



**TYPICAL CHARACTERISTICS
ON
ZBD-0R5G18G-POS-RAD-MF-ROHS**

**PMI MODEL NUMBER ZBD-0R5G18G-POS-RAD-MF-ROHS IS A ZERO BIAS SCHOTTKY DIODE DETECTOR
OPERATING OVER THE 0.5 GHz TO 18.0 GHz FREQUENCY RANGE**



September 16, 2026

Designed by:

Engineering PMI

Tested and Reported by:

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OUTLINE DRAWING

DESCRIPTION:

PMI MODEL NUMBER ZBD-0R5G18G-POS-RAD-MF-ROHS IS A ZERO BIAS SCHOTTKY DIODE DETECTOR OPERATING OVER THE 0.5 GHz TO 18.0 GHz FREQUENCY RANGE

SPECIFICATIONS:

- FREQUENCY RANGE: 0.5 GHz TO 18.0 GHz
- VSWR (INPUT): 1.5 : 1 TYP
2.0 : 1 MAX
- FREQUENCY FLATNESS: ± 3.5 dB MAX
SQUARE-LAW REGION
(-25 dBm TO -10 dBm)
- MAX INPUT POWER: 100 mW
- SENSITIVITY: 0.5 ± 0.05 mV/ μ W TYP
SQUARE-LAW REGION
(-25 dBm TO -10 dBm)
1.0 mV/ μ W MAX
- POLARITY: POSITIVE
- CAPACITANCE: 30 pF TYP
(WITH 50 Ω RG 58 CABLE < 2FT)
- CONNECTORS: 2.92 MALE (IN) / 2.92 FEMALE (OUT)
- FINISH: ALBALOY PLATED

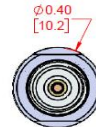
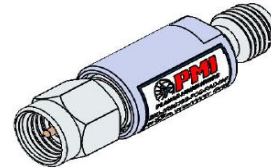
NOTE 1: CW MEASUREMENTS PERFORMED WITH 50 Ω RF SOURCE AND HIGH-IMPEDANCE OUTPUT LOAD
NOTE 2: PULSED MEASUREMENTS PERFORMED USING AN EXTERNAL 50 Ω TERMINATION THROUGH A T-CONNECTOR FOR PROPER PULSE SHAPING.
OUTPUT VOLTAGE MEASURED AT 1M Ω OSCILLOSCOPE INPUT

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -54°C TO +85°C (OPERATING)
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202, METHOD 103 COND. B
- SHOCK: MIL-STD-202, METHOD 213 COND. B
- VIBRATION: MIL-STD-202, METHOD 204 COND. B
- ALTITUDE: MIL-STD-202, METHOD 105 COND. B
- TEMPERATURE CYCLE: MIL-STD-202, METHOD 107 COND. A

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

DATE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	9/19/2008	



PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS	DATE	TITLE
DESIGN: VP	9/19/2008	OUTLINE
TESTED		
DATE	FROM NO.	REV
9/19/2008	05XG0	27054220
SCALE 3:1		



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TECHNICAL SPECIFICATIONS

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-54°C	+85°C	
1	Frequency Range:	0.5 to 18 GHz	0.5 to 18 GHz	0.5 to 18 GHz	0.5 to 18 GHz	
2	VSWR (Input):	1.5:1 Typ. 2.0:1 Max.	1.78:1 See Graph	1.9:1 See Graph	1.73:1 See Graph	
3	Polarity	POSITIVE	POSITIVE			
4	Flatness	±3.5 dB Max. Square-law region (-25 to -10 dBm)	±0.66 dB See Graph	±0.97 dB See Graph	±0.82 dB See Graph	
5	Sensitivity	0.5 ± 0.05 mV/μW Typ. Square-law region (-25 to -10 dBm) 1.0 mV/μW Max.	0.67 mV/μW (Max).	0.83 mV/μW (Max).	0.67 mV/μW (Max).	
			0.5 mV/μW (Min).	0.54 mV/μW (Min).	0.47 mV/μW (Min).	
			See graph	See graph	See graph	
6	Maximum Input Power:	100 mW (+20 dBm)	Pass 100 mW See Graphs	Pass 100 mW See Graphs	Pass 100 mW See Graphs	
7	Pulse Response:	Not specified	Rise Time: 4.3 ns Fall Time: 7.0 ns See Plots			
8	Tangential Sensitivity (TSS):	Not specified	-50 dBm See plot			
9	Capacitance	30 pF Typ. (With 50 Ω RG58 Cable ≤ 2 FT)	Pass	Pass	Pass	

