



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

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



June 18, 2026

Designed by:

Engineering PMI

Tested and Reported by:

Alfredo Lopez



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OUTLINE DRAWING

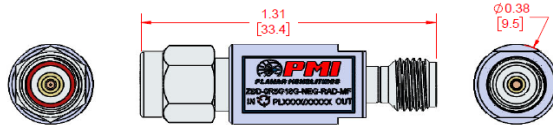
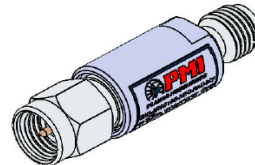
DESCRIPTION:

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

SCALE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE		

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/μW TYP
SQUARE-LAW REGION
(-25 dBm TO -10 dBm)
- POLARITY:..... NEGATIVE
- 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 1MΩ OSCILLOSCOPE INPUT

ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -54°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	 <small>PLANAR MONOLITHICS</small> <small>www.planarmonolithics.com</small>	
DESIGN	VP	3/19/2010	TITLE: OUTLINE	
REVISION			PART NUMBER: ZBD-0R5G18G-NEG-RAD-MF-ROHS	
			REV: 0	REV NO: 27054240
			SCALE: 3:1	SHEET 1 OF 1

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Email: sales@pmi-rf.com



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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.	1.92 :1 See Graph	2 :1 See Graph	1.77 :1 See Graph	
3	Polarity	NEGATIVE	NEGATIVE			
4	Flatness	±3.5 dB Max. Square-law region (-25 to -10 dBm)	±0.3 dB See Graph	±0.37 dB See Graph	±0.58 dB See Graph	
5	Sensitivity	0.5 ± 0.05 mV/μW Typ. Square-law region (-25 to -10 dBm)	0.59 mV/μW (Max).	0.62 mV/μW (Max).	0.53 mV/μW (Max).	
			0.53 mV/μW (Min).	0.55 mV/μW (Min).	0.44 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: 5.5 ns Fall Time: 1.85 ns See Plots			
8	Tangential Sensitivity (TSS):	Not specified	-48 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.

