

**Typical Characteristics
ON
PDT-5G8G-50-515-SFF**

PMI MODEL: PDT-5G8G-50-515-SFF IS A 2-WAY HIGH POWER SWITCH THAT OPERATES OVER THE 5.0 TO 8.0 GHz FREQUENCY RANGE. THIS SWITCH HAS A MAXIMUM INSERTION LOSS OF 2 dB, A MAXIMUM VSWR OF 1.5:1, AND A MINIMUM ISOLATION OF 50 dB. THIS UNIT HAS AN INPUT POWER OF +38 dBm CW OR +50 dBm PEAK.



March 25, 2025

Designed By:

Engineering Quantic PMI

Tested and Reported By:

Alfredo Lopez

Product Feature Page #1

DESCRIPTION:

PMI MODEL: PDT-5G8G-50-515-SFF IS A 2-WAY HIGH POWER SWITCH THAT OPERATES OVER THE 5.0 TO 8.0 GHz FREQUENCY RANGE. THIS SWITCH HAS A MAXIMUM INSERTION LOSS OF 2 dB, A MAXIMUM VSWR OF 1.5:1, AND A MINIMUM ISLATION OF 50 dB. THIS UNIT HAS AN INPUT POWER OF +38 dBm AVERAGE OR +50 dBm PEAK

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1		ORIGINAL RELEASE	8/12/24	
A2		ECN # 25-0049	30/10/24	
B1		ECN # 25-0085	30/09/24	

SPECIFICATIONS:

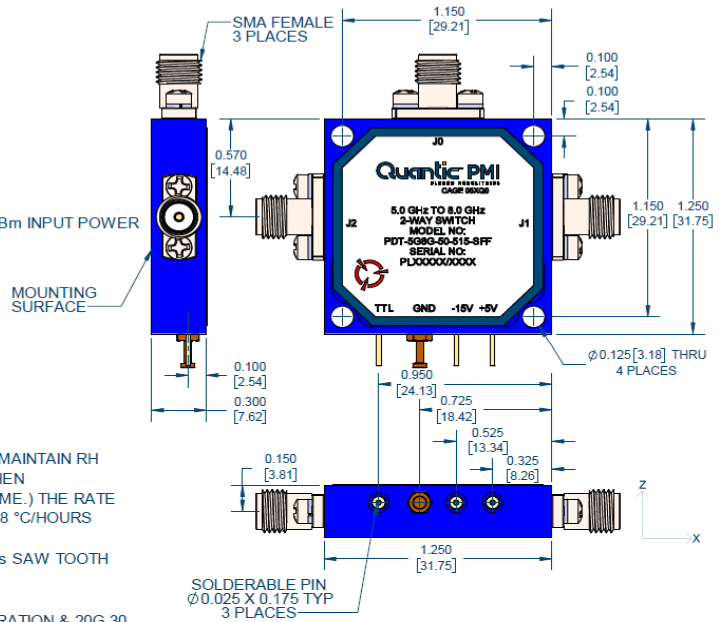
- FREQUENCY RANGE:..... 5.0 TO 8.0 GHz
- INSERTION LOSS:..... 2 dB MAXIMUM
- ISOLATION:..... 50 dB MINIMUM
- INPUT POWER:..... +38 dBm CW, +50 dBm PEAK *
* 1 μs PULSEWIDTH, 1% DUTY CYCLE
- VSWR:..... 1.5:1 MAX, 1.3:1 GOAL
- SWITCHING SPEED:..... 200 ns MAXIMUM
- SUPPLY:..... +5 V @ 100 mA MAXIMUM
-15 V @ 60 mA MAXIMUM
- IM3: (INTERMODULATION DISTORTION)..... -55 dBc MINIMUM (2 TONES @ +16.5 dBm INPUT POWER)
- FINISH:..... BLUE PAINTED
(MOUNTING SURFACE TO BE FREE OF PAINT)

