

## TYPICAL CHARACTERISTICS ON P1T-DC18-60-T-SFF-HSLVT-LSC

PMI MODEL P1T-DC18-60-T-SFF-HSLVT-LSC IS A SINGLE POLE, SINGLE THROW, ABSORPTIVE SWITCH WHICH OFFERS ULTRA-LOW VIDEO TRANSIENT PERFORMANCE WHILE PROVIDING ULTRA-FAST SWITCHING SPEED AND HIGH ISOLATION. THIS SWITCH MODULE CONTAINS AN INTEGRAL TTL DRIVER AND THE DC SUPPLY VOLTAGE IS ONLY -5V.



**February 6, 2026**

**Designed By:**

**Engineering PMI**

**Tested and Reported By:**

**Alfredo Lopez**



# TYPICAL CHARACTERISTICS ON P1T-DC18-60-T-SFF-HSLVT-LSC

## Outline Drawing

**DESCRIPTION:**

PMI MODEL P1T-DC18-60-T-SFF-HSLVT-LSC IS A SINGLE POLE, SINGLE THROW, ABSORPTIVE SWITCH WHICH OFFERS ULTRA-LOW VIDEO TRANSIENT PERFORMANCE WHILE PROVIDING ULTRA-FAST SWITCHING SPEED AND HIGH ISOLATION. THIS SWITCH MODULE CONTAINS AN INTEGRAL TTL DRIVER AND THE DC SUPPLY VOLTAGE IS ONLY -5V.

**SPECIFICATIONS:**

- FREQUENCY RANGE:.....DC TO 18 GHz
- INSERTION LOSS:.....4.5 dB MAX
- ISOLATION
  - 10 MHz TO 2 GHz:.....55 dB MIN
  - 2 GHz TO 12 GHz:.....60 dB MIN
  - 12 GHz TO 18 GHz:.....70 dB MIN
- VSWR (IN/OUT):.....2.0:1 MAX
- RISE TIME:.....10 ns MAX
- FALL TIME:.....10 ns MAX
- SPEED ON:.....30 ns MAX
- SPEED OFF:.....25 ns MAX
- VIDEO TRANSIENT
  - 300 MHz BW (2-18 GHz):.....40 mV P-P MAX
  - 20 MHz BW (2-18 GHz):.....25 mV P-P MAX
- POWER INPUT:.....(CW) +20 dBm
- SPEED MATCHING UNIT TO UNIT (PER LOT):.....22 ns MAX
- LEAKAGE TEST (UNIT TO UNITY):.....60 dB MIN (10 MHz TO 1 GHz)  
90 dB MIN (1 TO 18 GHz)
- LEAKAGE TTL PORT:.....60 dB MIN (10 MHz TO 12 GHz)  
70 dB MIN (12 TO 18 GHz)
- SPECTRAL EMISSIONS DURING SWITCHING:.....50 dBm MIN (10 MHz TO 0.5 GHz)  
(SPECTRUM CONTENT) 80 dBm MIN (0.5 TO 18 GHz)  
1.0 kHz VBW/RBW
- CONTROL:.....TTL LOGIC "0" = ON  
TTL LOGIC "1" = OFF
- POWER SUPPLY:.....-5V @ 25 mA MAX
- CONNECTORS
  - RF:.....SMA FEMALE
  - CONTROL:.....SOLDER PIN
- SIZE:.....(L) 1.0" X (W) 1.0" X (H) 0.5"
- WEIGHT:.....1.5 OUNCE TYP
- FINISH:.....GOLD PLATED

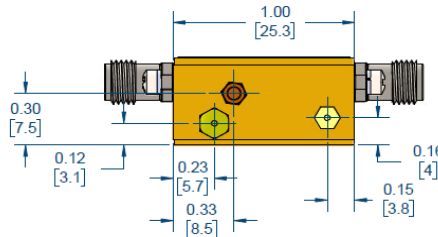
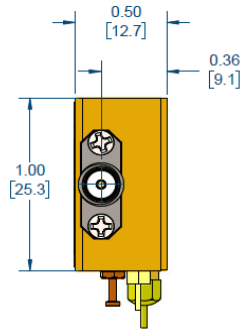
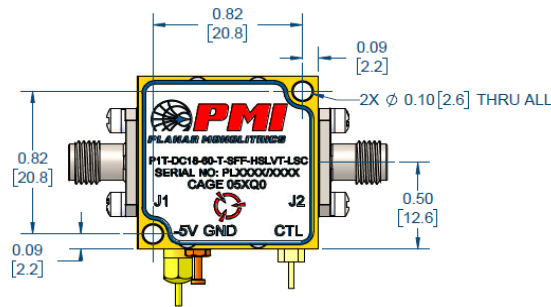
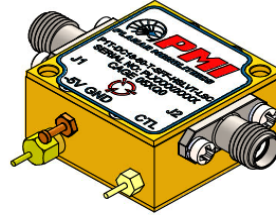
NOTE: \* MORE THAN ONE UNIT

