

**Typical Characteristics  
ON  
PA-218-45-5-2W-24V-SFF**

PMI MODEL NUMBER PA-218-45-5-2W-24V-SFF IS A 2 TO 18 GHz POWER AMPLIFIER WITH 42 dB MINIMUM AND 56 dB MAXIMUM GAIN, 5 dB MAXIMUM NOISE FIGURE, AND 2 WATTS MINIMUM SATURATED OUTPUT POWER.



**December 9, 2024**

**Designed By:**

**Engineering PMI**

**Drawings By:**

**Noor Azhar**

**Tested and Reported By:**

**Alfredo Lopez**

# Typical Characteristics ON PA-218-45-5-2W-24V-SFF

## Product Feature

**DESCRIPTION:**  
PMI MODEL NUMBER PA-218-45-5-2W-24V-SFF IS A 2 TO 18 GHz POWER NOISE AMPLIFIER WITH 42 dB MIN AND 56 dB MAX GAIN, A NOISE FIGURE OF 5 dB MAX AND A SATURATED OUTPUT POWER OF 2 WATTS MIN.

| ZONE | REV | DESCRIPTION      | DATE      | APPROVED |
|------|-----|------------------|-----------|----------|
| A1   |     | ORIGINAL RELEASE | 3/11/2024 |          |
| B1   |     | ECN # 24-0320    | 11/6/2024 |          |

**SPECIFICATIONS:**

- FREQUENCY RANGE:.....2.0 TO 18.0 GHz
- GAIN:.....42 dB MIN / 56 dB MAX
- GAIN FLATNESS:.....± 3.5 dB
- VSWR (INPUT):.....2.0 : 1 MAX
- VSWR (OUTPUT):.....2.4 : 1 MAX
- NOISE FIGURE:.....5 dB MAX
- RF INPUT POWER:.....+20 dBm MAX
- SATURATED OUTPUT POWER (Psat):.....2 WATTS MIN (+33 dBm)  
@ 0 dBm INPUT POWER MIN
- DC VOLTAGE SUPPLY:.....+24V @ 800 mA MAX (NO RF SIGNAL)  
@ 1.6 A MAX (Psat)
- SIZE:.....2.88" X 2.50" X 0.67"
- CONNECTORS:.....SMA FEMALE
- FINISH:.....GOLD PLATED

**\*ADD THERMAL GREASE FOR THERMAL DISSIPATION**

**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 TEMPERATURE  
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

**PMI CONFIDENTIAL AND PROPRIETARY**

| APPROVALS       | DATE      | TITLE                  |
|-----------------|-----------|------------------------|
| DESIGN: S AZHAR | 3/11/2024 | PA-218-45-5-2W-24V-SFF |
| ISSUED:         |           | OUTLINE                |
| REV: B          | 05XQ0     | DWG NO: 27046180       |
| SCALE: 5:1      |           | SHEET 1 OF 1           |

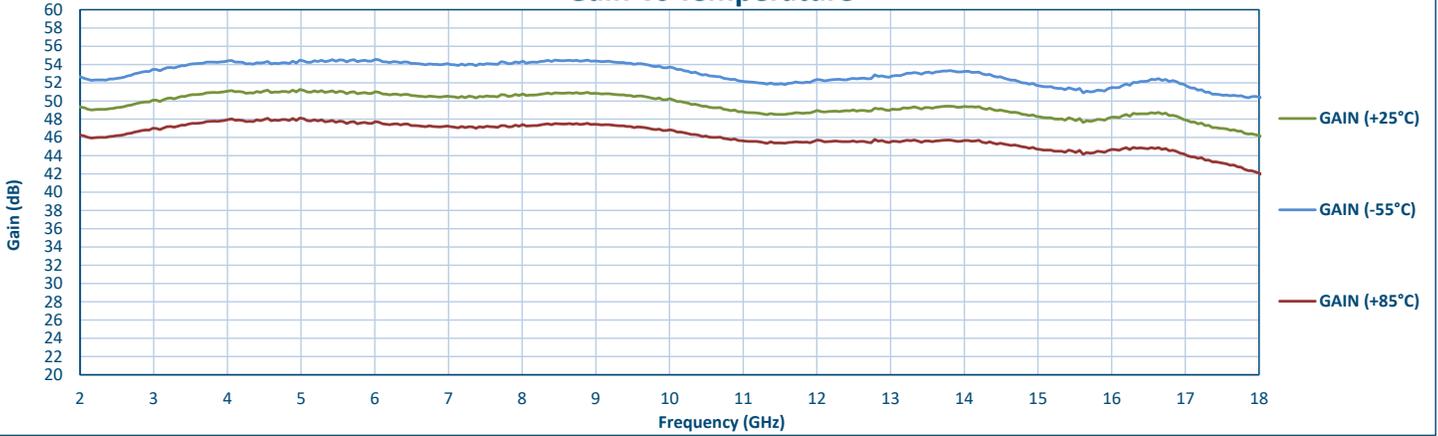
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### Technical Specifications