LOGIC CONTROL TTL		
TTL	J0-J1	J0-J2
HIGH	INSERTION LOSS	ISOLATION
LOW	ISOLATION	INSERTION LOSS

ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -54°C TO +95°C (OPERATING)
-65°C TO +125°C (STORAGE)
- HUMIDITY:..... MIL-STD-202, METHOD 103B COND. B MAINTAIN RH 95±4% @ 63°C (ALLOWED RF 85% WHEN TEMPERATURE-DOWN TRANSITION TIME.) THE RATE OF TEMPERATURE CHANGE: ABOVE 8 °C/HOURS
- SHOCK:..... MIL-STD-202, METHOD 213 COND. J 20G (DURING OPERATION) & 125g, 6 ms SAW TOOTH TYPE, 3-AXIS (NO OPERATION)
- VIBRATION:..... MIL-STD-202, METHOD 214 COND. A 12G 30 MIN X, Y, Z-AXIS (DURING OPERATION) & 20G 30 MIN X, Y, Z-AXIS (DURING OPERATION)
- ALTITUDE:..... MIL-STD-202, METHOD 105C COND. B 200 Km (8.47E-7 hPa OR 6.353E-7 torr/DURING OPERATION)
- 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



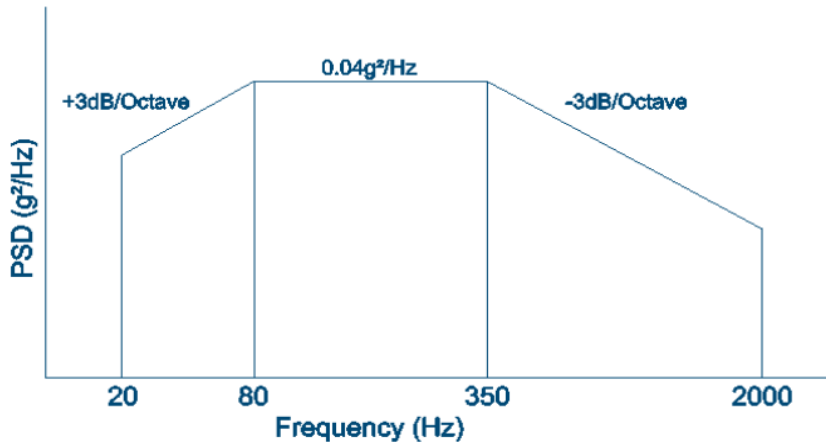
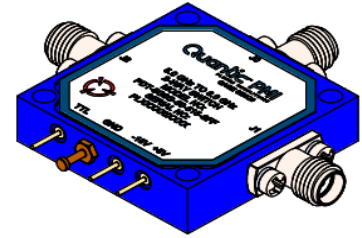
PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS		DATE	TITLE	
DRAWN: D. Hoschar		8/12/24	Outline	
REVISIONS			PDT-5G8G-50-515-SFF	
DESIGNED BY	DATE	REV	FILE NO.	DWG NO.
JAN 2 2024		B	05XQ0	27049040
JAN 2 2024				
SCALE 2:1			SHEET 1 OF 2	

Product Feature Page #2

VIBRATION TESTING PROFILE:

1. VIBRATION DIRECTION IS Z-AXIS
2. VIBRATION FREQUENCY IS RANDOM VIBRATION 20-2000 Hz AND EXCLUDES RESONANCE FREQUENCY OF A TEST ZIG
3. VIBRATION MAGNITUDE IS 6grms, 0.04g²/Hz ±3 dB OCTAVE FOR 10 MINUTES