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE:.....-55°C TO +85°C (OPERATING)  
-55°C TO +125°C (STORAGE)
- HUMIDITY:.....MIL-STD-202, METHOD 1038 COND. B
- SHOCK:.....MIL-STD-202, METHOD 2138 COND. B
- VIBRATION:.....MIL-STD-202, METHOD 204D COND. B
- ALTITUDE:.....MIL-STD-202, METHOD 105C 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

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	2/4/2008	



PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS		DATE	TITLE	
DESIGNED	G. MENDEZ	2/4/08	OUTLINE	
REVIEWED			P1T-DC18-60-T-SFF-HSLVT-LSC	
SIZE	B	FORM NO.	05XQ0	27054501
SCALE	2:1	REV.		A1
			SHEET 1 OF 1	

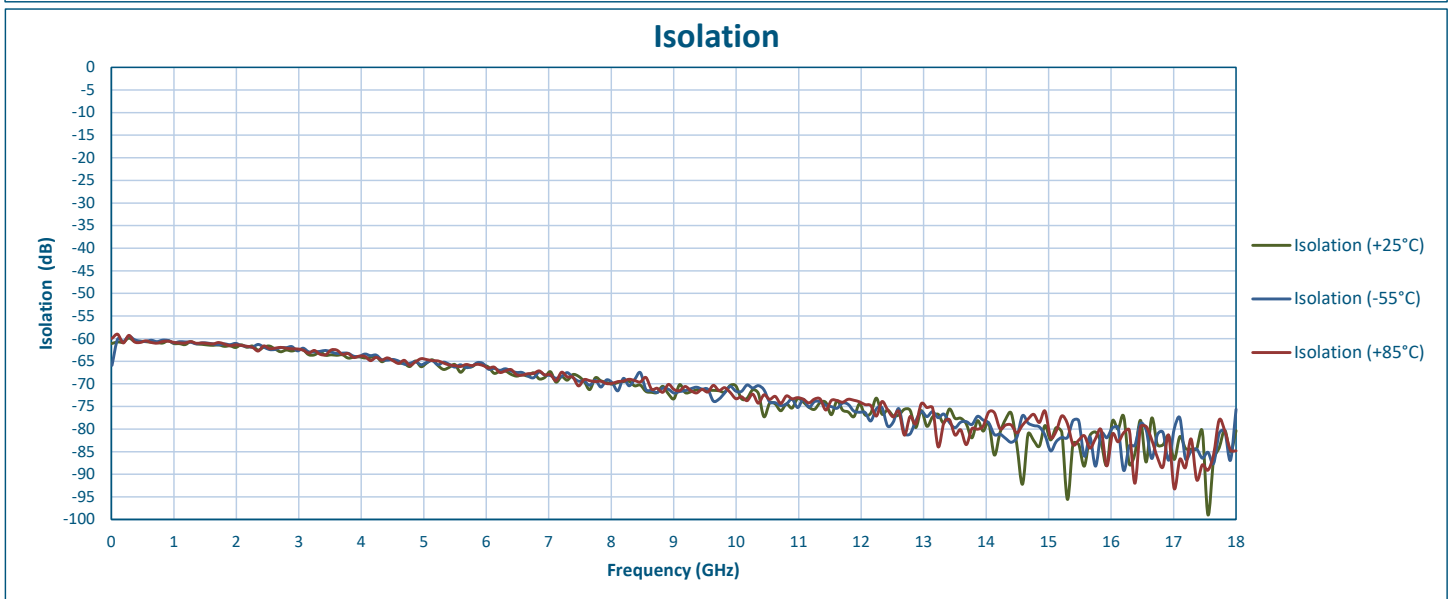
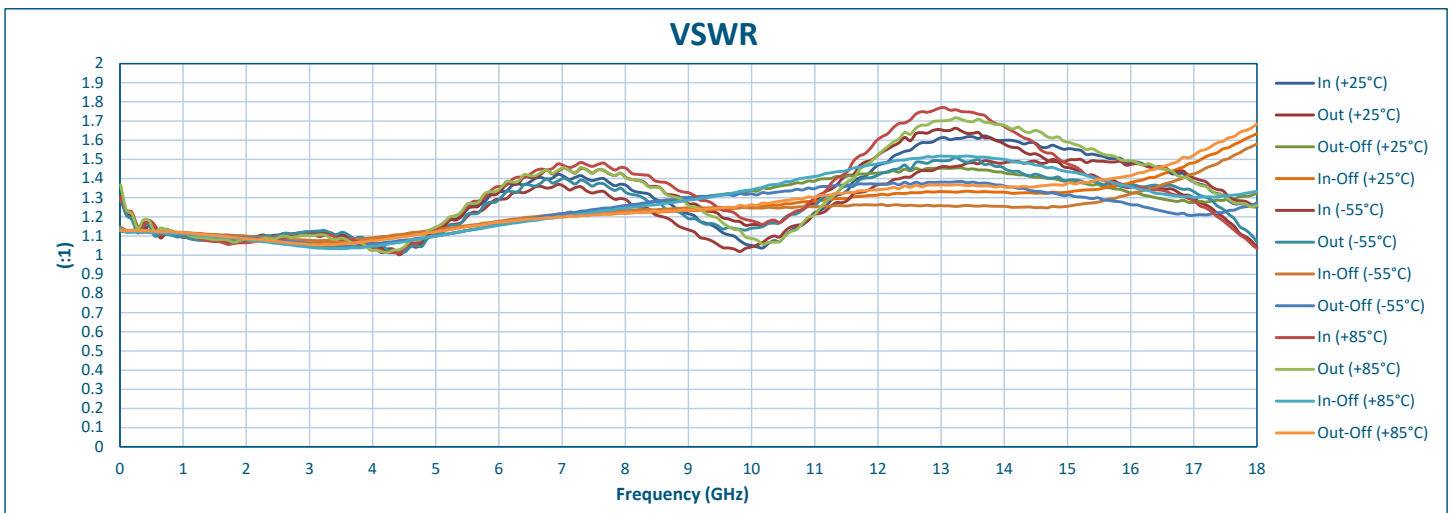
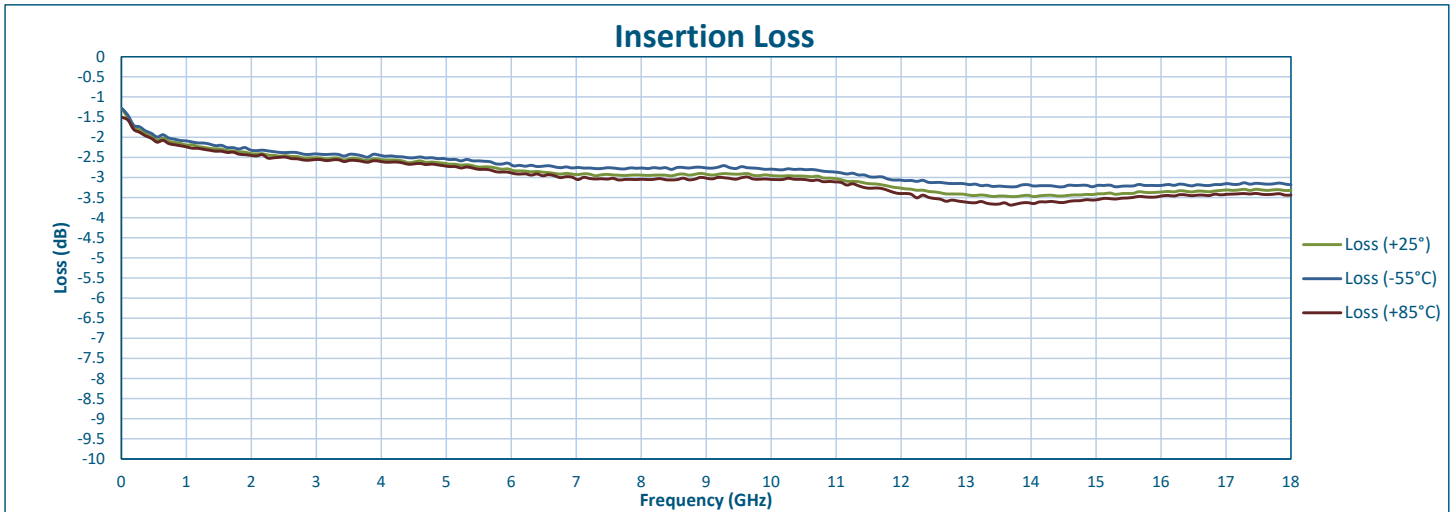
# TYPICAL CHARACTERISTICS

