



**TYPICAL CHARACTERISTICS
ON
ZBD-0R5G18G-NEG-MF-ROHS**

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



September 21, 2026

Designed by:

Engineering PMI

Tested and Reported by:

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TYPICAL CHARACTERISTICS ON ZBD-0R5G18G-NEG-MF-ROHS

OUTLINE DRAWING

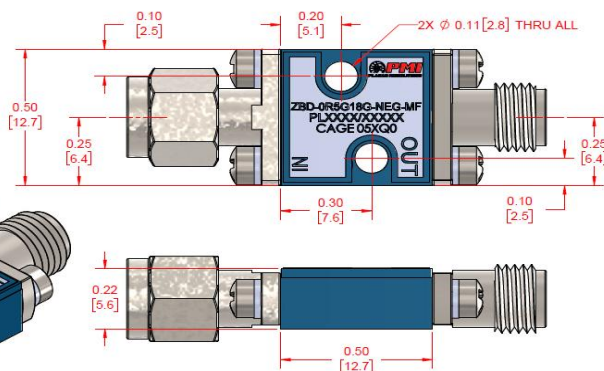
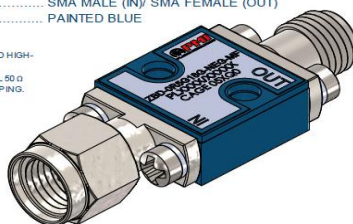
DESCRIPTION:

PMI MODEL NUMBER ZBD-0R5G18G-NEG-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
1.0 mV/ μ W MAX
SQUARE-LAW REGION
(-25 dBm TO -10 dBm)
- POLARITY: NEGATIVE
- CAPACITANCE: 30 pF TYP
(WITH 50 Ω RG 58 CABLE < 2FT)
- CONNECTORS: SMA MALE (IN) / SMA FEMALE (OUT)
- FINISH: PAINTED BLUE

NOTE 1: CWM 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	01/2008	

PMI CONFIDENTIAL AND PROPRIETARY				
APPROVED	DATE	TITLE		
DESIGNED	DATE	BY		
TESTED	DATE	BY		
REVIEWED	DATE	BY		
DATE	REV	DESCRIPTION	DATE	REV
01/2008	A1	ORIGINAL RELEASE	01/2008	A1
SCALE 4:1		SHEET 1 OF 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	NEGATIVE	NEGATIVE			
4	Flatness	±3.5 dB Max. Square-law region (-25 to -10 dBm)	±0.25 dB See Graph	±0.54 dB See Graph	±0.52 dB See Graph	
5	Sensitivity	0.5 ± 0.05 mV/μW Typ. 1.0 mV/μW Max. Square-law region (-25 to -10 dBm)	0.81 mV/μW (Max).	0.91 mV/μW (Max).	0.66 mV/μW (Max).	
			0.72 mV/μW (Min).	0.77 mV/μW (Min).	0.52 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: 5.8 ns Fall Time: 4.25 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	