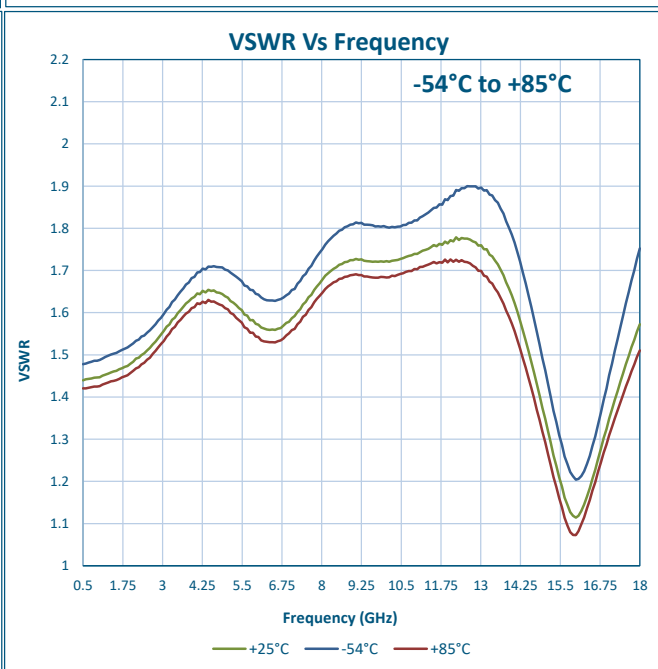
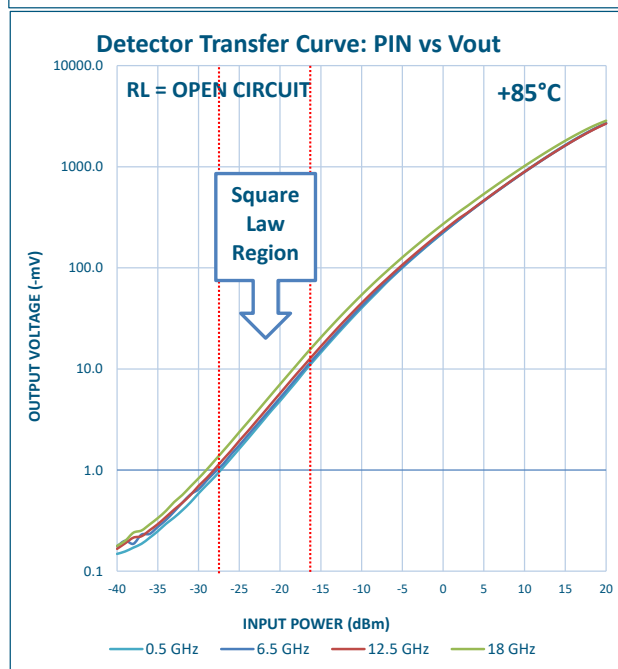
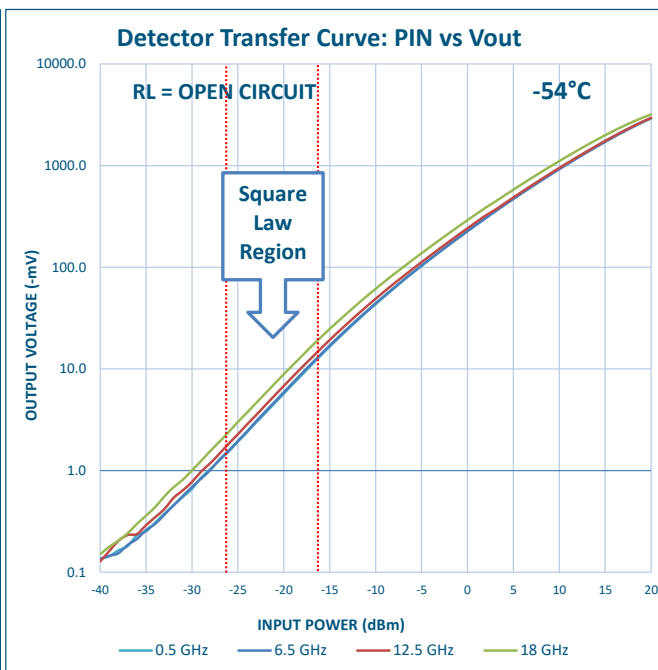
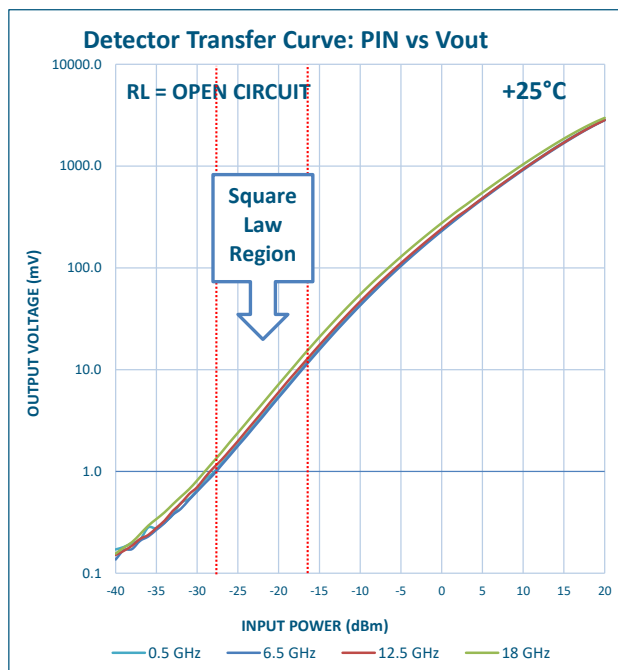
Note 1: CW measurements performed with 50 Ω RF source and high-impedance output load.

