.72 | -12.62 | -12.71 | -12.35 |        |       |
| 0.020          | -11.45 | -12.37 | -12.34 | -13.55 | -13.50 | -13.54 | -13.55 | -12.30 | -12.32 | -13.45 | -13.40 | -13.46 | -13.49 | -11.45 | -13.47 | -13.47 | -13.55 | -13.45 | -13.52 | -13.52 | -13.62 | -13.50 | -11.46 | -12.38 | -12.45 | -12.46 | -12.45 | -11.51 |        |       |
| 0.030          | -10.49 | -11.95 | -11.94 | -13.93 | -13.91 | -13.91 | -13.90 | -11.96 | -11.92 | -13.86 | -13.86 | -13.90 | -13.88 | -10.49 | -13.88 | -13.91 | -13.90 | -13.92 | -13.89 | -13.93 | -13.93 | -13.92 | -10.60 | -12.08 | -12.06 | -12.07 | -12.10 | -10.61 |        |       |
| 0.041          | -9.50  | -11.51 | -11.48 | -14.34 | -14.38 | -14.40 | -14.42 | -11.49 | -11.44 | -14.36 | -14.38 | -14.39 | -14.36 | -9.51  | -14.36 | -14.39 | -14.40 | -14.41 | -14.40 | -14.39 | -14.38 | -14.39 | -9.66  | -11.64 | -11.66 | -11.67 | -11.66 | -9.67  |        |       |
| 0.050          | -8.80  | -11.22 | -11.23 | -14.90 | -14.90 | -14.98 | -14.96 | -11.20 | -11.18 | -14.83 | -14.81 | -14.80 | -14.82 | -8.82  | -14.82 | -14.86 | -14.93 | -14.81 | -14.68 | -14.95 | -14.96 | -14.90 | -9.00  | -11.36 | -11.34 | -11.41 | -11.40 | -9.96  |        |       |
| 0.060          | -8.15  | -10.77 | -10.78 | -15.27 | -15.25 | -15.25 | -15.21 | -10.83 | -10.76 | -15.27 | -15.27 | -15.17 | -15.34 | -8.15  | -15.29 | -15.35 | -15.27 | -15.25 | -15.30 | -15.29 | -15.25 | -15.39 | -8.25  | -11.09 | -11.00 | -11.07 | -11.08 | -8.32  |        |       |
| 0.070          | -7.66  | -10.61 | -10.66 | -15.77 | -15.69 | -15.78 | -15.84 | -10.61 | -10.57 | -15.70 | -15.71 | -15.84 | -15.70 | -7.63  | -15.88 | -15.83 | -15.65 | -15.87 | -15.81 | -15.83 | -15.79 | -15.97 | -7.77  | -10.83 | -10.83 | -10.92 | -10.91 | -7.78  |        |       |
| 0.080          | -7.22  | -10.42 | -10.38 | -16.16 | -16.26 | -16.36 | -16.36 | -10.42 | -10.35 | -16.24 | -16.21 | -16.23 | -16.29 | -7.21  | -16.26 | -16.28 | -16.36 | -16.25 | -16.21 | -16.36 | -16.32 | -16.38 | -7.33  | -10.72 | -10.65 | -10.67 | -10.69 | -7.35  |        |       |
| 0.090          | -6.79  | -10.23 | -10.22 | -16.68 | -16.64 | -16.74 | -16.74 | -10.25 | -10.17 | -16.64 | -16.65 | -16.70 | -16.66 | -6.80  | -16.69 | -16.66 | -16.69 | -16.69 | -16.71 | -16.65 | -16.73 | -16.75 | -6.88  | -10.53 | -10.46 | -10.59 | -10.54 | -6.92  |        |       |
| 0.101          | -6.41  | -10.15 | -10.12 | -17.18 | -17.21 | -17.29 | -17.18 | -10.17 | -10.11 | -17.13 | -17.23 | -17.25 | -17.16 | -6.42  | -17.17 | -17.22 | -17.27 | -17.21 | -17.18 | -17.24 | -17.25 | -17.26 | -6.86  | -10.44 | -10.49 | -10.43 | -10.46 | -6.82  |        |       |
| 0.110          | -6.20  | -10.10 | -10.08 | -17.67 | -17.63 | -17.65 | -17.65 | -10.12 | -10.04 | -17.63 | -17.54 | -17.69 | -17.60 | -6.19  | -17.64 | -17.63 | -17.68 | -17.63 | -17.67 | -17.59 | -17.75 | -17.66 | -6.25  | -10.39 | -10.40 | -10.43 | -10.39 | -6.24  |        |       |
| 0.120          | -5.96  | -10.06 | -10.01 | -17.95 | -17.96 | -17.98 | -18.12 | -10.08 | -10.00 | -17.99 | -18.07 | -18.02 | -18.05 | -5.98  | -17.97 | -18.04 | -18.09 | -18.06 | -18.09 | -18.03 | -18.09 | -18.14 | -5.99  | -10.38 | -10.37 | -10.36 | -10.37 | -6.00  |        |       |
| 0.130          | -5.77  | -10.09 | -10.05 | -18.41 | -18.42 | -18.46 | -18.44 | -10.06 | -10.02 | -18.39 | -18.36 | -18.42 | -18.43 | -5.77  | -18.44 | -18.41 | -18.44 | -18.48 | -18.46 | -18.42 | -18.43 | -18.46 | -5.81  | -10.38 | -10.37 | -10.38 | -10.38 | -5.81  |        |       |
| 0.140          | -5.58  | -10.07 | -10.07 | -18.72 | -18.75 | -18.79 | -18.84 | -10.09 | -10.02 | -18.71 | -18.77 | -18.81 | -18.80 | -5.59  | -18.75 | -18.82 | -18.82 | -18.81 | -18.76 | -18.80 | -18.84 | -18.80 | -5.59  | -10.41 | -10.41 | -10.42 | -10.40 | -5.61  |        |       |
| 0.150          | -5.47  | -10.12 | -10.10 | -19.17 | -19.10 | -19.15 | -19.14 | -10.11 | -10.05 | -19.10 | -19.14 | -19.17 | -19.19 | -5.46  | -19.09 | -19.12 | -19.19 | -19.13 | -19.11 | -19.16 | -19.19 | -19.17 | -5.45  | -10.45 | -10.42 | -10.45 | -10.45 | -5.48  |        |       |
| 0.161          | -5.29  | -10.18 | -10.16 | -19.54 | -19.45 | -19.51 | -19.50 | -10.18 | -10.16 | -19.42 | -19.48 | -19.45 | -19.51 | -5.30  | -19.45 | -19.42 | -19.51 | -19.52 | -19.47 | -19.54 | -19.61 | -5.30  | -10.50 | -10.49 | -10.50 | -10.51 | -5.32  |        |        |       |
| 0.170          | -5.19  | -10.22 | -10.22 | -19.80 | -19.83 | -19.84 | -19.81 | -10.25 | -10.23 | -19.82 | -19.86 | -19.82 | -19.83 | -5.21  | -19.88 | -19.81 | -19.81 | -19.84 | -19.80 | -19.87 | -19.84 | -19.92 | -5.19  | -10.53 | -10.57 | -10.56 | -10.55 | -5.19  |        |       |
| 0.180          | -5.08  | -10.27 | -10.28 | -20.04 | -20.02 | -20.02 | -20.07 | -10.29 | -10.26 | -20.02 | -19.95 | -20.07 | -20.06 | -5.10  | -20.08 | -20.01 | -20.10 | -20.10 | -20.04 | -20.07 | -20.10 | -5.07  | -10.62 | -10.60 | -10.59 | -10.62 | -5.08  |        |        |       |
| 0.190          | -5.04  | -10.40 | -10.37 | -20.31 | -20.36 | -20.37 | -20.40 | -10.41 | -10.37 | -20.33 | -20.32 | -20.33 | -20.33 | -5.07  | -20.36 | -20.34 | -20.36 | -20.40 | -20.38 | -20.31 | -20.45 | -5.02  | -10.72 | -10.71 | -10.72 | -10.71 | -5.04  |        |        |       |
| 0.200          | -4.95  | -10.47 | -10.45 | -20.50 | -20.54 | -20.56 | -20.61 | -10.47 | -10.45 | -20.59 | -20.60 | -20.65 | -20.63 | -4.97  | -20.63 | -20.58 | -20.65 | -20.62 | -20.61 | -20.60 | -20.63 | -20.71 | -4.92  | -10.80 | -10.79 | -10.78 | -10.78 | -4.93  |        |       |
| 0.210          | -4.90  | -10.51 | -10.52 | -20.76 | -20.75 | -20.77 | -20.83 | -10.55 | -10.50 | -20.76 | -20.79 | -20.80 | -20.82 | -4.91  | -20.71 | -20.75 | -20.85 | -20.84 | -20.84 | -20.70 | -20.82 | -20.82 | -4.97  | -10.84 | -10.84 | -10.86 | -10.85 | -4.87  |        |       |