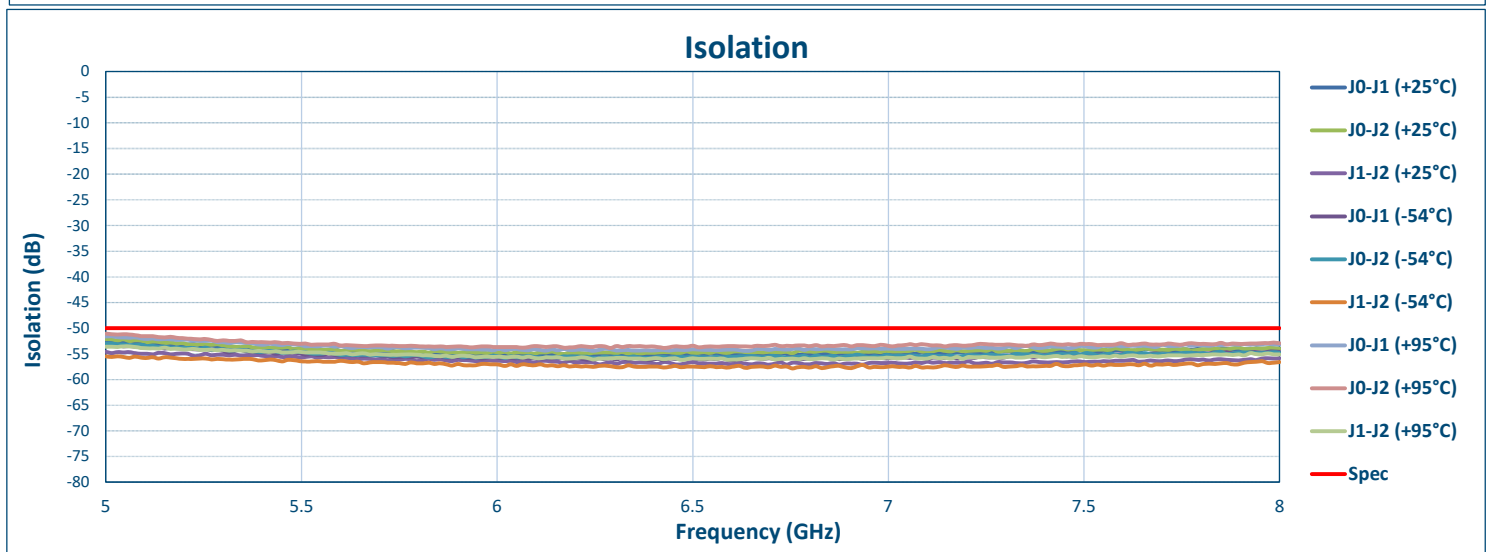
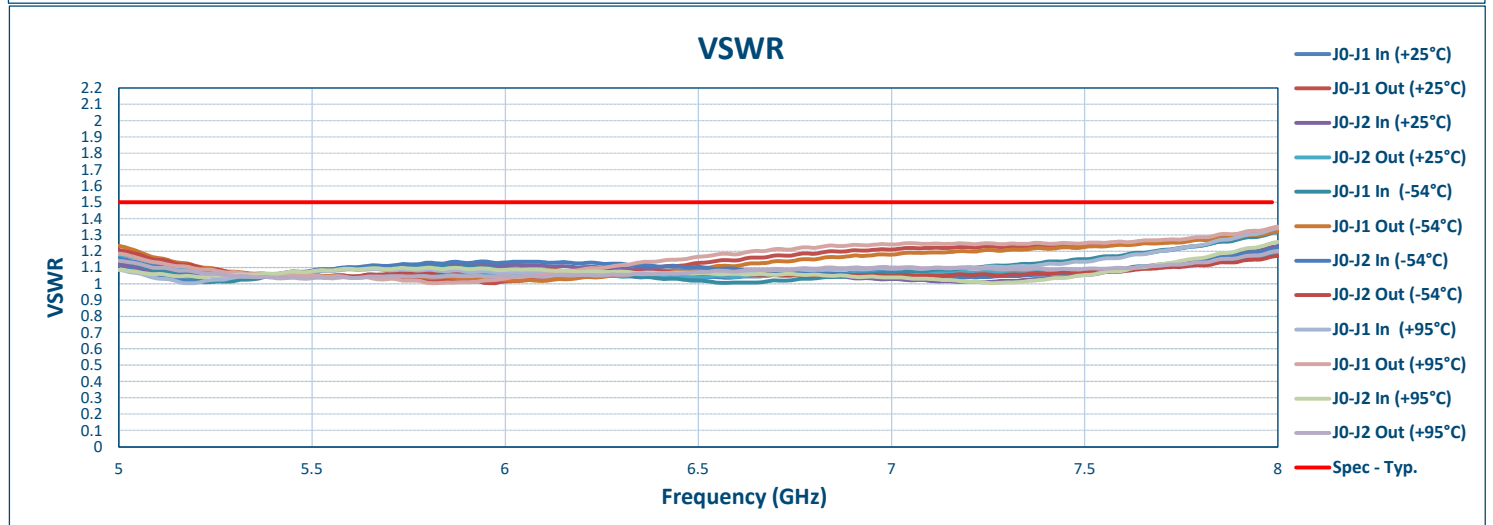
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Quantic PMI PLANAR MONOLITHICS			
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TITLE: Outline			
PDT-5G8G-50-515-SFF			
SIZE: B	PSI/CN: 05XQ0	DRWG NO: 27049040	REV: B1
SCALE: 2:1		SHEET 2 OF 2	