Note 2: Pulsed measurements performed using an external 50 Ω termination through a T-connector for proper pulse shaping.

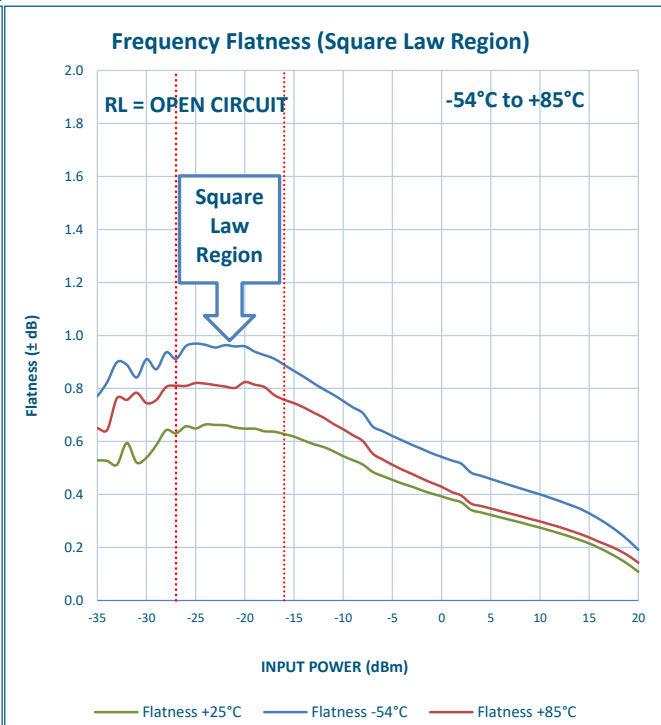