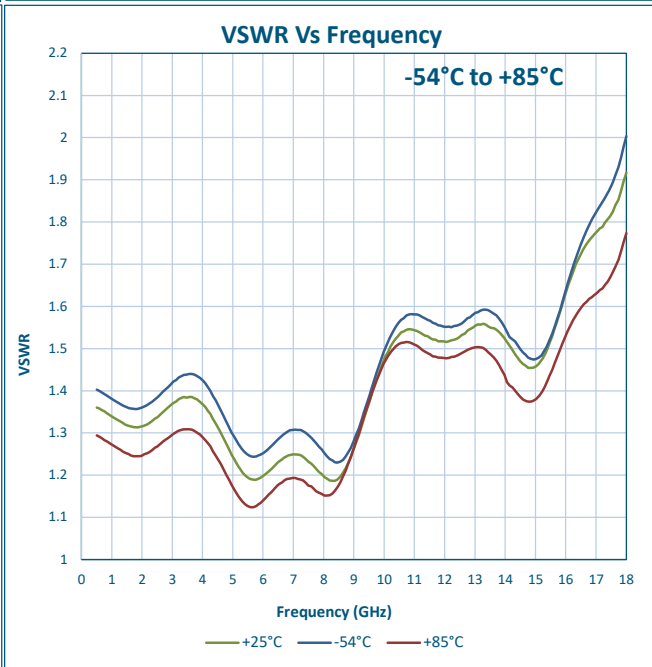
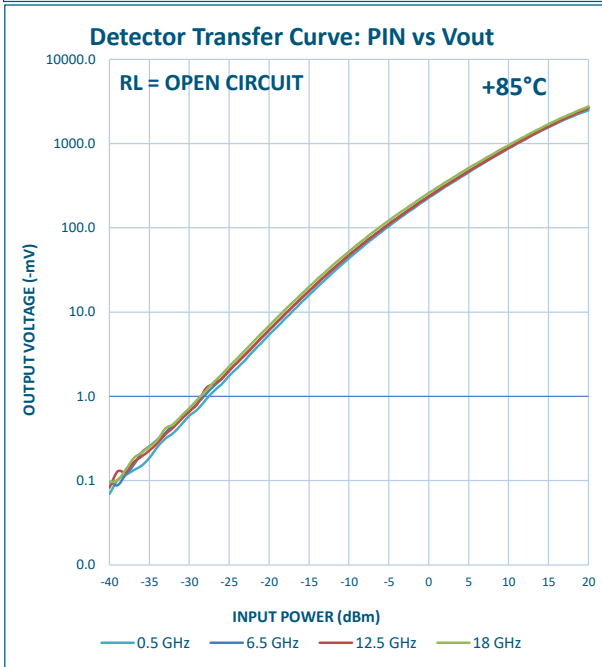
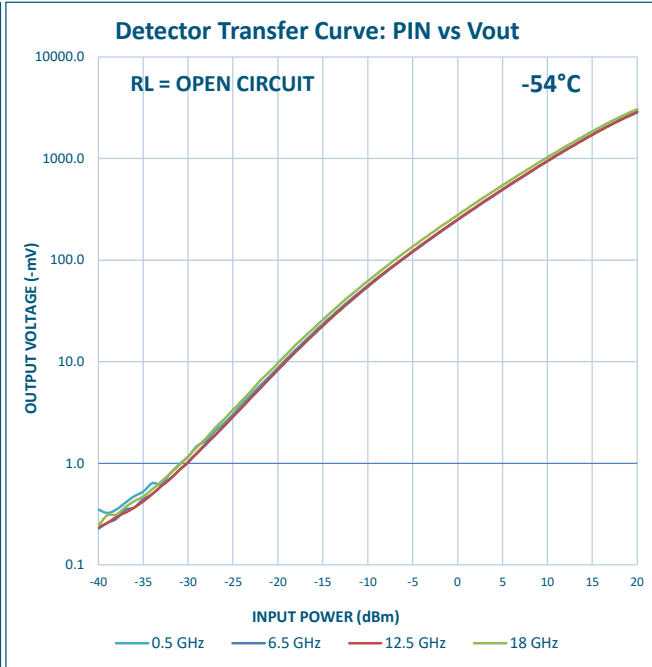
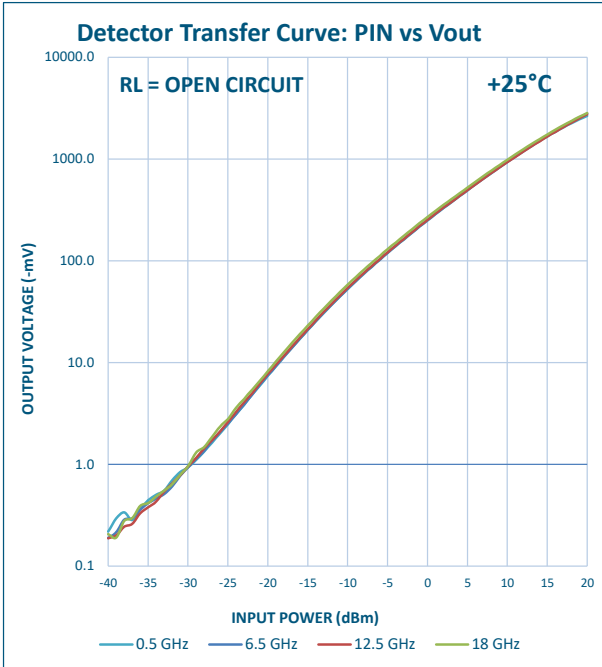
Note 2: Pulsed measurements performed using an external 50 Ω termination through a T-connector for proper pulse shaping.
Output voltage measured at 1 MΩ oscilloscope input.