| 0.221          | -4.87  | -10.64 | -10.64 | -20.94 | -21.00 | -21.03 | -21.08 | -10.66 | -10.62 | -21.04 | -20.97 | -21.04 | -21.06 | -4.88  | -21.02 | -21.01 | -21.07 | -21.09 | -21.08 | -21.03 | -21.07 | -21.03 | -4.84  | -10.94 | -10.94 | -10.95 | -10.95 | -4.83  |        |       |
| 0.231          | -4.83  | -10.72 | -10.70 | -21.15 | -21.18 | -21.22 | -21.25 | -10.74 | -10.72 | -21.24 | -21.14 | -21.27 | -21.24 | -4.83  | -21.20 | -21.24 | -21.23 | -21.22 | -21.18 | -21.24 | -21.24 | -4.79  | -11.04 | -11.02 | -11.02 | -11.02 | -4.79  |        |        |       |
| 0.240          | -4.81  | -10.81 | -10.82 | -21.34 | -21.35 | -21.45 | -21.41 | -10.86 | -10.81 | -21.41 | -21.35 | -21.40 | -21.47 | -4.81  | -21.37 | -21.40 | -21.43 | -21.46 | -21.43 | -21.39 | -21.47 | -21.48 | -4.76  | -11.12 | -11.13 | -11.12 | -11.12 | -4.76  |        |       |
| 0.250          | -4.78  | -10.92 | -10.90 | -21.48 | -21.56 | -21.49 | -21.56 | -10.92 | -10.90 | -21.52 | -21.50 | -21.56 | -21.60 | -4.80  | -21.53 | -21.47 | -21.60 | -21.58 | -21.50 | -21.59 | -21.59 | -21.56 | -4.74  | -11.19 | -11.20 | -11.19 | -11.18 | -4.74  |        |       |
| 0.260          | -4.79  | -11.02 | -11.02 | -21.66 | -21.69 | -21.76 | -21.71 | -11.05 | -11.04 | -21.62 | -21.67 | -21.72 | -21.76 | -4.79  | -21.72 | -21.65 | -21.74 | -21.76 | -21.64 | -21.71 | -21.77 | -21.78 | -4.74  | -11.29 | -11.29 | -11.30 | -11.28 | -4.73  |        |       |
| 0.270          | -4.78  | -11.13 | -11.11 | -21.74 | -21.82 | -21.80 | -21.86 | -11.12 | -11.11 | -21.81 | -21.82 | -21.84 | -21.88 | -4.78  | -21.82 | -21.86 | -21.82 | -21.88 | -21.81 | -21.86 | -21.82 | -21.80 | -21.81 | -21.86 | -4.73  | -11.38 | -11.38 | -11.37 | -11.38 | -4.73 |
| 0.280          | -4.78  | -11.20 | -11.21 | -21.91 | -21.87 | -21.93 | -21.93 | -11.24 | -11.23 | -21.87 | -21.89 | -22.02 | -21.98 | -4.79  | -21.88 | -21.92 | -21.99 | -21.96 | -21.91 | -21.92 | -21.96 | -22.00 | -4.73  | -11.47 | -11.46 | -11.46 | -11.47 | -4.73  |        |       |
| 0.291          | -4.82  | -11.33 | -11.32 | -21.94 | -21.96 | -22.09 | -22.04 | -11.35 | -11.35 | -22.05 | -21.99 | -22.06 | -22.12 | -4.80  | -22.00 | -22.08 | -22.08 | -22.11 | -22.01 | -22.05 | -22.07 | -22.09 | -4.75  | -11.57 | -11.57 | -11.56 | -11.56 | -4.76  |        |       |
| 0.300          | -4.83  | -11.42 | -11.42 | -22.05 | -22.07 | -22.17 | -22.14 | -11.45 | -11.46 | -22.11 | -22.15 | -22.16 | -22.18 | -4.83  | -22.08 | -22.11 | -22.15 | -22.18 | -22.10 | -22.13 | -22.18 | -22.19 | -4.77  | -11.67 | -11.63 | -11.66 | -11.66 | -4.78  |        |       |
| 0.310          | -4.85  | -11.52 | -11.52 | -22.16 | -22.17 | -22.22 | -22.18 | -11.54 | -11.55 | -22.16 | -22.19 | -22.24 | -22.22 | -4.83  | -22.19 | -22.18 | -22.20 | -22.23 | -22.24 | -22.29 | -22.27 | -22.29 | -4.79  | -11.74 | -11.71 | -11.73 | -11.74 | -4.80  |        |       |
| 0.320          | -4.89  | -11.65 | -11.65 | -22.25 | -22.22 | -22.34 | -22.26 | -11.68 | -11.68 | -22.27 | -22.25 | -22.29 | -22.35 | -4.90  | -22.23 | -22.25 | -22.30 | -22.29 | -22.26 | -22.24 | -22.30 | -22.27 | -4.84  | -11.84 | -11.83 | -11.85 | -11.84 | -4.86  |        |       |
| 0.330          | -4.91  | -11.73 | -11.72 | -22.25 | -22.25 | -22.32 | -22.31 | -11.74 | -11.75 | -22.30 | -22.31 | -22.35 | -22.34 | -4.90  | -22.28 | -22.25 | -22.32 | -22.34 | -22.28 | -22.26 | -22.35 | -22.34 | -4.86  | -11.91 | -11.89 | -11.91 | -11.92 | -4.86  |        |       |
| 0.341          | -4.95  | -11.85 | -11.83 | -22.32 | -22.33 | -22.36 | -22.34 | -11.87 | -11.88 | -22.36 | -22.38 | -22.40 | -22.41 | -4.96  | -22.30 | -22.31 | -22.40 | -22.39 | -22.29 | -22.39 | -22.43 | -22.41 | -4.91  | -12.01 | -12.00 | -12.01 | -12.01 | -4.91  |        |       |
| 0.351          | -5.02  | -11.95 | -11.94 | -22.34 | -22.34 | -22.42 | -22.39 | -11.99 | -11.99 | -22.40 | -22.42 | -22.41 | -22.45 | -5.01  | -22.40 | -22.41 | -22.46 | -22.42 | -22.41 | -22.42 | -22.42 | -22.50 | -4.98  | -12.11 | -12.11 | -12.12 | -12.11 | -4.98  |        |       |
| 0.360          | -5.06  | -12.07 | -12.05 | -22.35 | -22.36 | -22.46 | -22.44 | -12.09 | -12.12 | -22.42 | -22.41 | -22.46 | -22.48 | -5.06  | -22.39 | -22.42 | -22.45 | -22.44 | -22.43 | -22.42 | -22.45 | -22.48 | -5.03  | -12.21 | -12.19 | -12.20 | -12.21 | -5.04  |        |       |
| 0.370          | -5.12  | -12.17 | -12.16 | -22.35 | -22.40 | -22.42 | -22.43 | -12.18 | -12.20 | -22.42 | -22.43 | -22.50 | -22.49 | -5.11  | -22.42 | -22.45 | -22.46 | -22.44 | -22.44 | -22.45 | -22.48 | -22.55 | -5.08  | -12.28 | -12.28 | -12.29 | -12.29 | -5.08  |        |       |
| 0.380          | -5.16  | -12.27 | -12.25 | -22.41 | -22.40 | -22.47 | -22.45 | -12.30 | -12.32 | -22.42 | -22.45 | -22.50 | -22.51 | -5.16  | -22.39 | -22.41 | -22.46 | -22.48 | -22.45 | -22.44 | -22.48 | -22.50 | -5.15  | -12.38 | -12.39 | -12.39 | -12.38 | -5.15  |        |       |
| 0.390          | -5.24  | -12.38 | -12.39 | -22.40 | -22.46 | -22.49 | -22.51 | -12.40 | -12.42 | -22.47 | -22.43 | -22.52 | -22.53 | -5.24  | -22.41 | -22.43 | -22.46 | -22.48 | -22.48 | -22.48 | -22.51 | -22.55 | -5.22  | -12.49 | -12.48 | -12.49 | -12.49 | -5.22  |        |       |
| 0.400          | -5.30  | -12.51 | -12.48 | -22.39 | -22.41 | -22.44 | -22.51 | -12.51 | -12.56 | -22.48 | -22.45 | -22.53 | -22.47 | -5.30  | -22.45 | -22.45 | -22.45 | -22.48 | -22.50 | -22.43 | -22.47 | -22.52 | -22.50 | -5.28  | -12.58 | -12.59 | -12.60 | -12.59 | -5.23  |       |
| 0.411          | -5.37  | -12.61 | -12.62 | -22.38 | -22.37 | -22.43 | -22.47 | -12.65 | -12.66 | -22.43 | -22.45 | -22.47 | -22.49 | -5.37  | -22.42 | -2     |        |        |        |        |        |        |        |        |        |        |        |        |        |       |