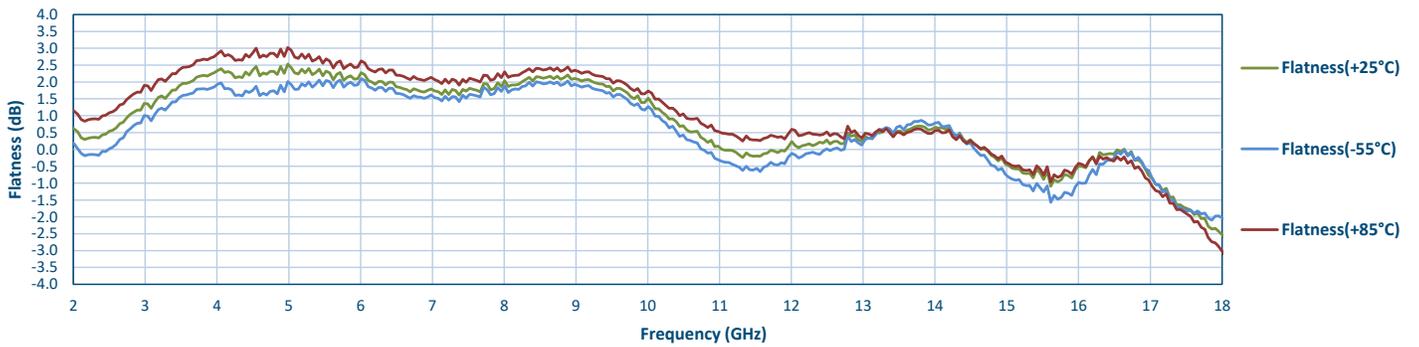
| TEST. ITEM NO | PARAMETERS           | SPECIFIED VALUE                                             | Test Results                                     |                                                  |                                                  | QA QC |
|---------------|----------------------|-------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|-------|
|               |                      |                                                             | +25°C                                            | -55°C                                            | +85°C                                            |       |
| 1             | Frequency Range:     | 2.0 - 18.0 GHz                                              | 2.0 - 18.0 GHz                                   | 2.0 - 18.0 GHz                                   | 2.0 - 18.0 GHz                                   |       |
| 2             | Gain:                | 42 dB Min.<br>56 dB Max.                                    | 51.26 dB Max.<br>46.2 dB Min.<br>See Graph       | 54.56 dB Max.<br>50.36 dB Min.<br>See Graph      | 48.13 dB Max.<br>42.09 dB Min.<br>See Graph      |       |
| 3             | Gain Flatness:       | ±3.5 dB Max.                                                | 2.53 dB<br>See Graph                             | 2.1 dB<br>See Graph                              | 3.02 dB<br>See Graph                             |       |
| 4             | VSWR:<br>(Input)     | 2.0:1 Max.                                                  | 1.82 :1<br>See Graph                             | 1.72 :1<br>See Graph                             | 1.87 :1<br>See Graph                             |       |
| 5             | VSWR:<br>(Output)    | 2.4:1 Max.                                                  | 2.22 :1<br>See Graph                             | 2.27 :1<br>See Graph                             | 1.87 :1<br>See Graph                             |       |
| 6             | Noise Figure:        | 5.0 dB Max                                                  | 3.08 dB<br>See Graph                             | 2.89 dB<br>See Graph                             | 3.36 dB<br>See Graph                             |       |
| 7             | PSAT:                | 2W Min.<br>(33 dBm )<br>@ 0 dBm Input<br>Power Min          | +38.24 dBm Max.                                  | +38.9 dBm Max.                                   | +37.95 dBm Max.                                  |       |
|               |                      |                                                             | +34 dBm Min.                                     | +35.35 dBm Min.                                  | +33.41 dBm Min.                                  |       |
|               |                      |                                                             | See Graph                                        | See Graph                                        | See Graph                                        |       |
| 8             | Maximum Input Power: | +20 dBm Max.                                                | Pass                                             |                                                  |                                                  |       |
| 9             | DC Voltage Supply:   | +24 VDC<br>@ 800 mA Max.<br>(No RF)<br>@ 1.6 A Max.<br>Psat | +24 VDC<br>@ 680 mA.(No RF)<br>@ 1,500 mA.(Psat) | +24 VDC<br>@ 640 mA.(No RF)<br>@ 1,550 mA.(Psat) | +24 VDC<br>@ 730 mA.(No RF)<br>@ 1,460 mA.(Psat) |       |