## P1T-DC18-60-T-SFF-HSLVT-LSC

### Technical Specifications

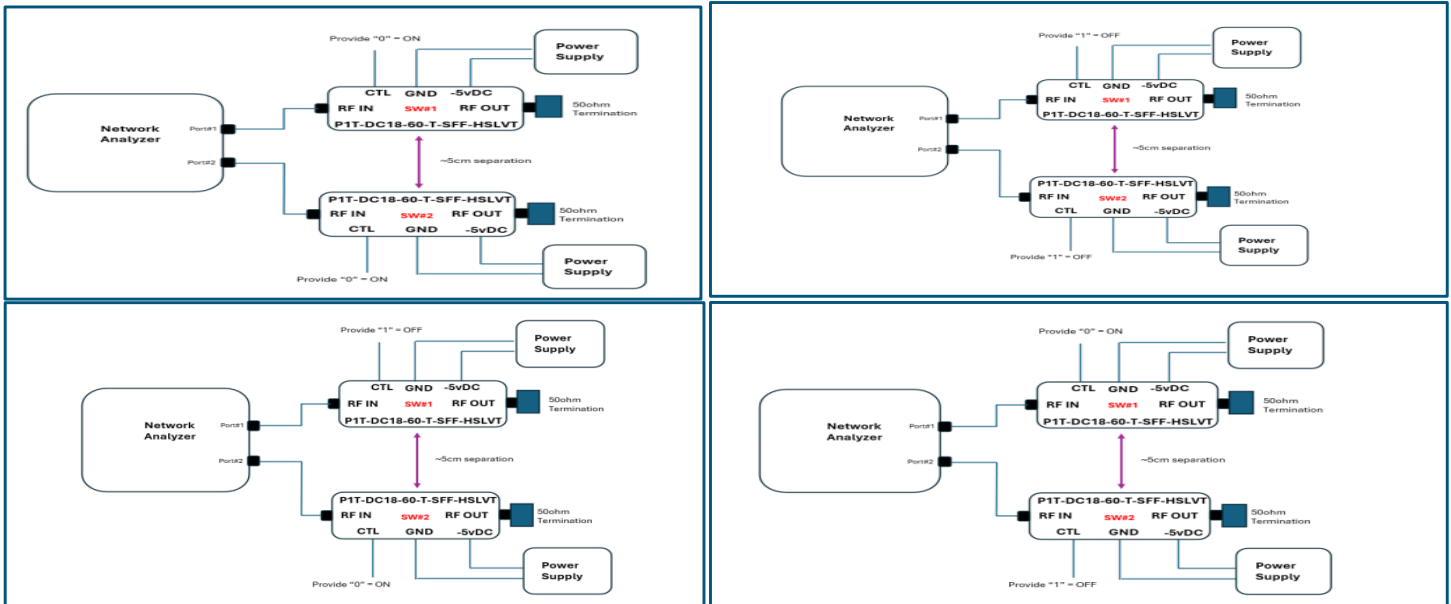
TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS		
			+25°C	-55°C	+85°C
1	Frequency Range:	DC to 18 GHz	DC to 18 GHz	DC to 18 GHz	DC to 18 GHz
2	Insertion Loss:	4.5 dB Max.	3.48 dB See Graph	3.23 dB See Graph	3.69 dB See Graph
3	Isolation:	55 dB Min. (10 MHz-2GHz) 60 dB Min. (2-12 GHz) 70 dB Min. (12-18 GHz)	59.87 dB	59.46 dB	59.02 dB
			61.37 dB	61.05 dB	61.37 dB
			73.16 dB	75.26 dB	73.92 dB
			See Graphs	See Graphs	See Graphs
4	Leakage Test (Unit to Unit):*	60 dB Min. (10 MHz-1 GHz) 90 dB Min. (1 - 18 GHz)	60.74 dB	/	/
			104.29 dB See Graphs		
5	Leakage TTL Port:	60 dB Min (10 MHz-12 GHz) 70 dB Min (12-18 GHz)	64.92 dB	/	/
			80.67 dB See Graph		
6	Speed Matching: (Unit to Unit Per Lot)	±2 ns Max.	1.2 ns See Plots	/	/
7	VSWR: In/Out	2.0:1 Max.	1.66 :1 See Graphs	1.58 :1 See Graphs	1.77 :1 See Graphs
8	Rise time: Fall time: Speed ON: Speed OFF:	10 ns Max. 10 ns Max. 30 ns Max. 25 ns Max.	5.33 ns	/	/
			3.98 ns		
			29.2 ns		
			19.2 ns		
			See Plots		
9	Spectral Emissions During Switching: (Spectrum Content)	50 dBm Min. (10 MHz to 0.5 GHz) 80 dBm Min. (0.5 to 18 GHz) 1.0 kHz VBW/RBW	52.95 dBm	/	/
			90.55 dBm		
			See Plots		
10	Video Transients:	40 mV P-P (300 MHz BW) 25 mV P-P (20 MHz BW)	31.7 mV	/	/
			16.8 mV		
			See Plots		
11	Control Signal:	TTL LOGIC '0' : Insertion Loss '1' : Isolation	TTL LOGIC '0' : Insertion Loss '1' : Isolation		
12	Power Supply:	-5 V @ 25 mA Max.	-5 V @ 16 mA	-5 V @ 15 mA	-5 V @ 17 mA