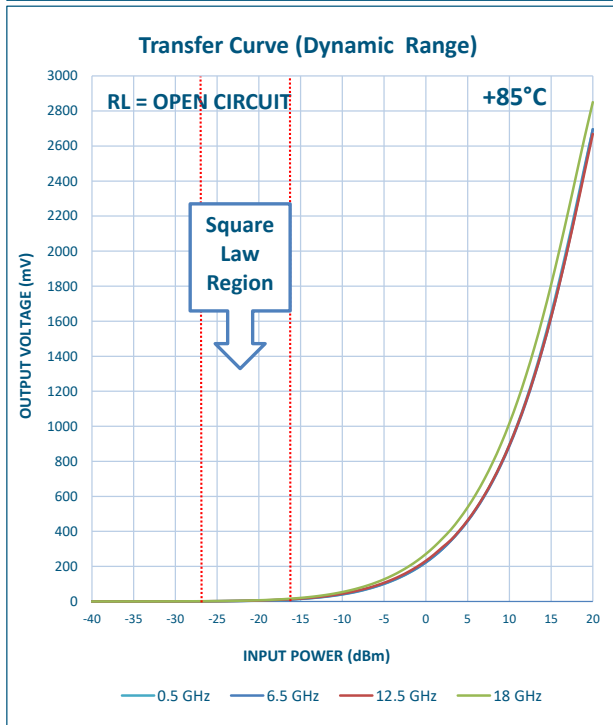
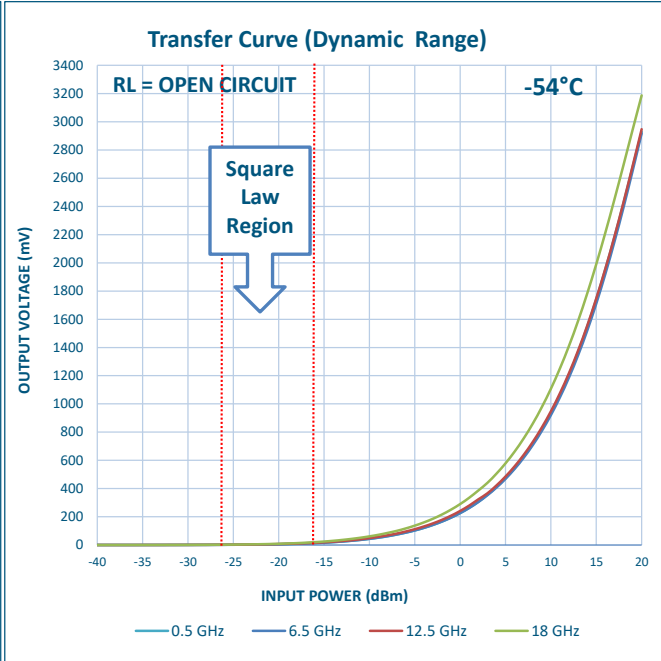
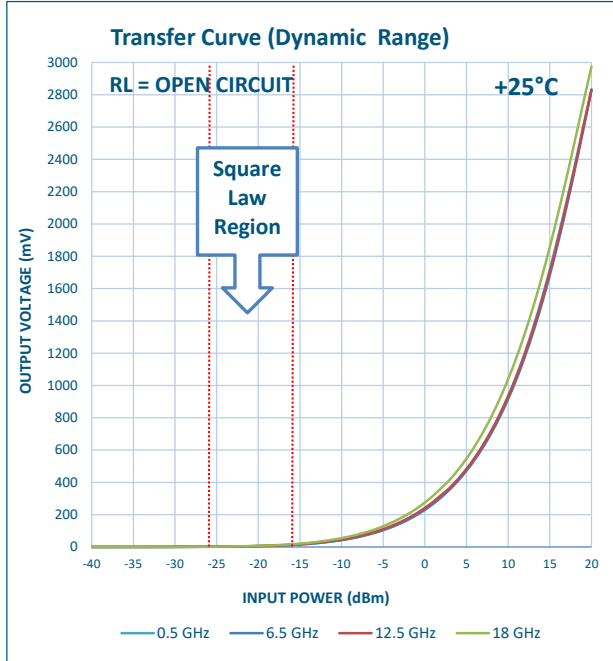
Output voltage measured at 1 MΩ oscilloscope input.