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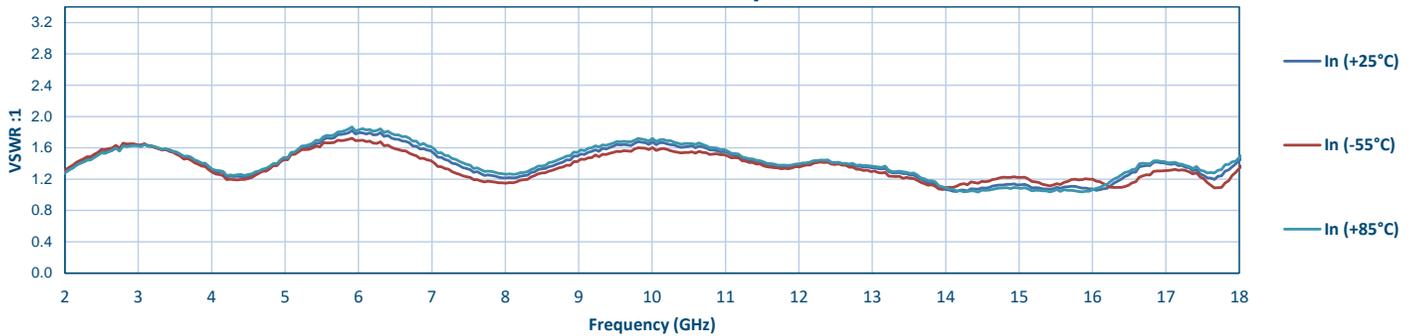
### Gain Vs Temperature