# TYPICAL CHARACTERISTICS ON P1T-DC18-60-T-SFF-HSLVT-LSC

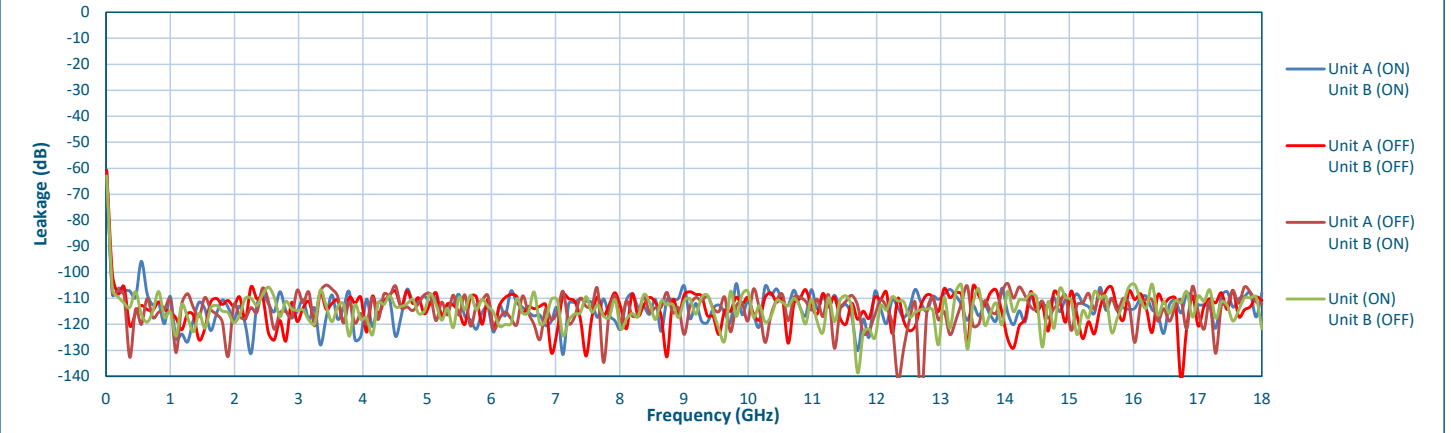


# TYPICAL CHARACTERISTICS ON P1T-DC18-60-T-SFF-HSLVT-LSC

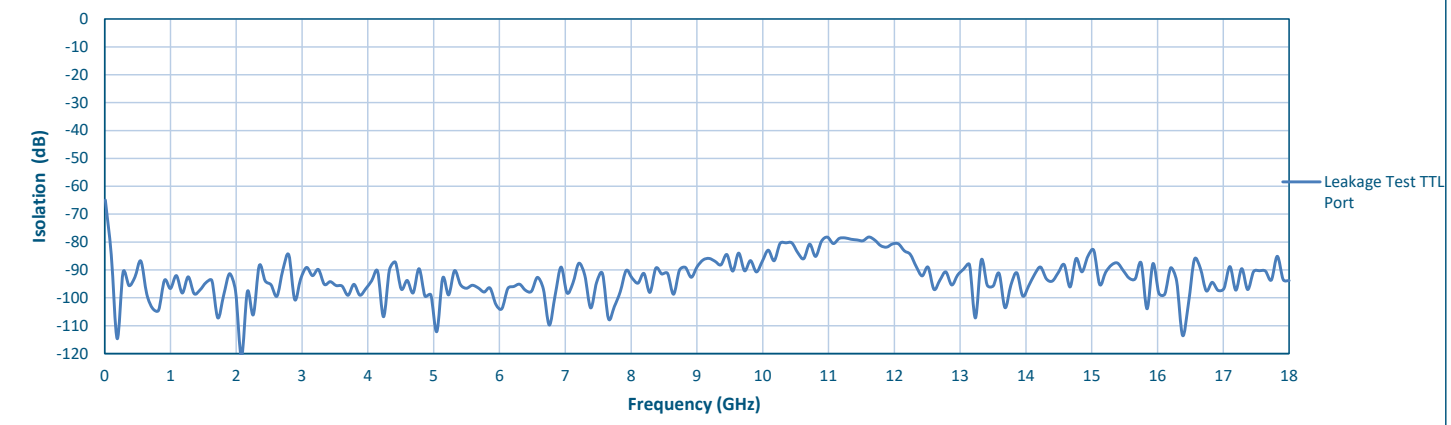
## Leakage Test Configuration



## Leakage Test (Unit to Unit)



## Leakage Test TTL Port



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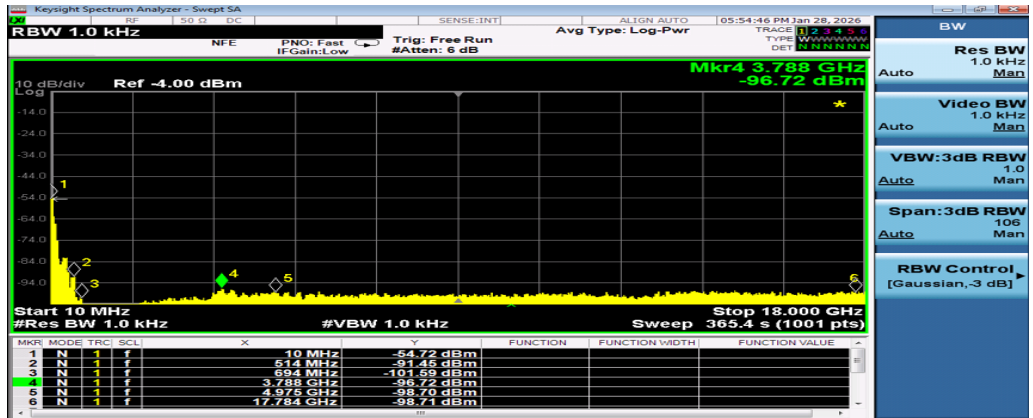
## Spectral Emissions During Switching (Spectrum Content)