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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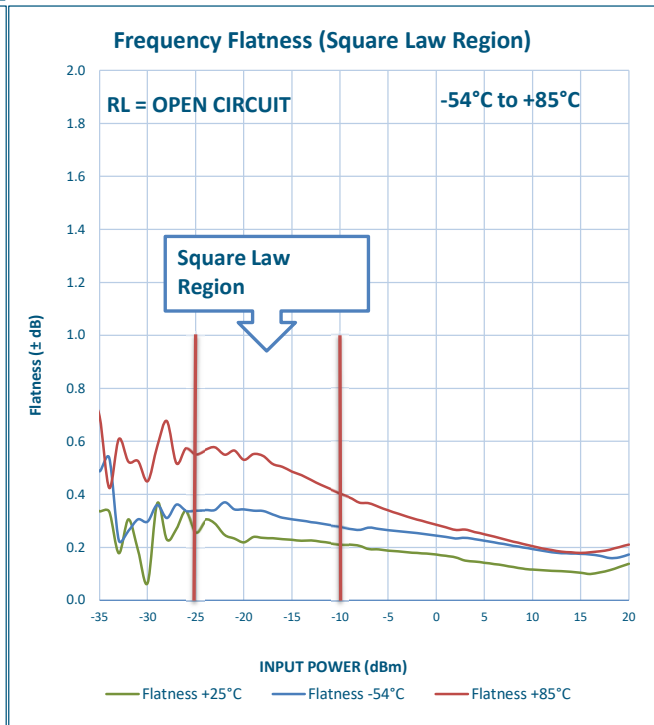
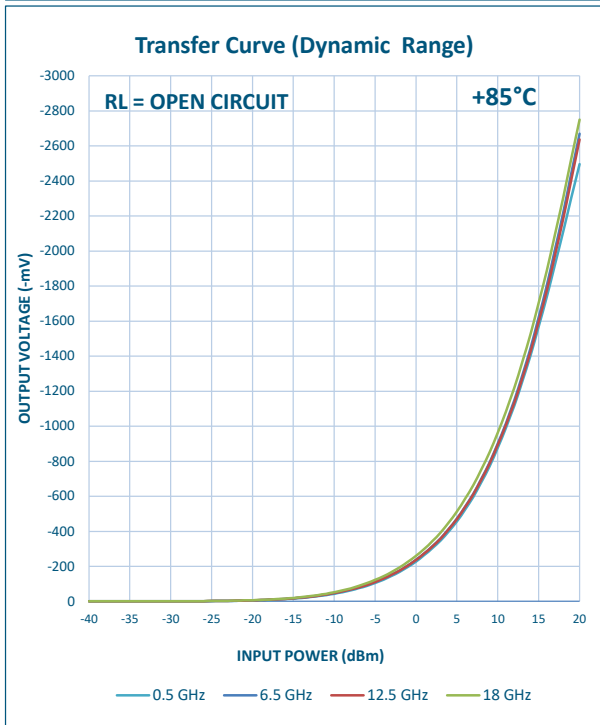
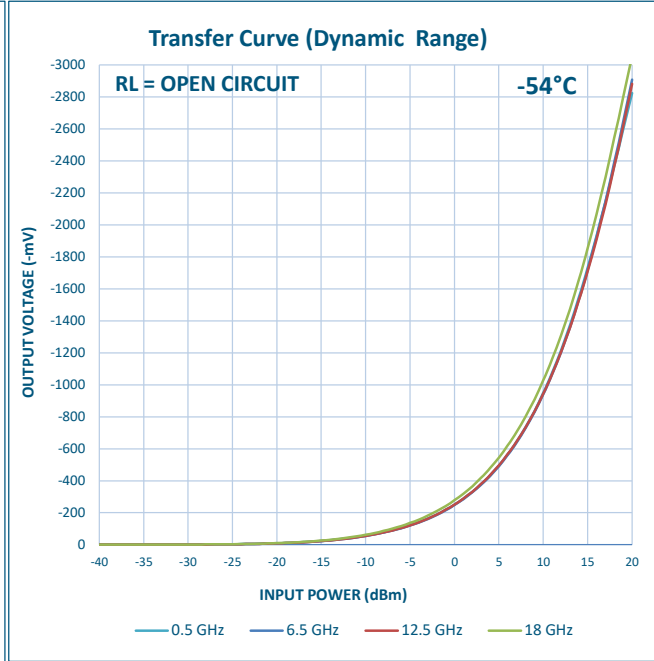
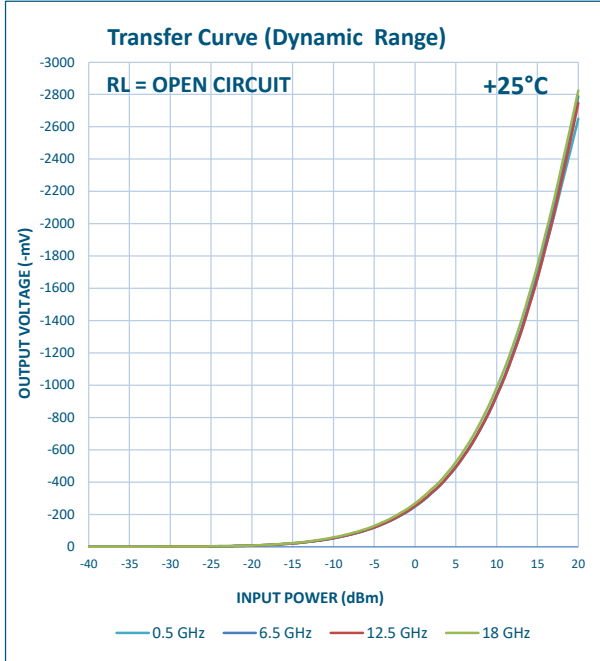
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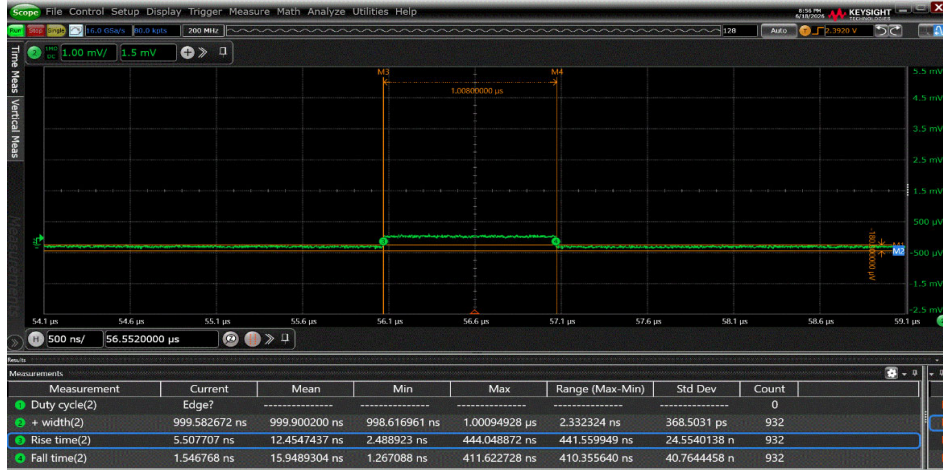