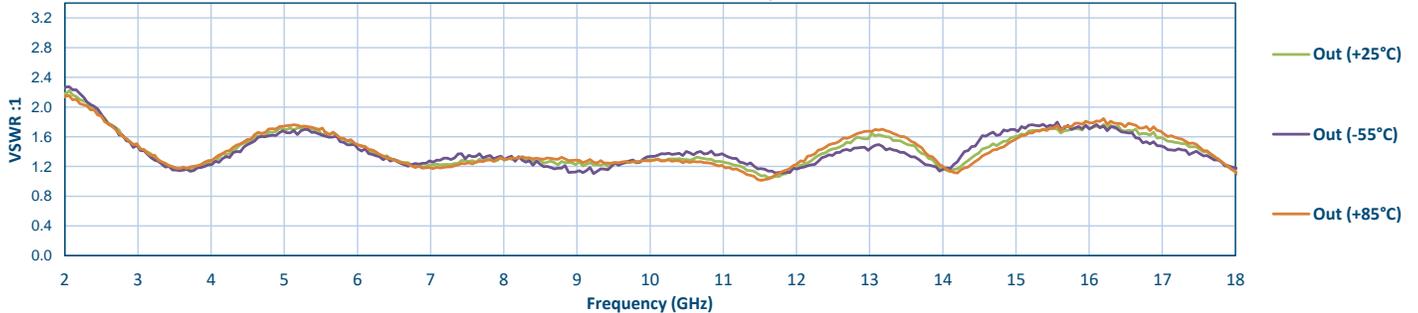
### Gain Flatness Vs Temperature



### VSWR In Vs Temperature

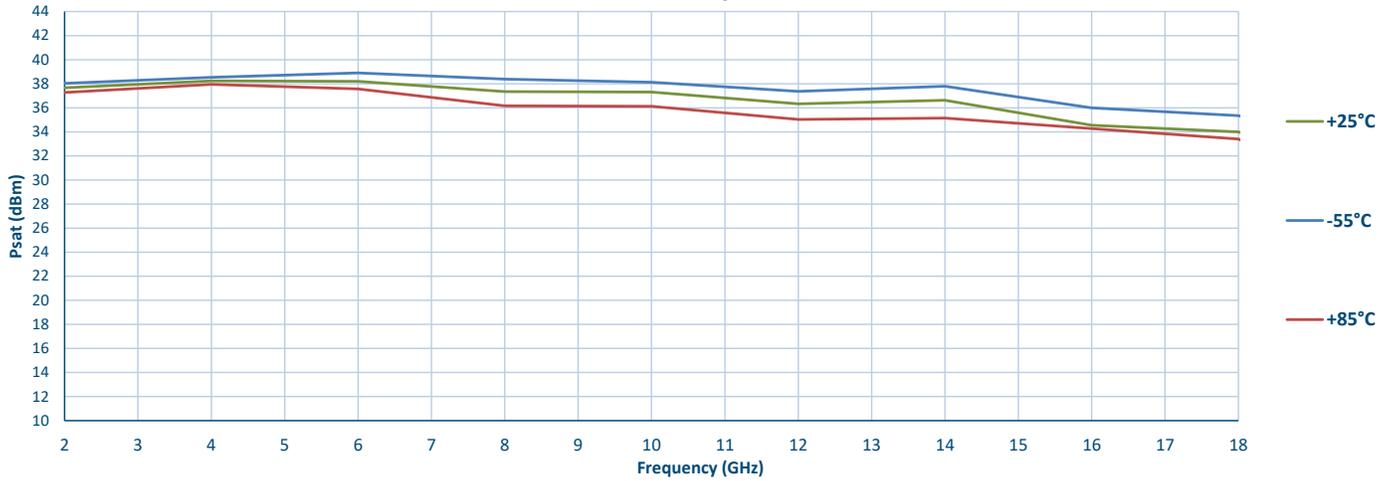