### Pulse Parameters

PW - 60 ns

PRI - 280 ns

Frequency - 3.57 MHz

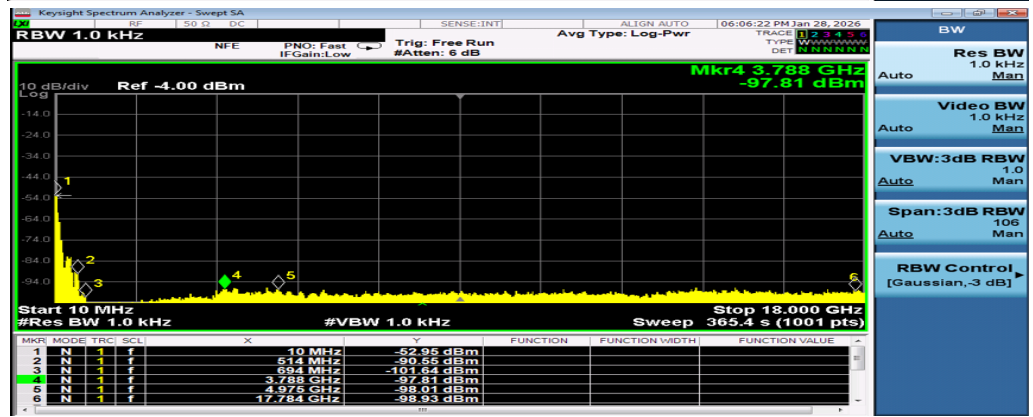


### Pulse Parameters

PW - 100 ns

PRI - 280 ns

Frequency - 3.57 MHz

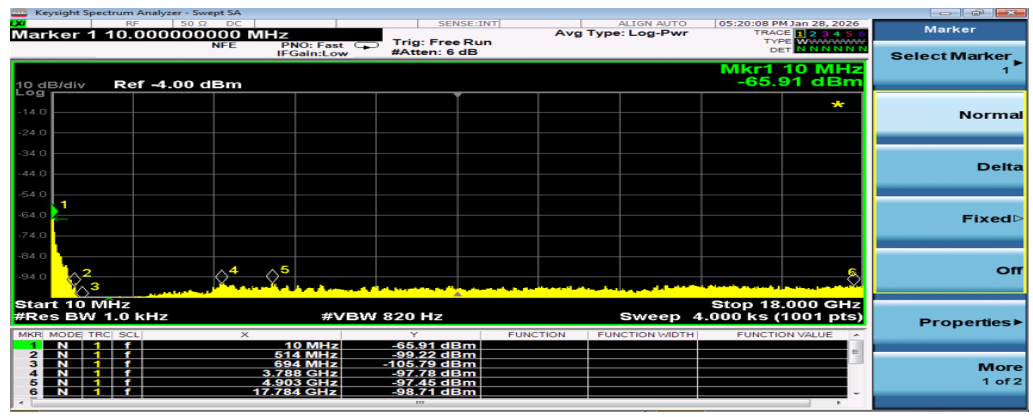


### Pulse Parameters

PW - 50 ns

PRI - 700 ns

Frequency - 1.43 MHz

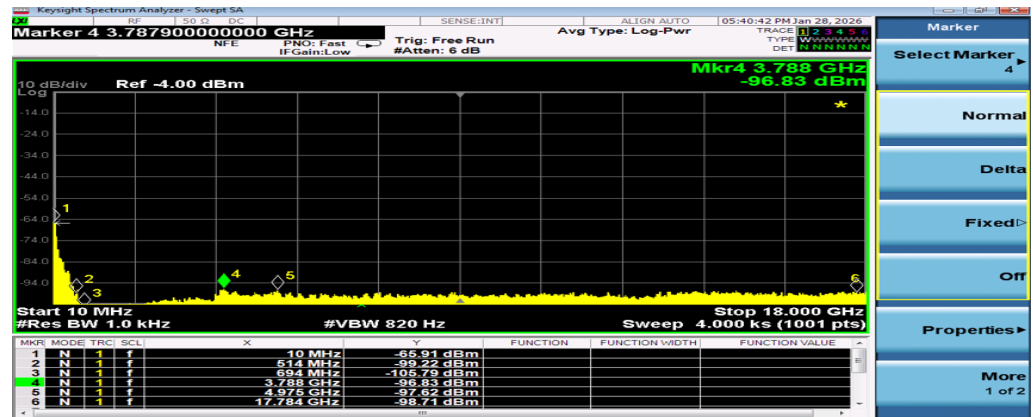


### Pulse Parameters

PW - 300 ns

PRI - 700 ns

Frequency - 1.43 MHz