TYPICAL CHARACTERISTICS ON ZBD-0R5G18G-NEG-RAD-MF-ROHS

Rise & Fall time

**Input Power -15dBm
1µs PW, 25% Duty Cycle**

**Rise time 5.5 ns
Fall Time 1.6 ns**



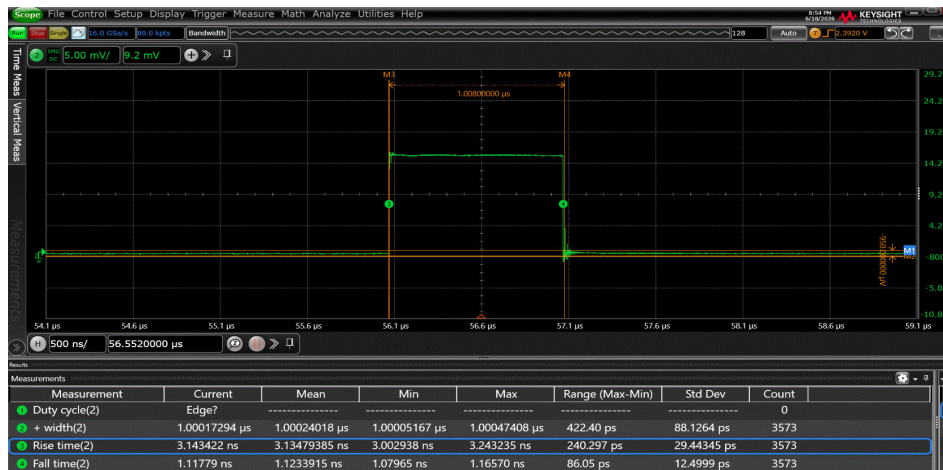
**Input Power -10dBm
1µs PW, 25% Duty Cycle**