### VSWR Out Vs Temperature

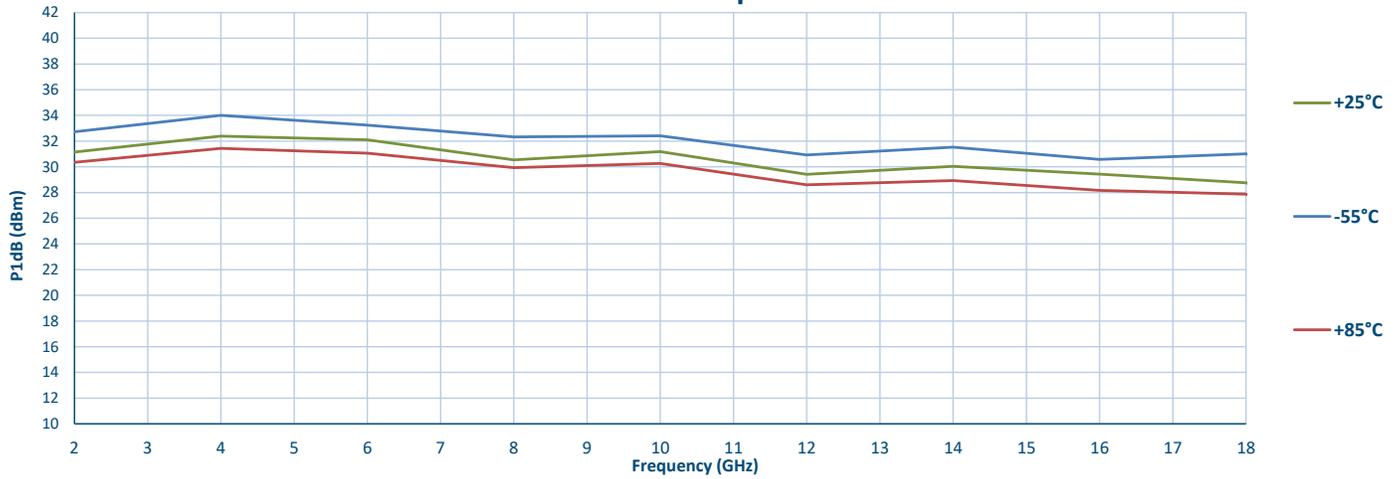


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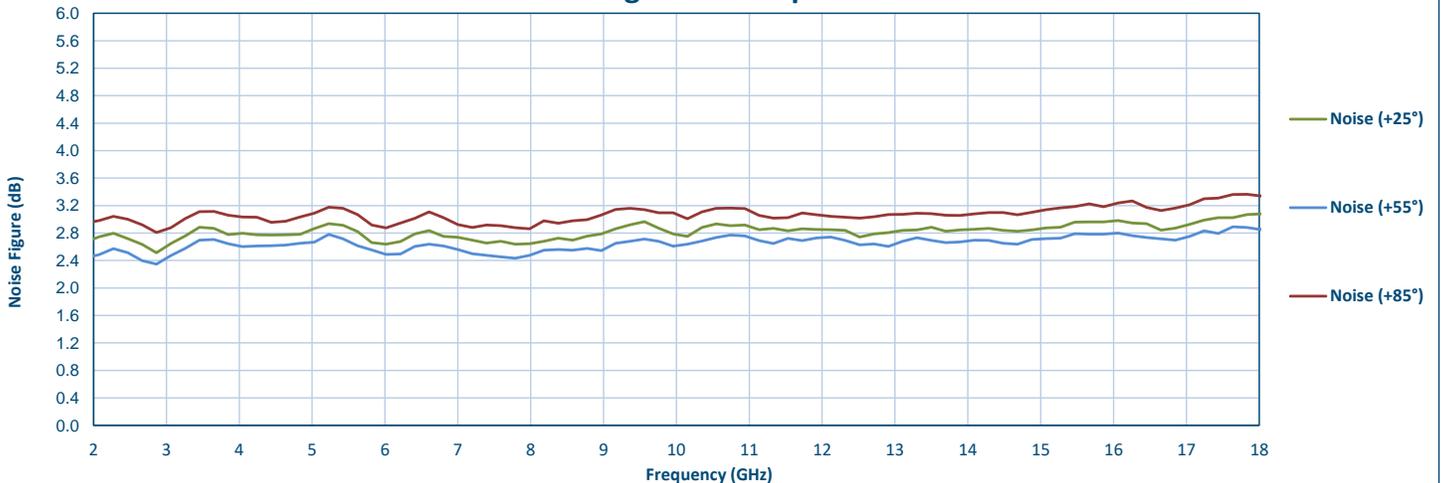
**Psat Vs Temperature**