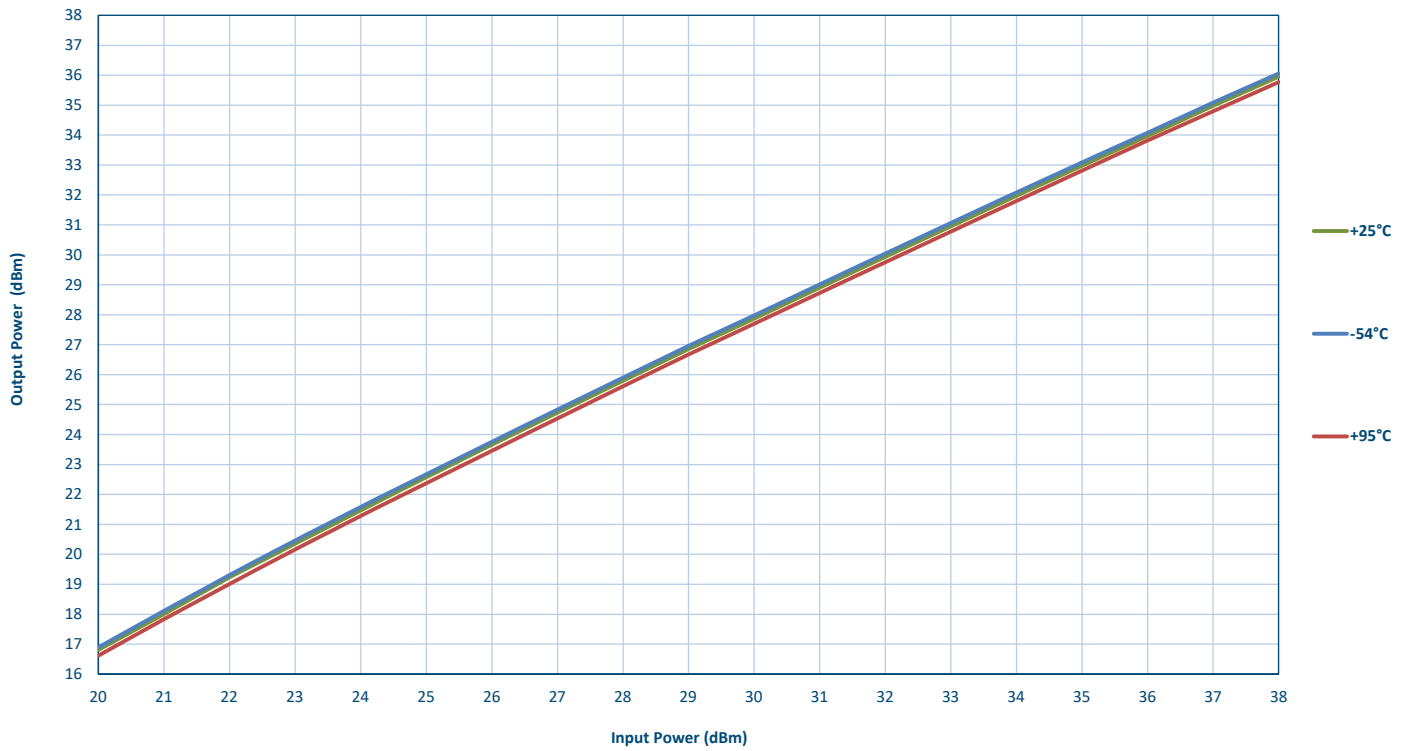
Technical Specifications

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS		
			+25°C	-54°C	+95°C
1	Frequency Range:	5 to 8 GHz	5 to 8 GHz	5 to 8 GHz	5 to 8 GHz
2	Insertion Loss:	2 dB Max.	1.75 dB See Graph	1.66 dB See Graph	1.84 dB See Graph
3	Isolation:	50 dB Min.	52.13 dB See Graph	52.99 dB See Graph	51.1 dB See Graph
4	Input Power:	+38 dBm CW Max. +50 dBm Peak Max. (1 μs PW, 1% Duty Cycle)	Pass +38 dBm CW Pass +50 dBm Peak See Graphs	Pass +38 dBm CW Pass +50 dBm Peak See Graphs	Pass +38 dBm CW Pass +50 dBm Peak See Graphs
5	VSWR: In/Out	1.5:1 Max. 1.3:1 Goal	1.32 :1 (In)	1.32 :1 (In)	1.34 :1 (In)
			1.34 :1 (Out)	1.32 :1 (Out)	1.35 :1 (Out)
			See Graph	See Graph	See Graph
6	Switching Speed:	200 ns Max.	Speed ON -180 ns Speed OFF - 99 ns See Plots		
7	IM3: (Intermodulation Distortion)	-55 dBc Min. (2 Tones +16.5 dBm Input Power)	75.40 dBc See Plot		
8	DC Voltage:	+5 VDC @ 100 mA Max. -15 VDC @ 60 mA Max.	+5 VDC @ 25 mA -15 VDC @ 0 mA	+5 VDC @ 24 mA -15 VDC @ 0 mA	+5 VDC @ 26 mA -15 VDC @ 0 mA