# Typical Characteristics ON APD-8-DC23G-292FF

**VSWR IN 10 to 500 MHz (+85°C)**

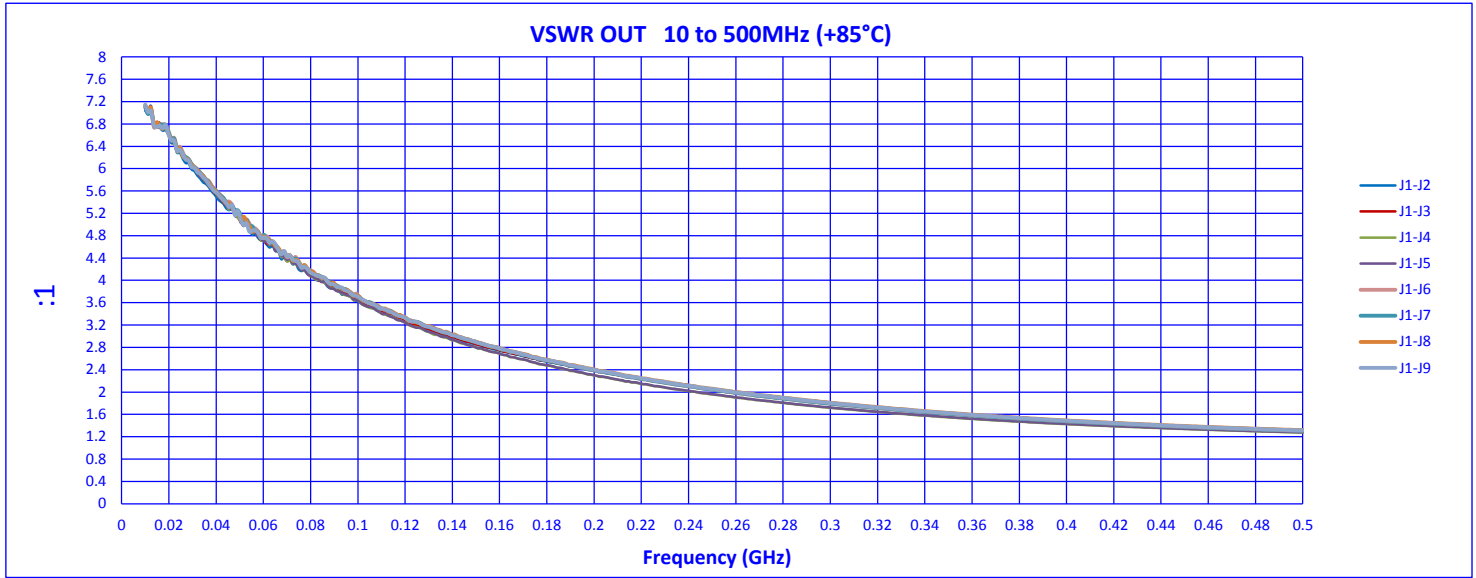


| VSWR IN         |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 8.01  | 7.97  | 8.05  | 7.88  | 7.97  | 7.91  | 8.01  | 7.92  |
| 0.020           | 7.36  | 7.34  | 7.35  | 7.33  | 7.32  | 7.34  | 7.36  | 7.27  |
| 0.030           | 7.14  | 7.19  | 7.17  | 7.17  | 7.20  | 7.23  | 7.16  | 7.22  |
| 0.041           | 7.02  | 7.01  | 7.05  | 7.03  | 7.02  | 7.00  | 6.99  | 7.03  |
| 0.050           | 6.98  | 6.92  | 6.91  | 6.90  | 6.86  | 6.98  | 7.08  | 6.99  |
| 0.060           | 6.87  | 6.78  | 6.76  | 6.80  | 6.85  | 6.79  | 6.71  | 6.78  |
| 0.070           | 6.67  | 6.62  | 6.65  | 6.63  | 6.64  | 6.69  | 6.67  | 6.70  |
| 0.080           | 6.55  | 6.59  | 6.55  | 6.61  | 6.51  | 6.49  | 6.56  | 6.55  |
| 0.090           | 6.51  | 6.48  | 6.58  | 6.49  | 6.55  | 6.51  | 6.55  | 6.51  |
| 0.101           | 6.42  | 6.48  | 6.40  | 6.41  | 6.45  | 6.41  | 6.44  | 6.45  |
| 0.110           | 6.34  | 6.34  | 6.37  | 6.36  | 6.32  | 6.36  | 6.36  | 6.34  |
| 0.120           | 6.27  | 6.26  | 6.28  | 6.25  | 6.26  | 6.24  | 6.26  | 6.26  |
| 0.130           | 6.11  | 6.11  | 6.10  | 6.08  | 6.10  | 6.14  | 6.11  | 6.13  |
| 0.140           | 6.04  | 6.01  | 6.08  | 6.06  | 6.05  | 6.03  | 6.05  | 6.05  |
| 0.150           | 5.87  | 5.87  | 5.85  | 5.86  | 5.88  | 5.85  | 5.87  | 5.86  |
| 0.161           | 5.79  | 5.77  | 5.76  | 5.77  | 5.73  | 5.78  | 5.76  | 5.73  |
| 0.170           | 5.65  | 5.65  | 5.66  | 5.65  | 5.65  | 5.64  | 5.64  | 5.63  |
| 0.172           | 5.67  | 5.67  | 5.69  | 5.67  | 5.63  | 5.65  | 5.64  | 5.66  |
| 0.180           | 5.55  | 5.55  | 5.56  | 5.52  | 5.54  | 5.54  | 5.56  | 5.53  |
| 0.190           | 5.43  | 5.42  | 5.43  | 5.41  | 5.43  | 5.41  | 5.41  | 5.43  |
| 0.200           | 5.33  | 5.33  | 5.33  | 5.33  | 5.35  | 5.34  | 5.32  | 5.32  |
| 0.201           | 5.29  | 5.27  | 5.30  | 5.28  | 5.29  | 5.29  | 5.27  | 5.26  |
| 0.210           | 5.17  | 5.19  | 5.17  | 5.19  | 5.19  | 5.17  | 5.17  | 5.18  |
| 0.221           | 5.05  | 5.05  | 5.06  | 5.03  | 5.05  | 5.04  | 5.03  | 5.05  |
| 0.231           | 4.94  | 4.94  | 4.93  | 4.94  | 4.93  | 4.94  | 4.94  | 4.92  |
| 0.240           | 4.78  | 4.79  | 4.80  | 4.79  | 4.77  | 4.79  | 4.80  | 4.79  |
| 0.250           | 4.68  | 4.69  | 4.69  | 4.68  | 4.68  | 4.68  | 4.68  | 4.69  |
| 0.251           | 4.68  | 4.68  | 4.68  | 4.68  | 4.68  | 4.67  | 4.68  | 4.69  |
| 0.260           | 4.55  | 4.57  | 4.55  | 4.54  | 4.54  | 4.55  | 4.55  | 4.55  |
| 0.270           | 4.44  | 4.42  | 4.43  | 4.42  | 4.43  | 4.43  | 4.43  | 4.42  |
| 0.280           | 4.30  | 4.30  | 4.30  | 4.30  | 4.30  | 4.30  | 4.29  | 4.29  |
| 0.291           | 4.14  | 4.15  | 4.16  | 4.15  | 4.14  | 4.14  | 4.15  | 4.15  |
| 0.300           | 4.01  | 4.02  | 4.02  | 4.01  | 4.01  | 4.02  | 4.02  | 4.02  |
| 0.310           | 3.91  | 3.91  | 3.90  | 3.91  | 3.89  | 3.90  | 3.90  | 3.90  |
| 0.320           | 3.76  | 3.76  | 3.77  | 3.76  | 3.76  | 3.76  | 3.76  | 3.76  |
| 0.330           | 3.66  | 3.65  | 3.66  | 3.65  | 3.64  | 3.65  | 3.65  | 3.64  |
| 0.340           | 3.52  | 3.52  | 3.53  | 3.52  | 3.52  | 3.52  | 3.52  | 3.53  |
| 0.351           | 3.38  | 3.38  | 3.38  | 3.38  | 3.38  | 3.38  | 3.38  | 3.38  |
| 0.360           | 3.26  | 3.26  | 3.27  | 3.26  | 3.26  | 3.26  | 3.27  | 3.26  |
| 0.370           | 3.14  | 3.14  | 3.14  | 3.14  | 3.15  | 3.15  | 3.14  | 3.15  |
| 0.380           | 3.03  | 3.03  | 3.03  | 3.03  | 3.03  | 3.02  | 3.03  | 3.03  |
| 0.390           | 2.90  | 2.90  | 2.90  | 2.90  | 2.90  | 2.90  | 2.90  | 2.90  |
| 0.400           | 2.79  | 2.79  | 2.79  | 2.79  | 2.79  | 2.79  | 2.79  | 2.79  |
| 0.411           | 2.67  | 2.67  | 2.66  | 2.66  | 2.66  | 2.66  | 2.66  | 2.66  |
| 0.420           | 2.56  | 2.56  | 2.56  | 2.56  | 2.56  | 2.56  | 2.56  | 2.56  |
| 0.430           | 2.45  | 2.45  | 2.45  | 2.45  | 2.45  | 2.45  | 2.45  | 2.45  |
| 0.440           | 2.35  | 2.35  | 2.35  | 2.35  | 2.35  | 2.35  | 2.35  | 2.35  |
| 0.450           | 2.25  | 2.25  | 2.25  | 2.25  | 2.25  | 2.25  | 2.24  | 2.24  |
| 0.460           | 2.15  | 2.15  | 2.15  | 2.15  | 2.14  | 2.15  | 2.15  | 2.15  |
| 0.471           | 2.04  | 2.04  | 2.04  | 2.04  | 2.04  | 2.04  | 2.04  | 2.04  |
| 0.480           | 1.96  | 1.95  | 1.95  | 1.96  | 1.95  | 1.96  | 1.96  | 1.95  |
| 0.490           | 1.87  | 1.87  | 1.87  | 1.87  | 1.87  | 1.87  | 1.87  | 1.87  |
| 0.500           | 1.79  | 1.78  | 1.79  | 1.78  | 1.78  | 1.79  | 1.78  | 1.78  |