**Rise time 3.5 ns
Fall Time 1.85 ns**



**Input Power 0 dBm
5µs PW, 25% Duty Cycle**

**Rise time 3.14 ns
Fall Time 1.11 ns**



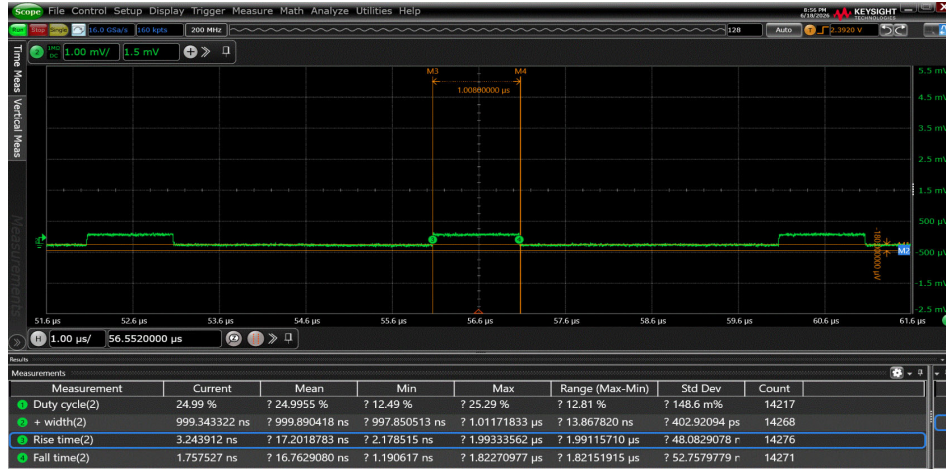
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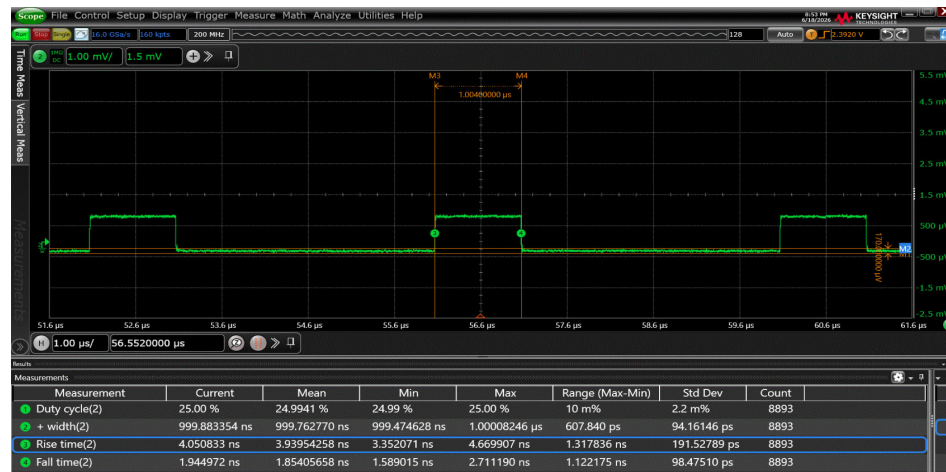
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Full Pulse

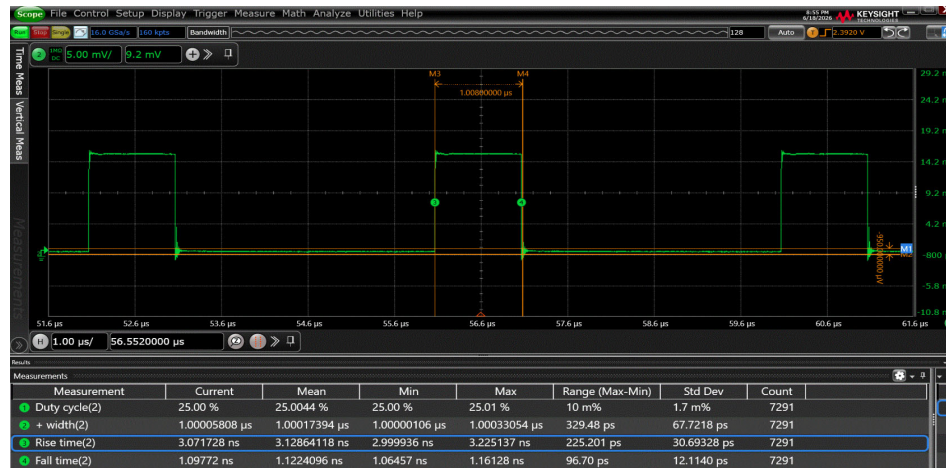
Input Power -15dBm
1µs PW, 25% Duty Cycle



Input Power -10dBm
1µs PW, 25% Duty Cycle



Input Power 0 dBm
5µs PW, 25% Duty Cycle



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

Tangential Sensitivity (TSS)

1 μ s PW, 50% Duty Cycle
Frequency (0.5 to 18 GHz)
Measured value (-48 dBm)

