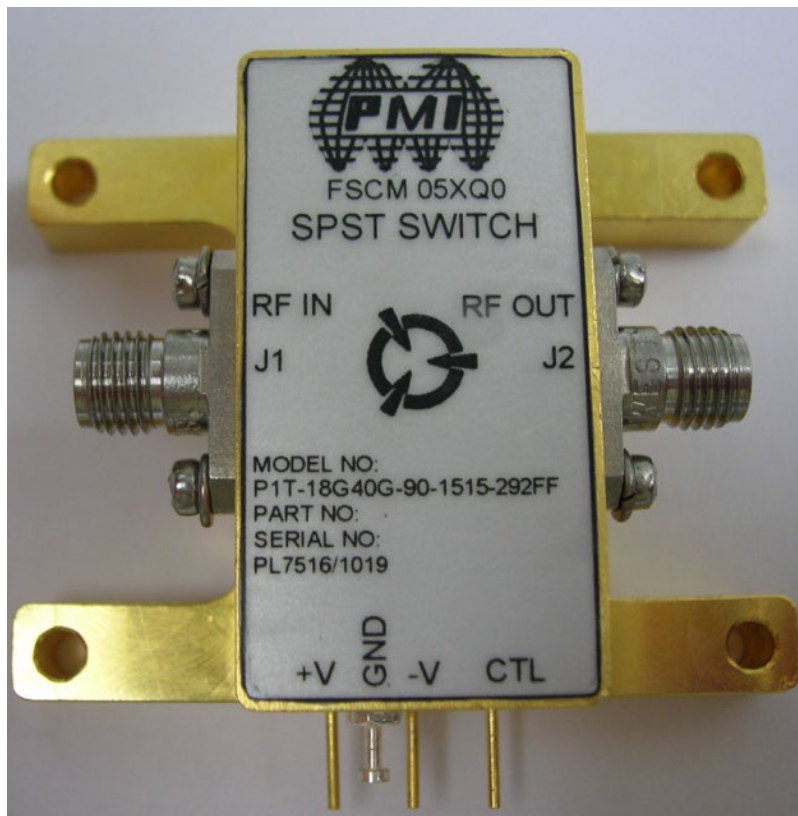




**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

**PMI MODEL P1T-18G40G-90-1515-292FF IS AN ABSORPTIVE, HIGH SPEED,  
SINGLE POLE SINGLE THROW SWITCH CAPABLE OF SWITCHING WITHIN  
15 TO 25 ns. THE FREQUENCY RANGE IS 18 TO 40 GHz. THIS SWITCH  
HAS > 90 dB ISOLATION.**



**January 30, 2014**

**Designed By: Paul Kuhn**

**Tested & Reported By:  
Lee McGraw & Sebastian Palacio**



## TYPICAL CHARACTERISTICS ON P1T-18G40G-90-1515-292FF

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	2/22/10	
	B1	CHANGED SIZE	3/17/10	
	B2	ECN # 13-0041	5/09/13	
	B3	ECN # 13-0111	08/11/13	

**DESCRIPTION**  
 PMI MODEL P1T-18G40G-90-1515-292FF IS AN ABSORPTIVE, HIGH SPEED, SINGLE POLE SINGLE THROW SWITCH CAPABLE OF SWITCHING WITHIN 15 TO 25 ns. THE FREQUENCY RANGE IS 18 TO 40 GHz. THIS SWITCH HAS > 90 dB ISOLATION.