# Typical Characteristics ON APD-8-DC23G-292FF

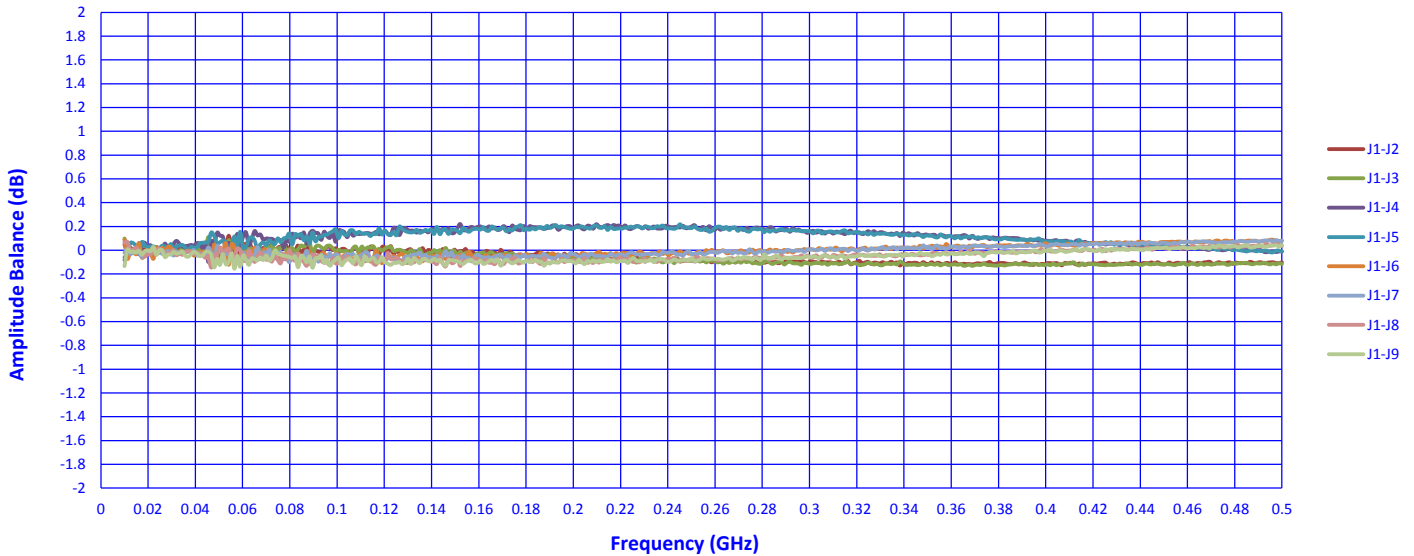


| VSWR OUT        |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 7.04  | 7.11  | 7.10  | 7.11  | 7.09  | 7.11  | 7.14  | 7.15  |
| 0.020           | 6.61  | 6.66  | 6.66  | 6.62  | 6.68  | 6.66  | 6.63  | 6.62  |
| 0.030           | 5.99  | 6.06  | 6.04  | 6.04  | 6.07  | 6.08  | 6.06  | 6.03  |
| 0.041           | 5.46  | 5.52  | 5.51  | 5.52  | 5.57  | 5.58  | 5.56  | 5.55  |
| 0.050           | 5.05  | 5.05  | 5.07  | 5.03  | 5.16  | 5.17  | 5.07  | 5.09  |
| 0.060           | 4.70  | 4.72  | 4.73  | 4.70  | 4.76  | 4.82  | 4.79  | 4.77  |
| 0.070           | 4.36  | 4.34  | 4.34  | 4.37  | 4.41  | 4.43  | 4.44  | 4.43  |
| 0.080           | 4.08  | 4.08  | 4.08  | 4.09  | 4.18  | 4.17  | 4.16  | 4.14  |
| 0.090           | 3.85  | 3.89  | 3.86  | 3.85  | 3.94  | 3.94  | 3.96  | 3.93  |
| 0.101           | 3.61  | 3.63  | 3.61  | 3.62  | 3.69  | 3.71  | 3.71  | 3.69  |
| 0.110           | 3.42  | 3.42  | 3.40  | 3.39  | 3.49  | 3.49  | 3.49  | 3.49  |
| 0.120           | 3.26  | 3.27  | 3.24  | 3.24  | 3.33  | 3.33  | 3.33  | 3.32  |
| 0.130           | 3.12  | 3.13  | 3.07  | 3.08  | 3.18  | 3.16  | 3.18  | 3.17  |
| 0.140           | 2.98  | 2.99  | 2.93  | 2.94  | 3.03  | 3.03  | 3.02  | 3.02  |
| 0.150           | 2.86  | 2.87  | 2.81  | 2.80  | 2.90  | 2.90  | 2.91  | 2.90  |
| 0.161           | 2.73  | 2.74  | 2.68  | 2.68  | 2.77  | 2.77  | 2.77  | 2.77  |
| 0.170           | 2.64  | 2.64  | 2.58  | 2.58  | 2.67  | 2.67  | 2.68  | 2.67  |
| 0.172           | 2.62  | 2.63  | 2.57  | 2.57  | 2.66  | 2.65  | 2.67  | 2.66  |
| 0.180           | 2.54  | 2.55  | 2.47  | 2.48  | 2.57  | 2.57  | 2.58  | 2.57  |
| 0.190           | 2.45  | 2.46  | 2.38  | 2.39  | 2.47  | 2.47  | 2.48  | 2.48  |
| 0.200           | 2.38  | 2.38  | 2.30  | 2.30  | 2.39  | 2.40  | 2.41  | 2.40  |
| 0.201           | 2.37  | 2.38  | 2.29  | 2.29  | 2.38  | 2.38  | 2.40  | 2.39  |
| 0.210           | 2.31  | 2.31  | 2.22  | 2.23  | 2.31  | 2.32  | 2.33  | 2.32  |
| 0.221           | 2.22  | 2.23  | 2.14  | 2.14  | 2.23  | 2.23  | 2.24  | 2.24  |
| 0.231           | 2.16  | 2.17  | 2.08  | 2.08  | 2.16  | 2.16  | 2.18  | 2.18  |
| 0.240           | 2.10  | 2.11  | 2.02  | 2.02  | 2.10  | 2.10  | 2.11  | 2.11  |
| 0.250           | 2.05  | 2.05  | 1.96  | 1.96  | 2.05  | 2.04  | 2.06  | 2.05  |
| 0.251           | 2.04  | 2.04  | 1.95  | 1.95  | 2.04  | 2.04  | 2.05  | 2.05  |
| 0.260           | 1.99  | 2.00  | 1.90  | 1.91  | 1.98  | 1.98  | 2.00  | 1.99  |
| 0.270           | 1.94  | 1.95  | 1.85  | 1.86  | 1.94  | 1.93  | 1.95  | 1.95  |
| 0.280           | 1.89  | 1.90  | 1.81  | 1.81  | 1.89  | 1.88  | 1.90  | 1.90  |
| 0.291           | 1.84  | 1.85  | 1.76  | 1.76  | 1.83  | 1.83  | 1.85  | 1.85  |
| 0.300           | 1.80  | 1.81  | 1.71  | 1.72  | 1.79  | 1.79  | 1.81  | 1.80  |
| 0.310           | 1.76  | 1.77  | 1.68  | 1.68  | 1.75  | 1.75  | 1.77  | 1.77  |
| 0.320           | 1.72  | 1.73  | 1.64  | 1.65  | 1.71  | 1.72  | 1.73  | 1.72  |
| 0.330           | 1.69  | 1.70  | 1.61  | 1.61  | 1.68  | 1.68  | 1.70  | 1.69  |
| 0.340           | 1.65  | 1.66  | 1.58  | 1.58  | 1.64  | 1.65  | 1.66  | 1.66  |
| 0.351           | 1.62  | 1.62  | 1.54  | 1.55  | 1.61  | 1.61  | 1.62  | 1.62  |
| 0.360           | 1.59  | 1.60  | 1.52  | 1.52  | 1.58  | 1.58  | 1.60  | 1.59  |
| 0.370           | 1.56  | 1.57  | 1.49  | 1.50  | 1.55  | 1.55  | 1.57  | 1.56  |
| 0.380           | 1.53  | 1.54  | 1.47  | 1.47  | 1.53  | 1.52  | 1.54  | 1.54  |
| 0.390           | 1.51  | 1.52  | 1.45  | 1.45  | 1.50  | 1.50  | 1.51  | 1.51  |
| 0.400           | 1.49  | 1.49  | 1.43  | 1.43  | 1.48  | 1.48  | 1.49  | 1.49  |
| 0.411           | 1.46  | 1.47  | 1.40  | 1.41  | 1.45  | 1.45  | 1.47  | 1.46  |
| 0.420           | 1.44  | 1.45  | 1.39  | 1.39  | 1.43  | 1.43  | 1.45  | 1.44  |
| 0.430           | 1.42  | 1.43  | 1.37  | 1.38  | 1.42  | 1.42  | 1.43  | 1.42  |
| 0.440           | 1.40  | 1.41  | 1.35  | 1.36  | 1.40  | 1.40  | 1.41  | 1.40  |
| 0.450           | 1.38  | 1.39  | 1.34  | 1.34  | 1.38  | 1.38  | 1.39  | 1.39  |
| 0.460           | 1.36  | 1.37  | 1.32  | 1.33  | 1.36  | 1.36  | 1.38  | 1.37  |
| 0.471           | 1.35  | 1.35  | 1.31  | 1.31  | 1.35  | 1.35  | 1.36  | 1.35  |
| 0.480           | 1.33  | 1.34  | 1.30  | 1.30  | 1.33  | 1.33  | 1.34  | 1.34  |
| 0.490           | 1.32  | 1.32  | 1.28  | 1.29  | 1.32  | 1.32  | 1.33  | 1.32  |
| 0.500           | 1.302 | 1.310 | 1.274 | 1.278 | 1.306 | 1.308 | 1.317 | 1.312 |