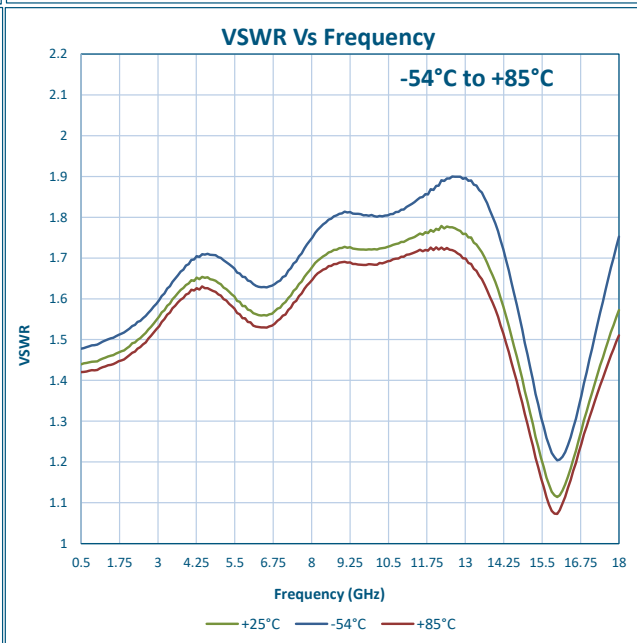
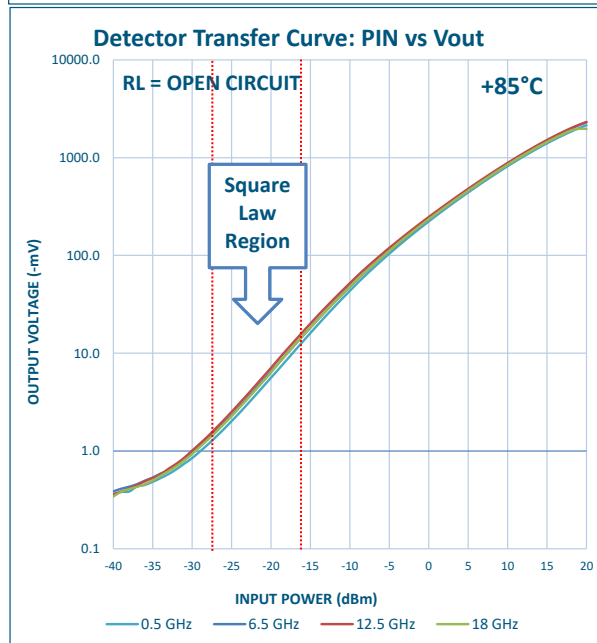
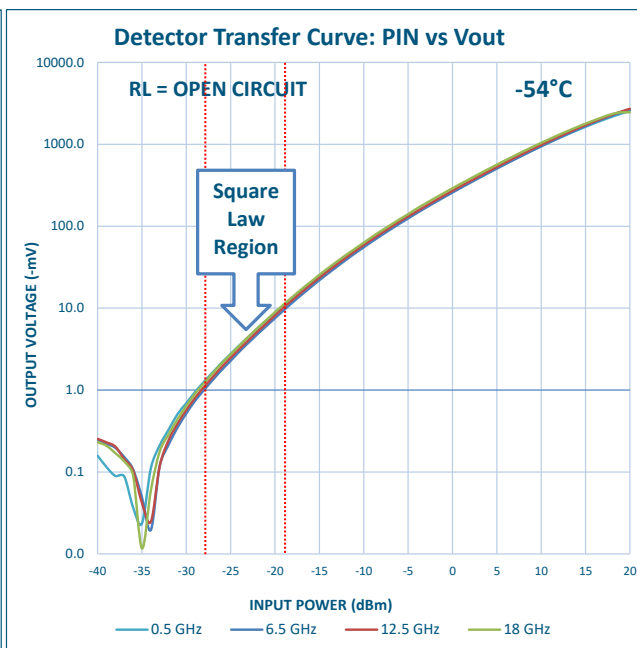
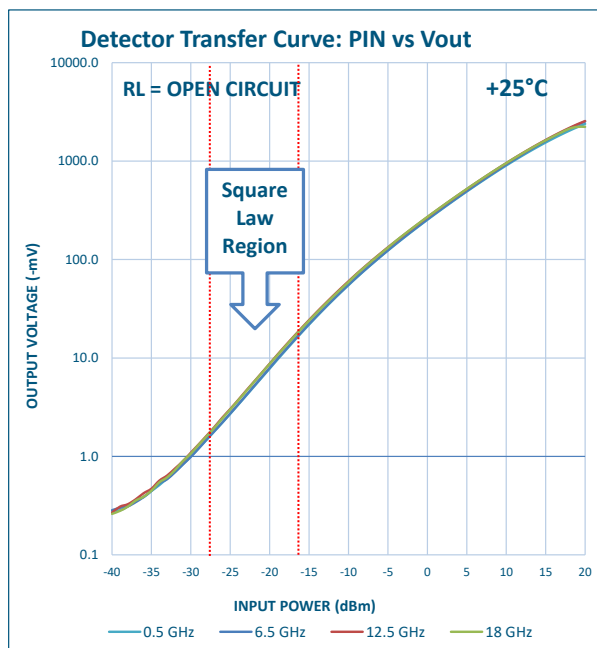
Note 1: CW measurements performed with 50 Ω RF source and high-impedance output load.