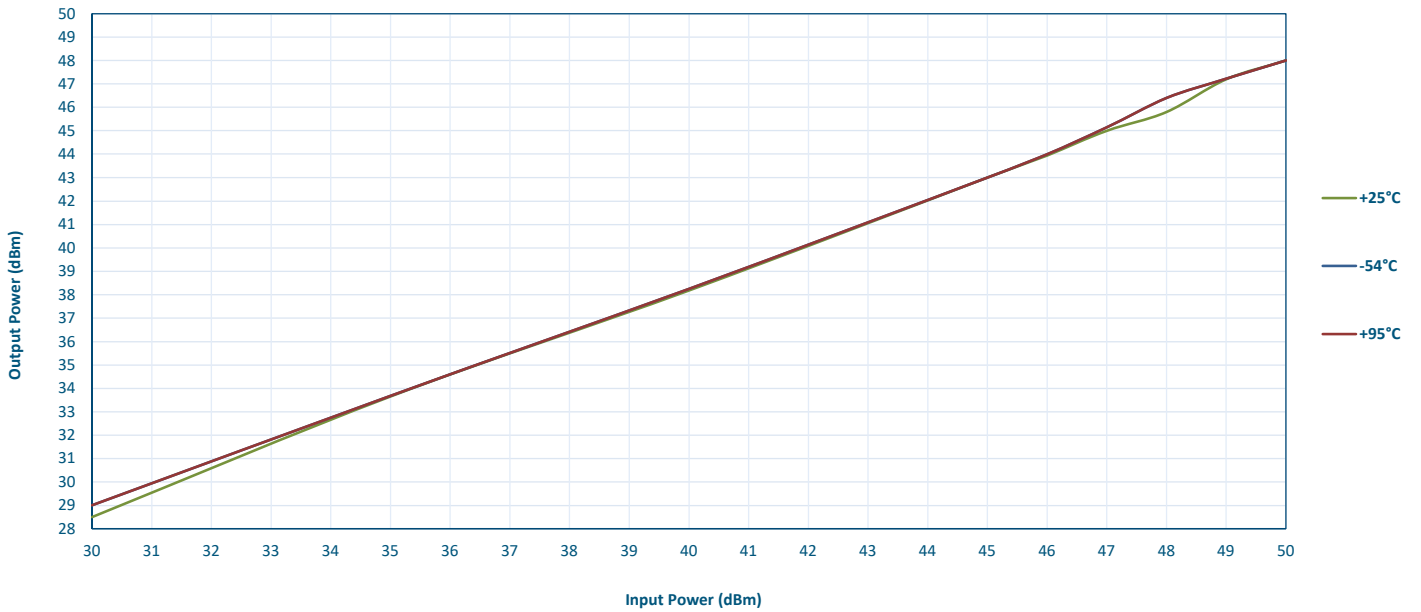


**SUMMARY TEST DATA
ON
PDT-5G8G-50-515-SFF**

High Power Test CW @8 GHz