# Typical Characteristics ON APD-8-DC23G-292FF

**Amplitude Balance 10 to 500 MHz (+85°C)**

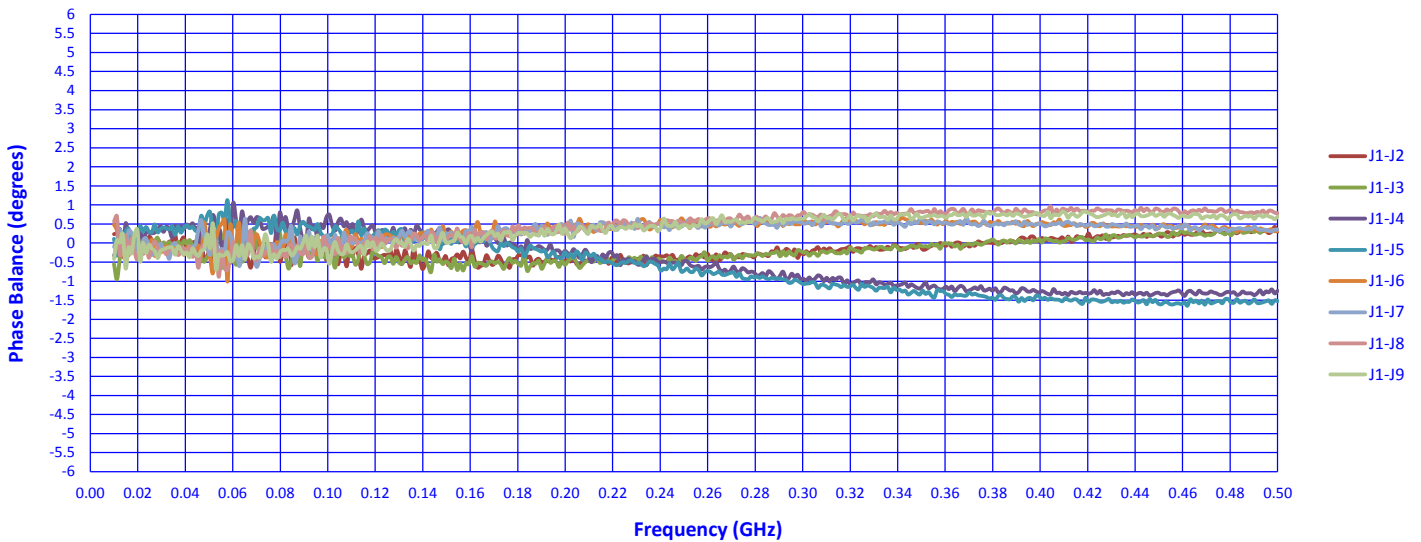


| AMPLITUDE BALANCE |       |       |       |       |       |       |       |       |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz)   | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010             | 0.05  | 0.10  | -0.08 | -0.06 | 0.09  | -0.02 | 0.06  | -0.13 |
| 0.020             | -0.02 | 0.03  | 0.02  | 0.02  | 0.00  | -0.02 | -0.03 | 0.00  |
| 0.030             | 0.00  | -0.01 | 0.01  | 0.05  | 0.02  | -0.02 | -0.02 | -0.04 |
| 0.041             | 0.02  | 0.02  | 0.06  | 0.03  | -0.03 | -0.04 | -0.02 | -0.03 |
| 0.050             | 0.02  | 0.01  | 0.12  | 0.07  | -0.10 | -0.01 | 0.02  | -0.12 |
| 0.060             | 0.05  | -0.01 | 0.11  | 0.02  | -0.03 | -0.02 | -0.08 | -0.04 |
| 0.070             | -0.01 | 0.04  | 0.10  | 0.04  | 0.00  | -0.05 | -0.08 | -0.04 |
| 0.080             | -0.06 | 0.01  | 0.07  | 0.14  | -0.01 | -0.10 | 0.00  | -0.06 |
| 0.090             | 0.01  | -0.04 | 0.16  | 0.15  | -0.05 | -0.04 | -0.03 | -0.15 |
| 0.101             | -0.02 | 0.00  | 0.17  | 0.10  | -0.04 | -0.05 | -0.10 | -0.06 |
| 0.110             | 0.01  | 0.03  | 0.14  | 0.14  | -0.05 | -0.04 | -0.10 | -0.12 |
| 0.120             | 0.02  | 0.01  | 0.16  | 0.17  | -0.08 | -0.09 | -0.09 | -0.10 |
| 0.130             | 0.00  | -0.02 | 0.17  | 0.15  | -0.06 | -0.06 | -0.11 | -0.07 |
| 0.140             | -0.01 | -0.02 | 0.18  | 0.17  | -0.07 | -0.06 | -0.10 | -0.09 |
| 0.150             | 0.00  | 0.00  | 0.15  | 0.17  | -0.06 | -0.07 | -0.10 | -0.09 |
| 0.161             | -0.03 | -0.03 | 0.20  | 0.17  | -0.08 | -0.05 | -0.09 | -0.09 |
| 0.170             | -0.03 | -0.03 | 0.20  | 0.19  | -0.04 | -0.07 | -0.12 | -0.09 |
| 0.172             | -0.06 | -0.02 | 0.18  | 0.16  | -0.04 | -0.05 | -0.09 | -0.08 |
| 0.180             | -0.05 | -0.04 | 0.17  | 0.18  | -0.03 | -0.06 | -0.09 | -0.09 |
| 0.190             | -0.03 | -0.03 | 0.19  | 0.19  | -0.04 | -0.06 | -0.10 | -0.11 |
| 0.200             | -0.05 | -0.06 | 0.18  | 0.18  | -0.04 | -0.03 | -0.08 | -0.10 |
| 0.201             | -0.03 | -0.07 | 0.20  | 0.19  | -0.04 | -0.04 | -0.10 | -0.11 |
| 0.210             | -0.09 | -0.07 | 0.22  | 0.21  | -0.03 | -0.05 | -0.08 | -0.10 |
| 0.221             | -0.07 | -0.08 | 0.19  | 0.18  | -0.02 | -0.04 | -0.07 | -0.09 |
| 0.231             | -0.10 | -0.07 | 0.20  | 0.20  | -0.04 | -0.03 | -0.07 | -0.09 |
| 0.240             | -0.07 | -0.08 | 0.20  | 0.18  | -0.04 | -0.02 | -0.07 | -0.10 |
| 0.250             | -0.08 | -0.09 | 0.20  | 0.19  | -0.03 | -0.03 | -0.09 | -0.07 |
| 0.251             | -0.09 | -0.09 | 0.21  | 0.20  | -0.04 | -0.03 | -0.07 | -0.09 |
| 0.260             | -0.09 | -0.09 | 0.17  | 0.19  | -0.02 | -0.02 | -0.07 | -0.07 |
| 0.270             | -0.09 | -0.09 | 0.19  | 0.16  | -0.01 | -0.02 | -0.07 | -0.06 |
| 0.280             | -0.09 | -0.11 | 0.18  | 0.18  | 0.00  | -0.01 | -0.07 | -0.08 |
| 0.291             | -0.10 | -0.10 | 0.18  | 0.17  | -0.01 | 0.00  | -0.06 | -0.07 |
| 0.300             | -0.09 | -0.12 | 0.16  | 0.16  | 0.01  | 0.00  | -0.06 | -0.06 |
| 0.310             | -0.11 | -0.11 | 0.14  | 0.15  | 0.01  | 0.00  | -0.04 | -0.05 |
| 0.320             | -0.10 | -0.11 | 0.15  | 0.16  | 0.00  | 0.00  | -0.04 | -0.05 |
| 0.330             | -0.11 | -0.13 | 0.15  | 0.14  | 0.01  | 0.02  | -0.03 | -0.05 |
| 0.340             | -0.11 | -0.11 | 0.15  | 0.12  | 0.02  | 0.01  | -0.03 | -0.06 |
| 0.351             | -0.11 | -0.12 | 0.13  | 0.12  | 0.03  | 0.03  | -0.04 | -0.03 |
| 0.360             | -0.12 | -0.12 | 0.11  | 0.11  | 0.03  | 0.03  | -0.02 | -0.03 |
| 0.370             | -0.11 | -0.12 | 0.10  | 0.10  | 0.04  | 0.04  | -0.03 | -0.02 |
| 0.380             | -0.11 | -0.13 | 0.10  | 0.09  | 0.04  | 0.03  | -0.01 | -0.02 |
| 0.390             | -0.11 | -0.12 | 0.09  | 0.09  | 0.04  | 0.04  | -0.02 | -0.01 |
| 0.400             | -0.12 | -0.13 | 0.08  | 0.08  | 0.06  | 0.04  | -0.01 | 0.00  |
| 0.411             | -0.11 | -0.11 | 0.06  | 0.07  | 0.04  | 0.05  | 0.00  | -0.01 |
| 0.420             | -0.11 | -0.12 | 0.06  | 0.06  | 0.06  | 0.05  | 0.01  | -0.01 |
| 0.430             | -0.12 | -0.12 | 0.05  | 0.05  | 0.07  | 0.05  | 0.01  | 0.01  |
| 0.440             | -0.12 | -0.12 | 0.04  | 0.05  | 0.07  | 0.06  | 0.01  | 0.00  |
| 0.450             | -0.12 | -0.12 | 0.04  | 0.03  | 0.07  | 0.06  | 0.02  | 0.02  |
| 0.460             | -0.11 | -0.12 | 0.03  | 0.03  | 0.07  | 0.07  | 0.01  | 0.02  |
| 0.471             | -0.11 | -0.12 | 0.02  | 0.01  | 0.07  | 0.07  | 0.03  | 0.04  |
| 0.480             | -0.10 | -0.11 | 0.01  | 0.01  | 0.06  | 0.07  | 0.04  | 0.03  |
| 0.490             | -0.10 | -0.11 | 0.01  | 0.00  | 0.07  | 0.07  | 0.04  | 0.03  |
| 0.500             | -0.10 | -0.12 | -0.01 | -0.01 | 0.08  | 0.08  | 0.04  | 0.04  |