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

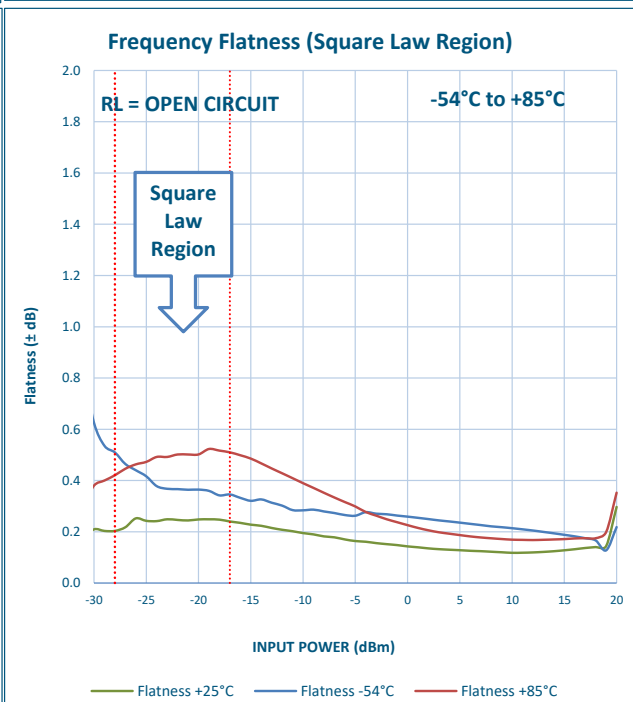
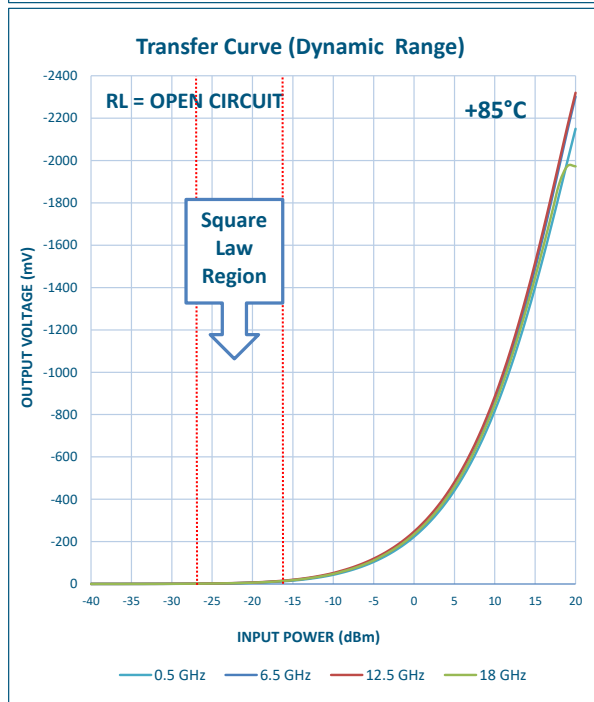
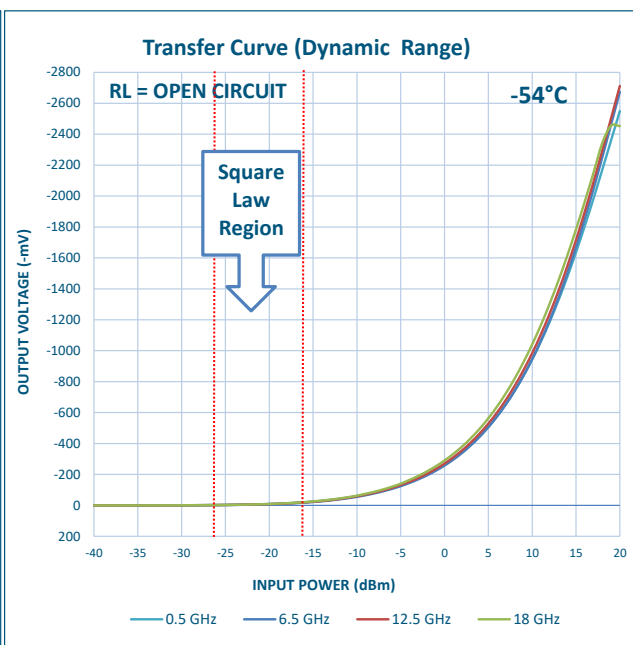
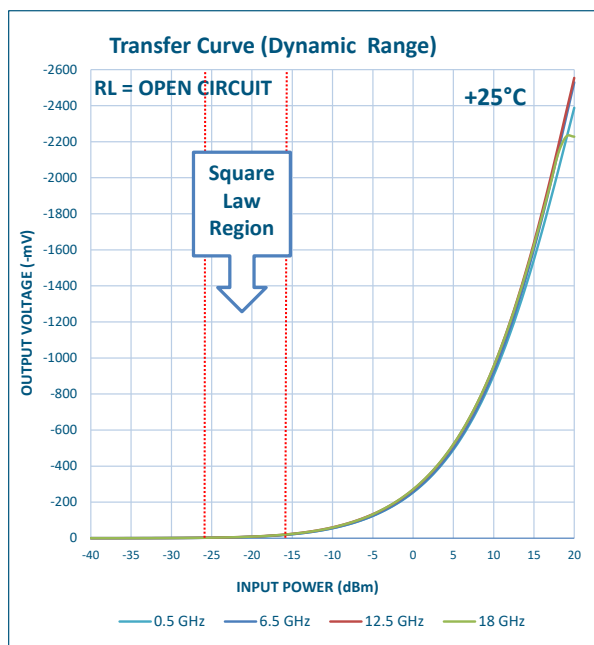
Output voltage measured at 1 MΩ oscilloscope input.