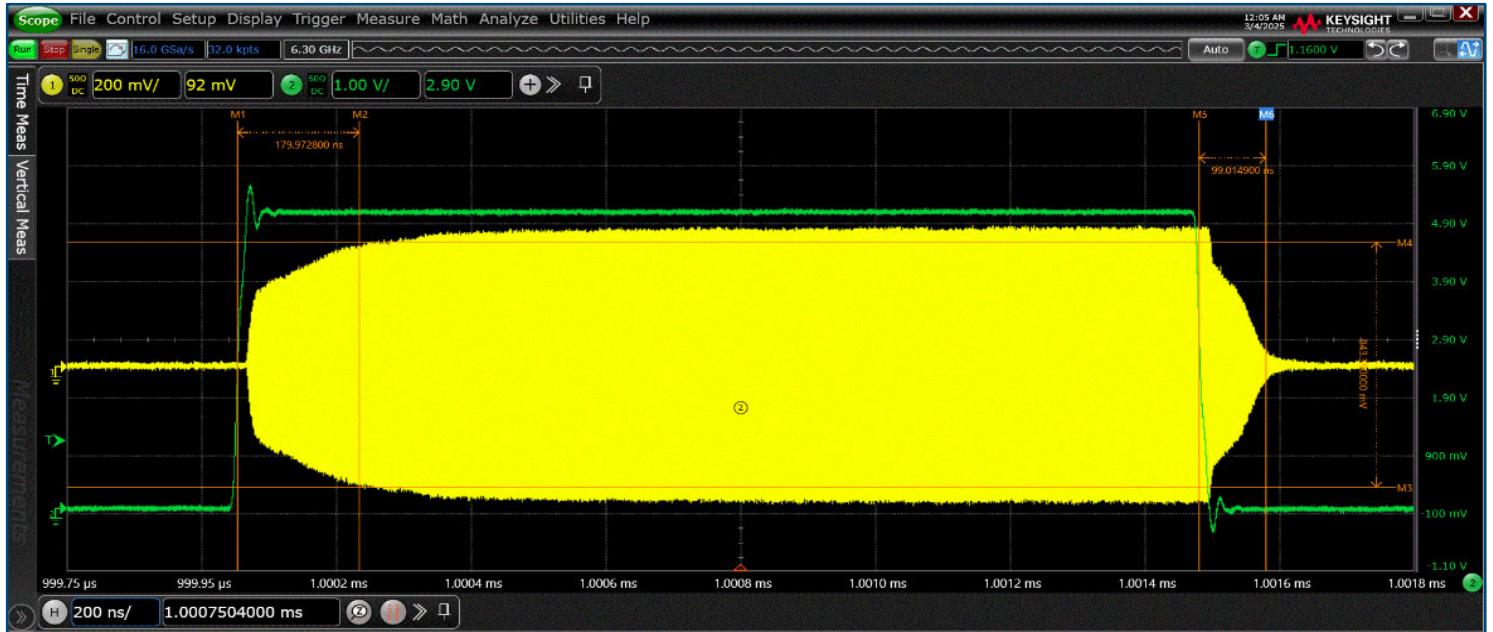
Peak Power Test 8 GHz (1μs PW, Duty Cycle 1%)