**SPECIFICATIONS**

- FREQUENCY RANGE:.....18 TO 40 GHz
- ISOLATION:.....90 dB MIN
- INSERTION LOSS:.....5.0 dB MAX
- VSWR IN / OUT:.....2:1 MAX, 1.5:1 GOAL
- INPUT POWER:.....+23 dBm CW MAX
- RF SWITCHING SPEED:.....25 ns MAX  
(10% TO 90% RF) 15 ns GOAL
- DC VOLTAGE:.....±15 V @ 100mA
- CONTROL SIGNAL:.....0 VDC ON  
+5 VDC OFF
- CONNECTORS IN/OUT:.....2.92 mm (F)
- FINISH:.....Gold Plated

PMI CONFIDENTIAL AND PROPRIETARY

**ENVIRONMENTAL RATINGS**

- TEMPERATURE:.....-40°C TO +85°C (OPERATING)  
-55°C TO +125°C (STORAGE)
- HUMIDITY:.....MIL-STD-202F, METHOD 103B COND. B
- SHOCK:.....MIL-STD-202F, METHOD 213B COND. B
- VIBRATION:.....MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE:.....MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE:.....MIL-STD-202F, METHOD 107D COND. A

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

ALL DIMENSIONS ARE IN INCHES  
 TOLERANCES:  
 X.XX ±0.020  
 X.XXX ±0.010

**PLANAR MONOLITHICS INDUSTRIES, INC.**

7311-F GROVE ROAD  
 FREDERICK, MARYLAND 21704 USA  
 TEL: 301-662-5019 FAX: 301-662-1731  
 WEBSITE: [www.pmi-rf.com](http://www.pmi-rf.com)  
 E-MAIL: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)  
 ISO 9001 CERTIFIED

APPROVALS	DATE	TITLE
DRN: PJK	3/17/10	PRODUCT FEATURE P1T-18G40G-90-1515-292FF
CRD: [ ]		SIZE: FROM NO. [ ] DWG NO. 27012221 REV. B3
ISS: [ ]		SCALE: N:S SHEET 1 OF 1

TEST ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range:	18 GHz – 40 GHz	18 GHz – 40 GHz See Plots	
2	Insertion Loss:	5.0 dB Max	4.36dB See Plots	
3	Isolation:	90 dB Min.	99dB See Plots	
4	VSWR: (IN/OUT)	1.5:1 Goal. 2.0:1 Max.	1.66:1 See Plots	

7311-F Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731  
 Email: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)



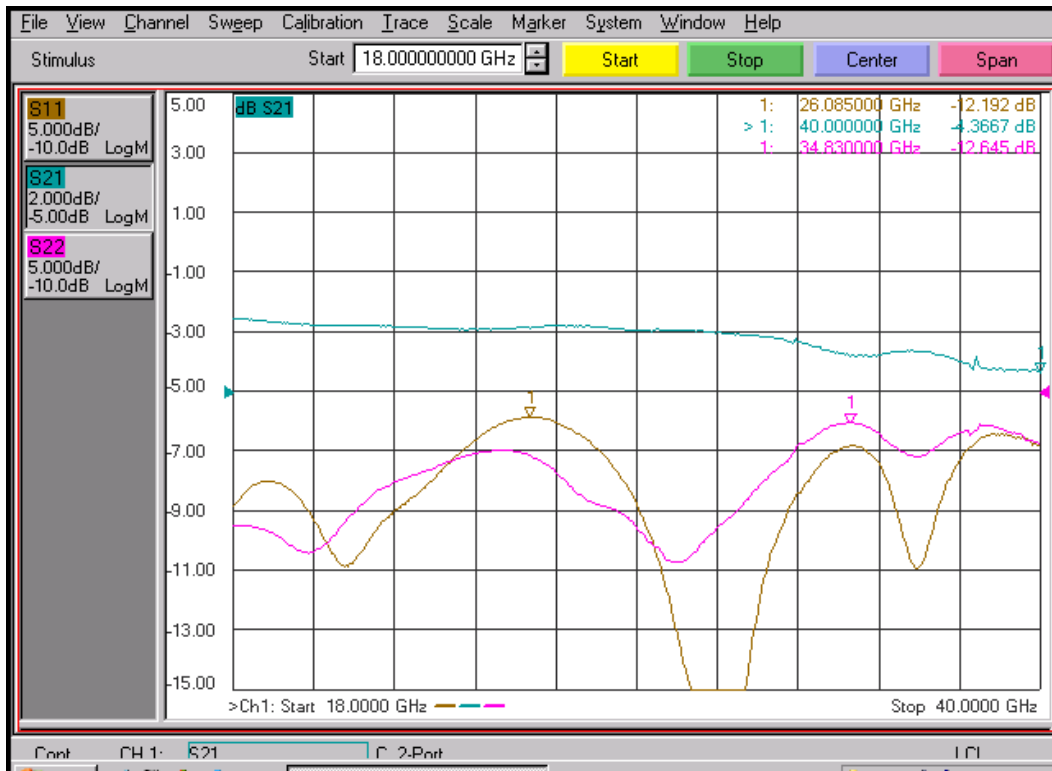
**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