# Typical Characteristics ON APD-8-DC23G-292FF

Phase Balance 10 to 500 MHz (+85°C)

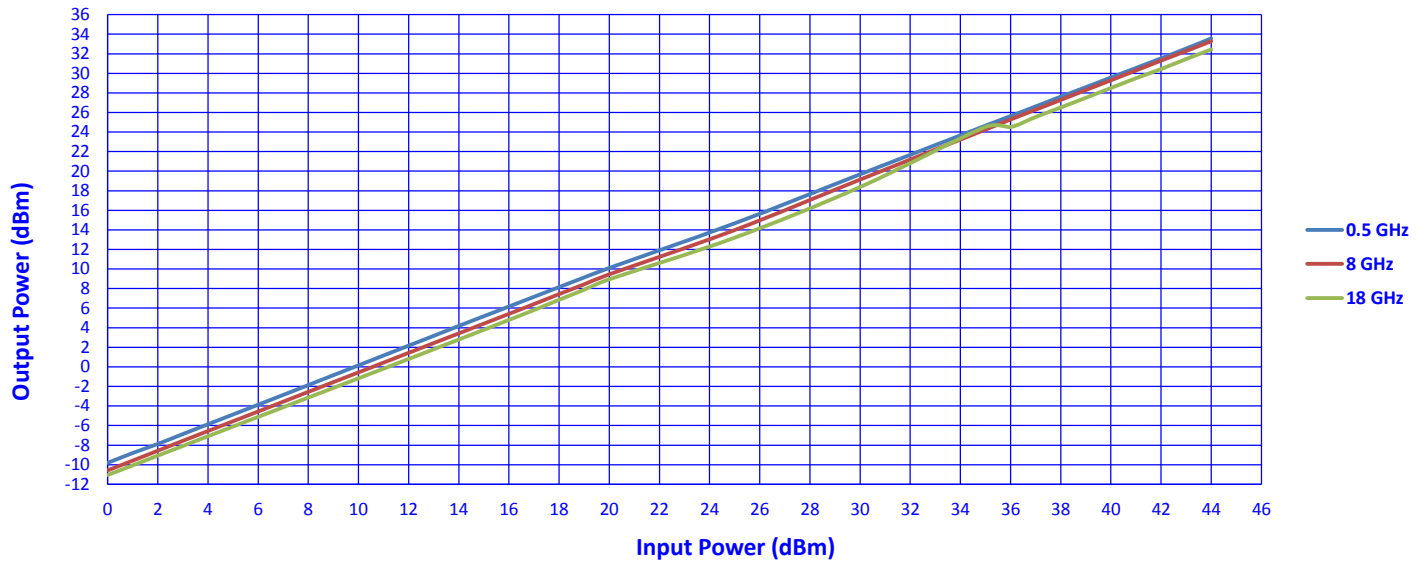


| PHASE BALANCE   |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Frequency (GHz) | J1-J2 | J1-J3 | J1-J4 | J1-J5 | J1-J6 | J1-J7 | J1-J8 | J1-J9 |
| 0.010           | 0.24  | -0.55 | -0.33 | 0.11  | 0.48  | -0.10 | 0.57  | -0.42 |
| 0.020           | 0.11  | -0.19 | 0.31  | 0.18  | -0.13 | -0.18 | -0.44 | 0.35  |
| 0.030           | -0.02 | -0.15 | 0.45  | 0.37  | -0.25 | -0.01 | -0.19 | -0.20 |
| 0.041           | -0.13 | -0.02 | 0.49  | 0.46  | -0.13 | -0.21 | -0.22 | -0.25 |
| 0.050           | -0.15 | -0.36 | 0.39  | 0.81  | -0.39 | -0.31 | 0.14  | -0.14 |
| 0.060           | -0.12 | -0.20 | 1.06  | 0.42  | -0.42 | -0.33 | 0.02  | -0.44 |
| 0.070           | 0.22  | -0.12 | 0.68  | 0.42  | 0.23  | -0.62 | -0.45 | -0.35 |
| 0.080           | -0.47 | 0.26  | 0.80  | 0.33  | -0.24 | -0.06 | -0.37 | -0.25 |
| 0.090           | -0.14 | 0.03  | 0.07  | 0.56  | -0.01 | -0.23 | -0.29 | 0.00  |
| 0.101           | -0.20 | 0.02  | 0.75  | 0.19  | -0.19 | 0.08  | -0.10 | -0.55 |
| 0.110           | -0.31 | -0.32 | 0.50  | 0.32  | -0.05 | -0.01 | 0.11  | -0.24 |
| 0.120           | -0.40 | -0.28 | 0.23  | 0.26  | 0.12  | 0.11  | 0.14  | -0.20 |
| 0.130           | -0.33 | -0.52 | 0.20  | 0.34  | 0.08  | 0.17  | 0.05  | 0.00  |
| 0.140           | -0.68 | -0.45 | 0.28  | 0.29  | 0.25  | 0.14  | 0.16  | 0.00  |
| 0.150           | -0.34 | -0.48 | 0.29  | 0.00  | 0.19  | 0.26  | 0.06  | 0.03  |
| 0.161           | -0.17 | -0.34 | -0.19 | -0.08 | 0.28  | 0.43  | -0.11 | 0.18  |
| 0.170           | -0.51 | -0.53 | 0.12  | -0.19 | 0.57  | 0.23  | 0.13  | 0.18  |
| 0.172           | -0.33 | -0.49 | 0.00  | -0.21 | 0.20  | 0.44  | 0.15  | 0.25  |
| 0.180           | -0.32 | -0.55 | -0.19 | -0.23 | 0.23  | 0.32  | 0.47  | 0.26  |
| 0.190           | -0.51 | -0.68 | -0.11 | -0.22 | 0.43  | 0.45  | 0.28  | 0.36  |
| 0.200           | -0.46 | -0.57 | -0.20 | -0.24 | 0.48  | 0.37  | 0.23  | 0.39  |
| 0.201           | -0.44 | -0.48 | -0.27 | -0.36 | 0.44  | 0.33  | 0.54  | 0.25  |
| 0.210           | -0.45 | -0.47 | -0.29 | -0.30 | 0.50  | 0.40  | 0.37  | 0.24  |
| 0.221           | -0.42 | -0.41 | -0.36 | -0.56 | 0.37  | 0.46  | 0.57  | 0.34  |
| 0.231           | -0.41 | -0.49 | -0.56 | -0.53 | 0.54  | 0.63  | 0.39  | 0.44  |