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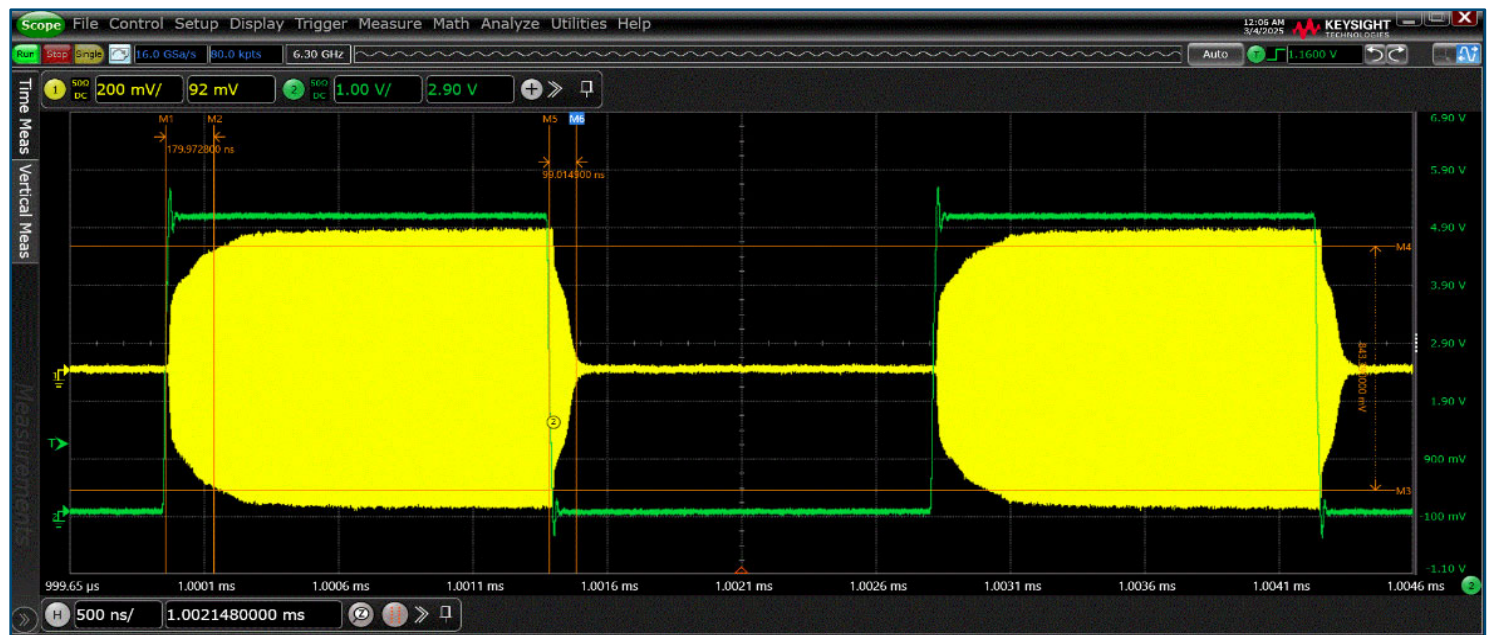
Switching Speed

*Speed ON - 180 ns
Speed OFF - 99 ns
200 ns Per Div.*



Full Pulses

500 ns Per Div.



Green Trace - TTL Signal
Yellow Trace - RF Signal

Typical Characteristics ON PDT-5G8G-50-515-SFF

IM3 (Intermodulation Distortion)

Frequency 6 GHz
Input Power (2 Tones +16.5 dBm Input Power)