# TYPICAL CHARACTERISTICS ON P1T-DC18-60-T-SFF-HSLVT-LSC

## Switching Speed

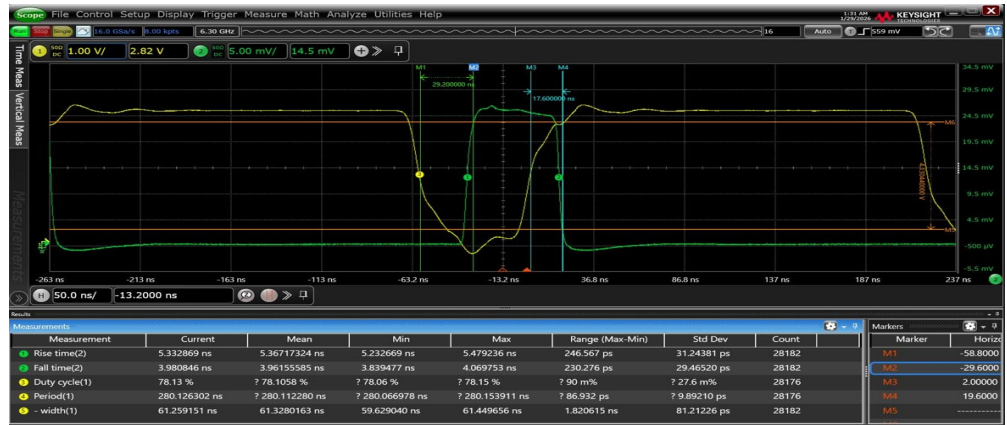
### Pulse Parameters

PW - 60 ns

PRI - 280 ns

Frequency - 3.57 MHz

Rise time	5.33 ns
Fall time	3.98 ns
Speed ON	29.20 ns
Speed OFF	17.60 ns



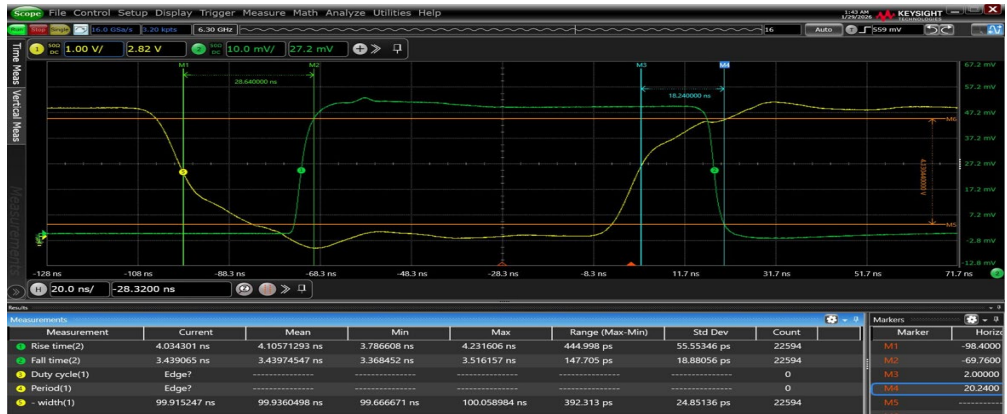
### Pulse Parameters

PW - 100 ns

PRI - 280 ns

Frequency - 3.57 MHz

Rise time	4.03 ns
Fall time	3.43 ns
Speed ON	28.64 ns
Speed OFF	18.24 ns



### Pulse Parameters

PW - 50 ns

PRI - 700 ns