| 0.240           | -0.35 | -0.45 | -0.50 | -0.72 | 0.61  | 0.48  | 0.52  | 0.42  |
| 0.250           | -0.45 | -0.41 | -0.47 | -0.73 | 0.58  | 0.49  | 0.52  | 0.47  |
| 0.251           | -0.39 | -0.48 | -0.48 | -0.67 | 0.51  | 0.58  | 0.47  | 0.46  |
| 0.260           | -0.27 | -0.46 | -0.61 | -0.73 | 0.44  | 0.45  | 0.65  | 0.53  |
| 0.270           | -0.29 | -0.29 | -0.72 | -0.78 | 0.45  | 0.43  | 0.64  | 0.55  |
| 0.280           | -0.38 | -0.33 | -0.77 | -0.90 | 0.56  | 0.50  | 0.65  | 0.66  |
| 0.291           | -0.31 | -0.35 | -0.85 | -0.93 | 0.55  | 0.61  | 0.63  | 0.65  |
| 0.300           | -0.30 | -0.25 | -0.94 | -1.08 | 0.60  | 0.51  | 0.82  | 0.64  |
| 0.310           | -0.19 | -0.26 | -0.91 | -1.15 | 0.55  | 0.64  | 0.67  | 0.66  |
| 0.320           | -0.09 | -0.12 | -1.07 | -1.14 | 0.56  | 0.51  | 0.64  | 0.71  |
| 0.330           | -0.16 | -0.17 | -0.95 | -1.18 | 0.48  | 0.54  | 0.70  | 0.73  |
| 0.340           | -0.07 | -0.09 | -1.11 | -1.23 | 0.56  | 0.53  | 0.79  | 0.62  |
| 0.351           | -0.17 | -0.09 | -1.12 | -1.25 | 0.53  | 0.62  | 0.81  | 0.67  |
| 0.360           | -0.07 | 0.00  | -1.14 | -1.34 | 0.59  | 0.53  | 0.77  | 0.66  |
| 0.370           | -0.09 | -0.02 | -1.24 | -1.29 | 0.54  | 0.52  | 0.79  | 0.79  |
| 0.380           | 0.00  | 0.09  | -1.25 | -1.43 | 0.54  | 0.46  | 0.81  | 0.78  |
| 0.390           | 0.00  | -0.01 | -1.32 | -1.42 | 0.51  | 0.57  | 0.90  | 0.78  |
| 0.400           | 0.06  | 0.11  | -1.30 | -1.40 | 0.51  | 0.52  | 0.76  | 0.74  |
| 0.411           | 0.04  | 0.05  | -1.31 | -1.44 | 0.45  | 0.54  | 0.88  | 0.79  |
| 0.420           | 0.25  | 0.09  | -1.33 | -1.54 | 0.45  | 0.48  | 0.82  | 0.78  |
| 0.430           | 0.15  | 0.19  | -1.30 | -1.55 | 0.43  | 0.50  | 0.86  | 0.73  |
| 0.440           | 0.23  | 0.15  | -1.36 | -1.52 | 0.43  | 0.45  | 0.86  | 0.75  |
| 0.450           | 0.23  | 0.25  | -1.30 | -1.59 | 0.39  | 0.40  | 0.89  | 0.74  |
| 0.460           | 0.27  | 0.33  | -1.31 | -1.60 | 0.47  | 0.38  | 0.74  | 0.72  |
| 0.471           | 0.24  | 0.22  | -1.32 | -1.48 | 0.40  | 0.39  | 0.84  | 0.70  |
| 0.480           | 0.34  | 0.20  | -1.30 | -1.56 | 0.38  | 0.35  | 0.87  | 0.73  |
| 0.490           | 0.33  | 0.29  | -1.37 | -1.48 | 0.37  | 0.44  | 0.79  | 0.63  |
| 0.500           | 0.30  | 0.33  | -1.25 | -1.52 | 0.32  | 0.35  | 0.79  | 0.69  |