5	Switching Speed: (10% to 90% RF)	15 ns Goal. 25 ns Max.	<b>20ns See Plots</b>	
6	Input Power:	+23 dBm CW Max.	<b>+23 dBm</b>	
7	DC Supply:	+15VDC @ 100 mA -15VDC @ 100 mA	<b>+15 VDC @ 64mA -15 VDC @ 43mA</b>	
8	Control Signal:	0 VDC J1 - J2 (On) +5VDC J1 - J2 (Off)	<b>Pass</b>	

**Insertion Loss and Return Loss**



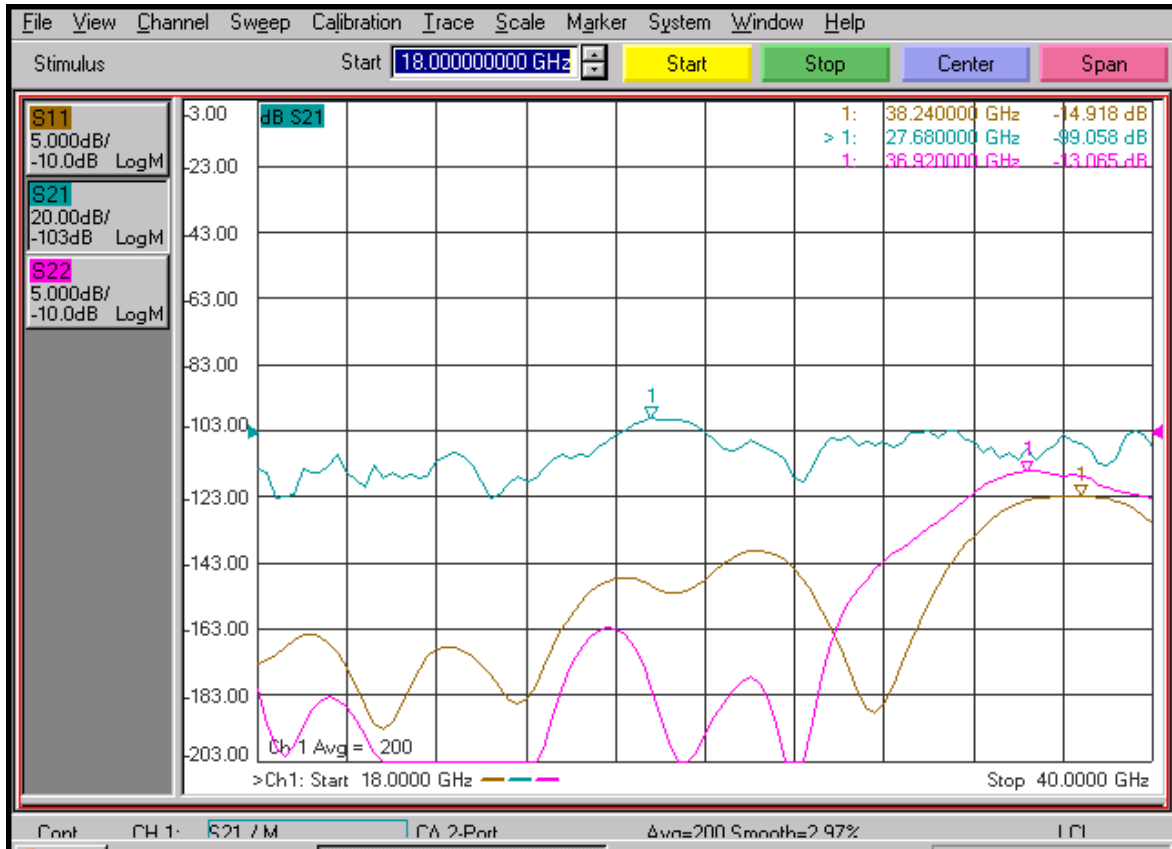
**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**