**P1dB Vs Temperature**

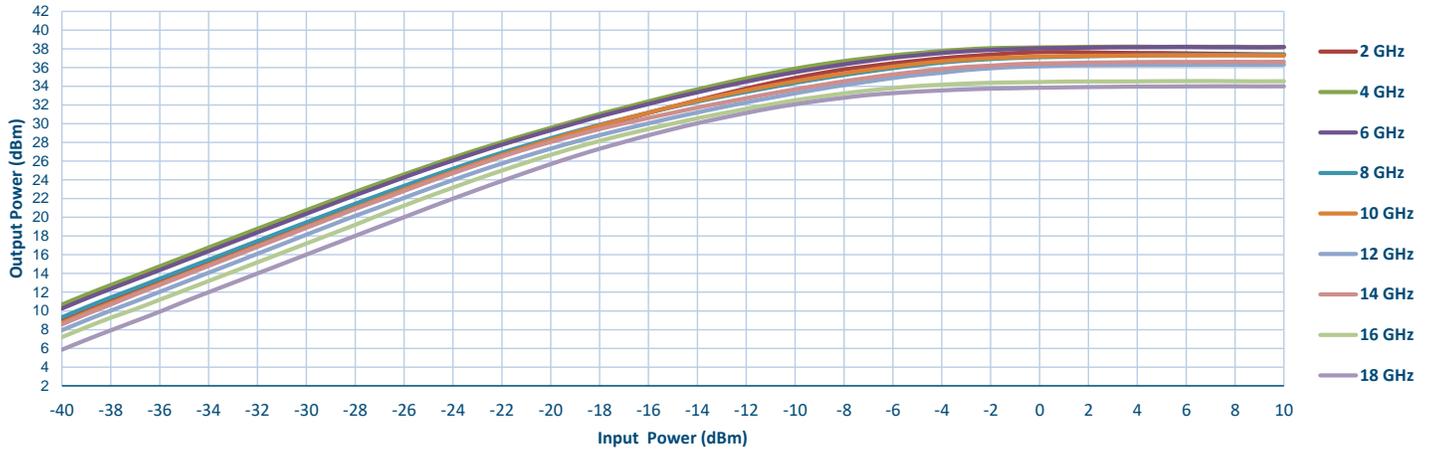


**Noise Figure Vs Temperature**

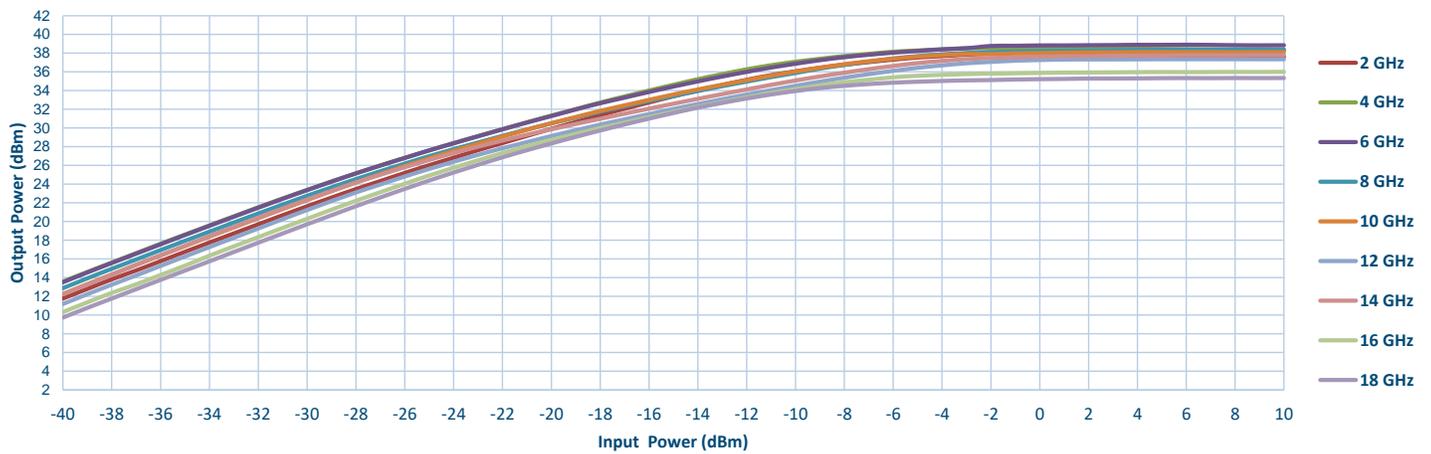


# Typical Characteristics ON PA-218-45-5-2W-24V-SFF

**Input Power Vs Output Power (+25°C)**



**Input Power Vs Output Power (-55°C)**



**Input Power Vs Output Power (+85°C)**