# Typical Characteristics ON APD-8-DC23G-292FF

### High Power Test Graph



| High Power Test   |                    |        |                   |                    |        |                   |                    |        | Power Input (Watts) |
|-------------------|--------------------|--------|-------------------|--------------------|--------|-------------------|--------------------|--------|---------------------|
| 0.5 GHz           |                    |        | 8 GHz             |                    |        | 18 GHz            |                    |        |                     |
| Power Input (dBm) | Power Output (dBm) | Loss   | Power Input (dBm) | Power Output (dBm) | Loss   | Power Input (dBm) | Power Output (dBm) | Loss   |                     |
| 0.0               | -9.816             | 9.816  | 0.0               | -10.584            | 10.584 | 0.0               | -11.056            | 11.056 |                     |
| 1.0               | -8.809             | 9.809  | 1.0               | -9.582             | 10.582 | 1.0               | -10.068            | 11.068 |                     |
| 2.0               | -7.878             | 9.878  | 2.0               | -8.571             | 10.571 | 2.0               | -9.076             | 11.076 |                     |
| 3.0               | -6.871             | 9.871  | 3.0               | -7.560             | 10.560 | 3.0               | -8.085             | 11.085 |                     |
| 4.0               | -5.867             | 9.867  | 4.0               | -6.559             | 10.559 | 4.0               | -7.088             | 11.088 |                     |
| 5.0               | -4.869             | 9.869  | 5.0               | -5.559             | 10.559 | 5.0               | -6.101             | 11.101 |                     |
| 6.0               | -3.870             | 9.870  | 6.0               | -4.561             | 10.561 | 6.0               | -5.115             | 11.115 |                     |
| 7.0               | -2.869             | 9.869  | 7.0               | -3.558             | 10.558 | 7.0               | -4.128             | 11.128 |                     |
| 8.0               | -1.862             | 9.862  | 8.0               | -2.559             | 10.559 | 8.0               | -3.140             | 11.140 |                     |
| 9.0               | -0.852             | 9.852  | 9.0               | -1.562             | 10.562 | 9.0               | -2.154             | 11.154 |                     |
| 10.0              | 0.150              | 9.850  | 10.0              | -0.566             | 10.566 | 10.0              | -1.171             | 11.171 |                     |
| 11.0              | 1.160              | 9.840  | 11.0              | 0.432              | 10.568 | 11.0              | -0.184             | 11.184 |                     |
| 12.0              | 2.165              | 9.835  | 12.0              | 1.432              | 10.568 | 12.0              | 0.806              | 11.194 |                     |
| 13.0              | 3.168              | 9.832  | 13.0              | 2.428              | 10.572 | 13.0              | 1.798              | 11.202 |                     |
| 14.0              | 4.181              | 9.819  | 14.0              | 3.423              | 10.577 | 14.0              | 2.793              | 11.207 |                     |
| 15.0              | 5.174              | 9.826  | 15.0              | 4.419              | 10.582 | 15.0              | 3.790              | 11.210 |                     |
| 16.0              | 6.168              | 9.832  | 16.0              | 5.417              | 10.583 | 16.0              | 4.795              | 11.205 |                     |
| 17.0              | 7.160              | 9.840  | 17.0              | 6.417              | 10.583 | 17.0              | 5.809              | 11.191 |                     |
| 18.0              | 8.150              | 9.850  | 18.0              | 7.435              | 10.565 | 18.0              | 6.853              | 11.148 |                     |
| 19.0              | 9.138              | 9.862  | 19.0              | 8.437              | 10.563 | 19.0              | 7.890              | 11.110 |                     |
| 20.0              | 10.106             | 9.894  | 20.0              | 9.459              | 10.541 | 20.0              | 8.948              | 11.052 |                     |
| 25.0              | 14.670             | 10.330 | 25.0              | 13.980             | 11.020 | 25.0              | 13.200             | 11.800 |                     |
| 30.0              | 19.680             | 10.320 | 30.0              | 19.140             | 10.860 | 30.0              | 18.380             | 11.620 | 1 Watt              |
| 35.0              | 24.650             | 10.350 | 35.0              | 24.250             | 10.750 | 35.0              | 24.520             | 10.480 | 3 Watts             |
| 36.0              | 25.630             | 10.370 | 36.0              | 25.280             | 10.720 | 36.0              | 24.510             | 11.490 | 4 Watts             |
| 37.0              | 26.620             | 10.380 | 37.0              | 26.280             | 10.720 | 37.0              | 25.540             | 11.460 | 5 watts             |
| 38.0              | 27.610             | 10.390 | 38.0              | 27.280             | 10.720 | 38.0              | 26.510             | 11.490 | 6 watts             |
| 39.0              | 28.580             | 10.420 | 39.0              | 28.290             | 10.710 | 39.0              | 27.500             | 11.500 | 8 watts             |
| 40.0              | 29.570             | 10.430 | 40.0              | 29.290             | 10.710 | 40.0              | 28.500             | 11.500 | 10 Watts            |
| 41.0              | 30.550             | 10.450 | 41.0              | 30.290             | 10.710 | 41.0              | 29.500             | 11.500 | 12.5 Watts          |
| 42.0              | 31.530             | 10.470 | 42.0              | 31.300             | 10.700 | 42.0              | 30.440             | 11.560 | 16 Watts            |
| 43.0              | 32.530             | 10.470 | 43.0              | 32.280             | 10.720 | 43.0              | 31.460             | 11.540 | 20 Watts            |
| 44.0              | 33.570             | 10.430 | 44.000            | 33.280             | 10.720 | 44.000            | 32.440             | 11.560 | 25 watts            |