Note 3: TSS is measured with a 200 MHz VBW and 2 dB NF LNA with 20 to 30 dB Gain

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Rise & Fall time

Input Power -15dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 3.1 ns
Fall Time 2.3 ns



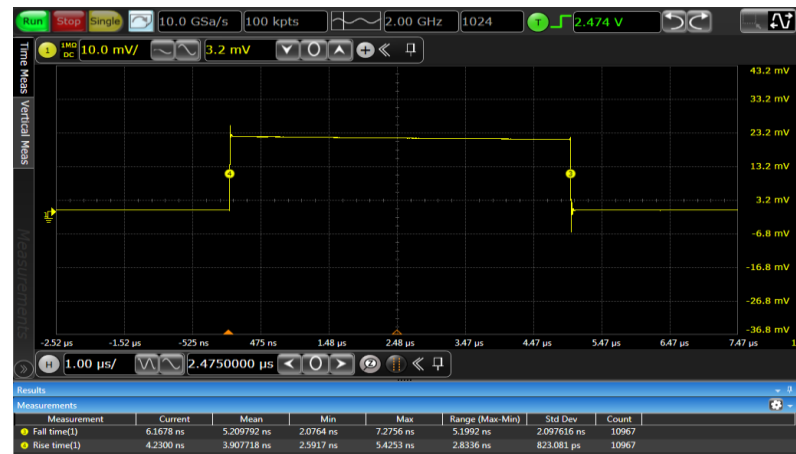
Input Power -10dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 3.4 ns
Fall Time 2.4 ns



Input Power 0 dBm
5 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 4.2 ns
Fall Time 6.2 ns





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Full Pulse

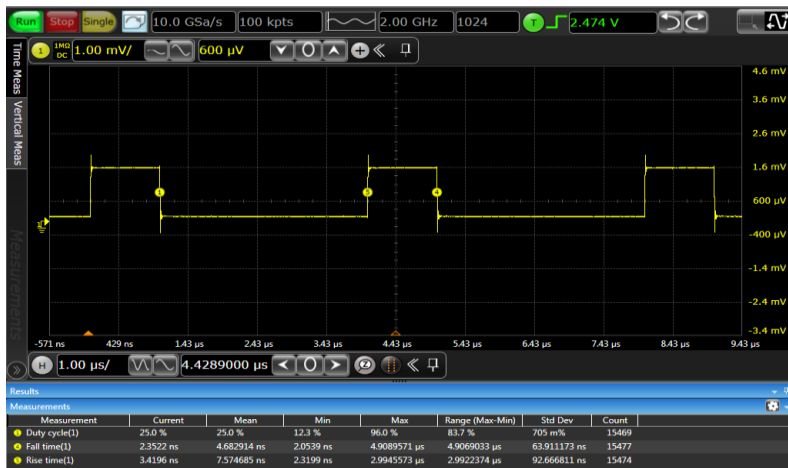
Input Power -15dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 3.7 ns
Fall Time 2.3 ns



Input Power -10dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 3.4 ns
Fall Time 2.4 ns



Input Power 0 dBm
5 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 4.3 ns
Fall Time 7.0 ns



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Tangential Sensitivity (TSS)

1 μ s PW, 50% Duty Cycle
Frequency (0.5 to 18 GHz)
Measured value (-50 dBm Input Power)



Block Diagram For TSS Test With 50 Ω Load