Frequency - 1.43 MHz

Rise time	4.75 ns
Fall time	3.61 ns
Speed ON	28.80 ns
Speed OFF	19.20 ns



### Pulse Parameters

PW - 300 ns

PRI - 700 ns

Frequency - 1.43 MHz

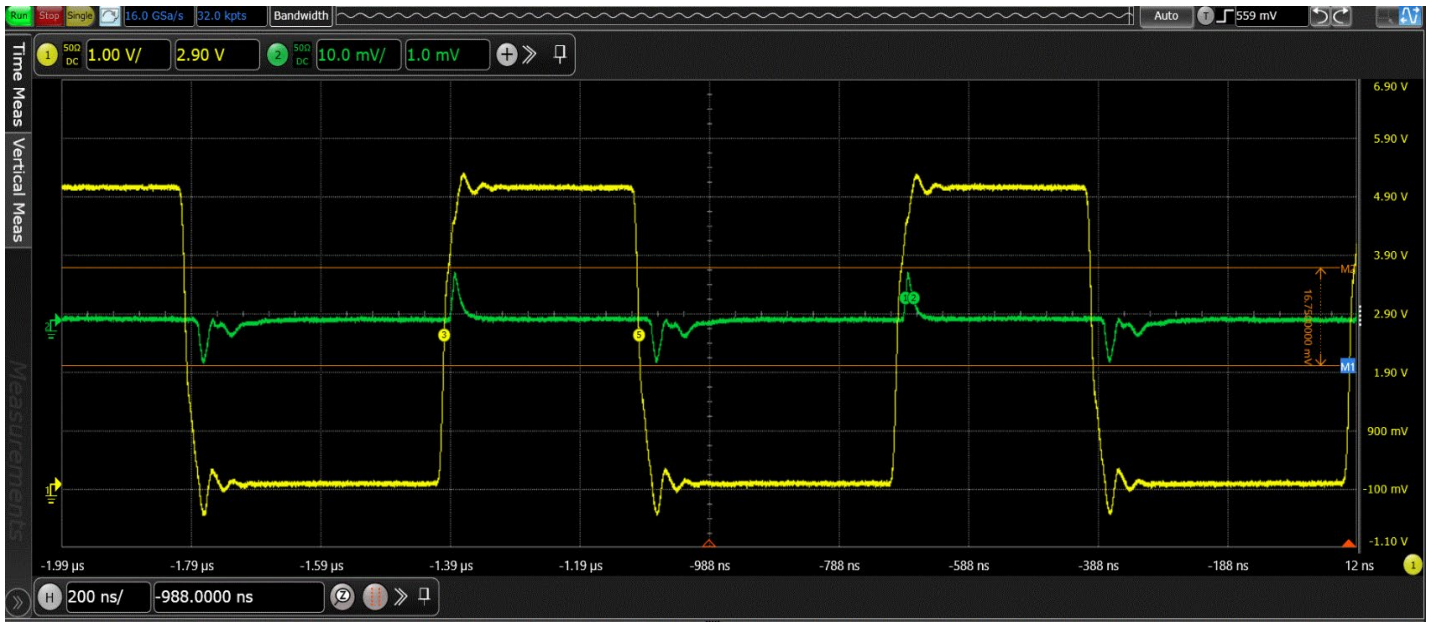
Rise time	5.05 ns
Fall time	3.68 ns
Speed ON	28.0 ns
Speed OFF	18.40 ns



Yellow Trace - TTL  
Green Trace - RF Signal

# TYPICAL CHARACTERISTICS ON P1T-DC18-60-T-SFF-HSLVT-LSC

## Video Transients 20 MHz BW



## Video Transients 300 MHz BW