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

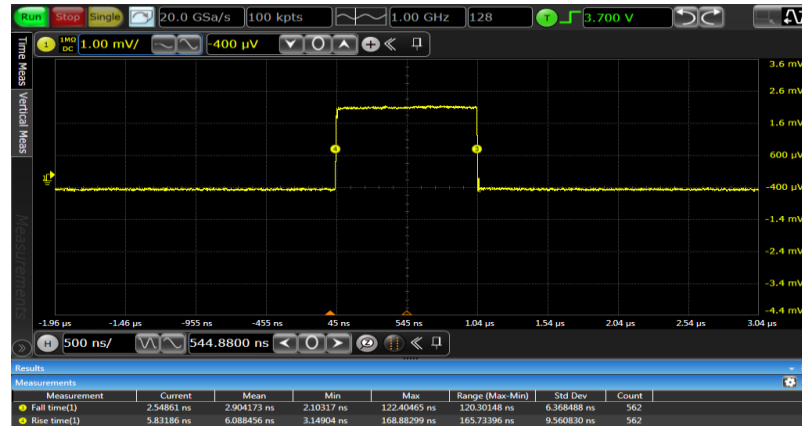
Input Power -15dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 5.3 ns
Fall Time 4.25 ns



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

Rise time 5.8 ns
Fall Time 2.5 ns



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

Rise time 3.5 ns
Fall Time 2.4 ns



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TYPICAL CHARACTERISTICS ON ZBD-0R5G18G-NEG-MF-ROHS

Full Pulse

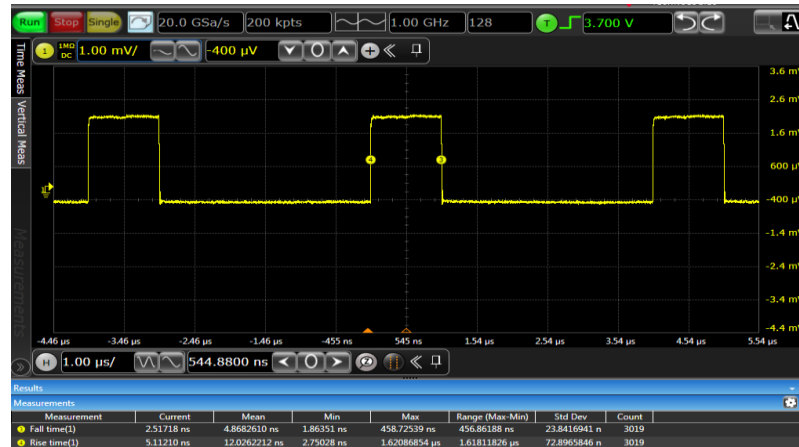
Input Power -15dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 4.7 ns
Fall Time 2.3 ns



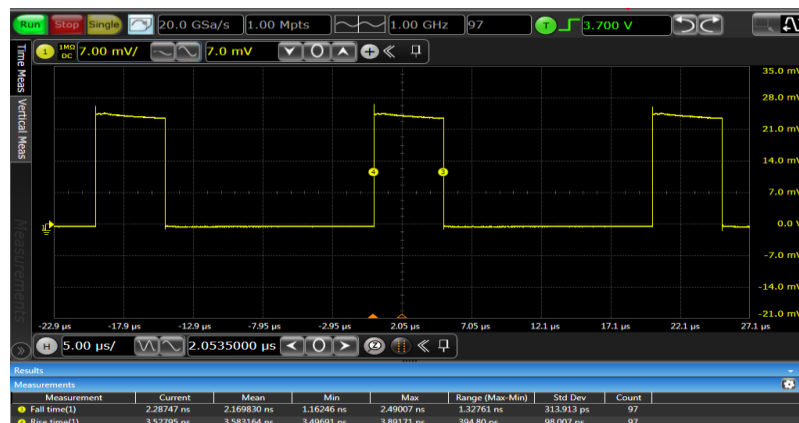
Input Power -10dBm
1 μ s PW, 25% Duty Cycle
50 Ω Load

Rise time 5.11 ns
Fall Time 2.5 ns



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

Rise time 3.5 ns
Fall Time 2.3 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