# TYPICAL CHARACTERISTICS ON P1T-18G40G-90-1515-292FF

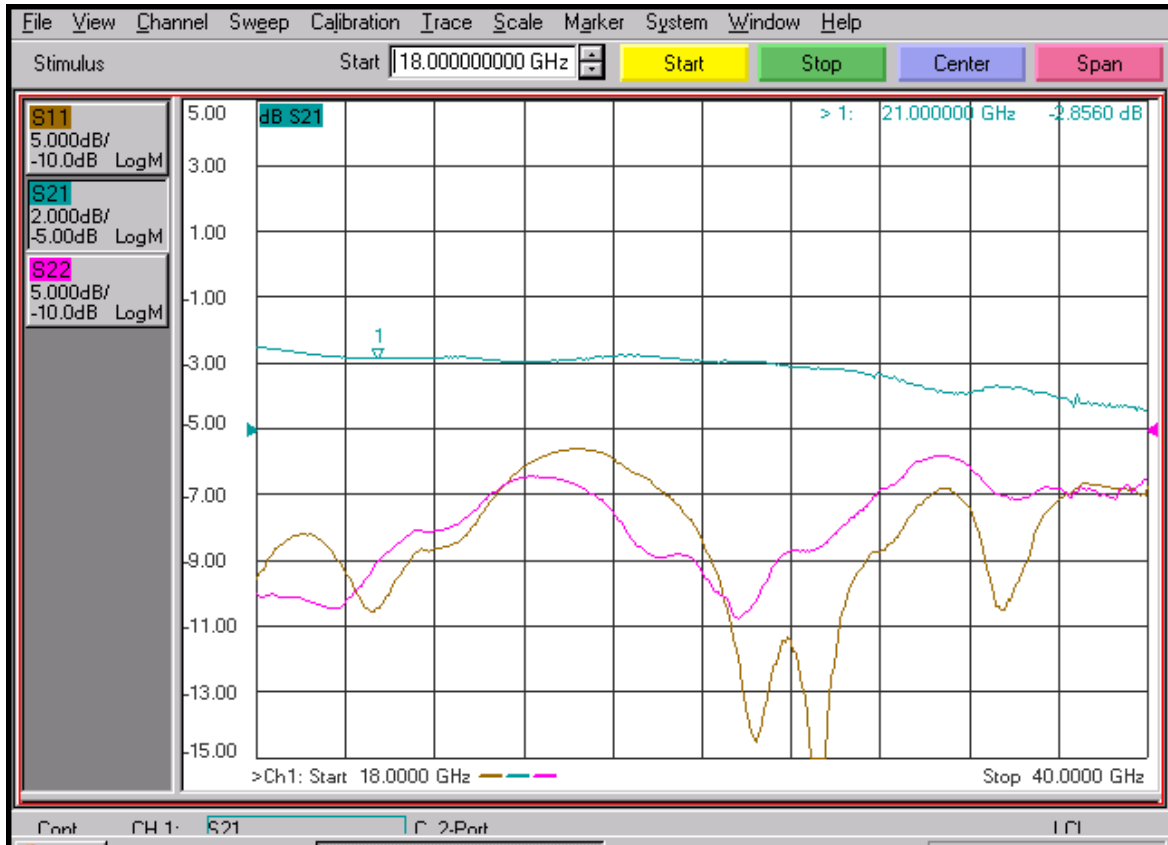
## Isolation





**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

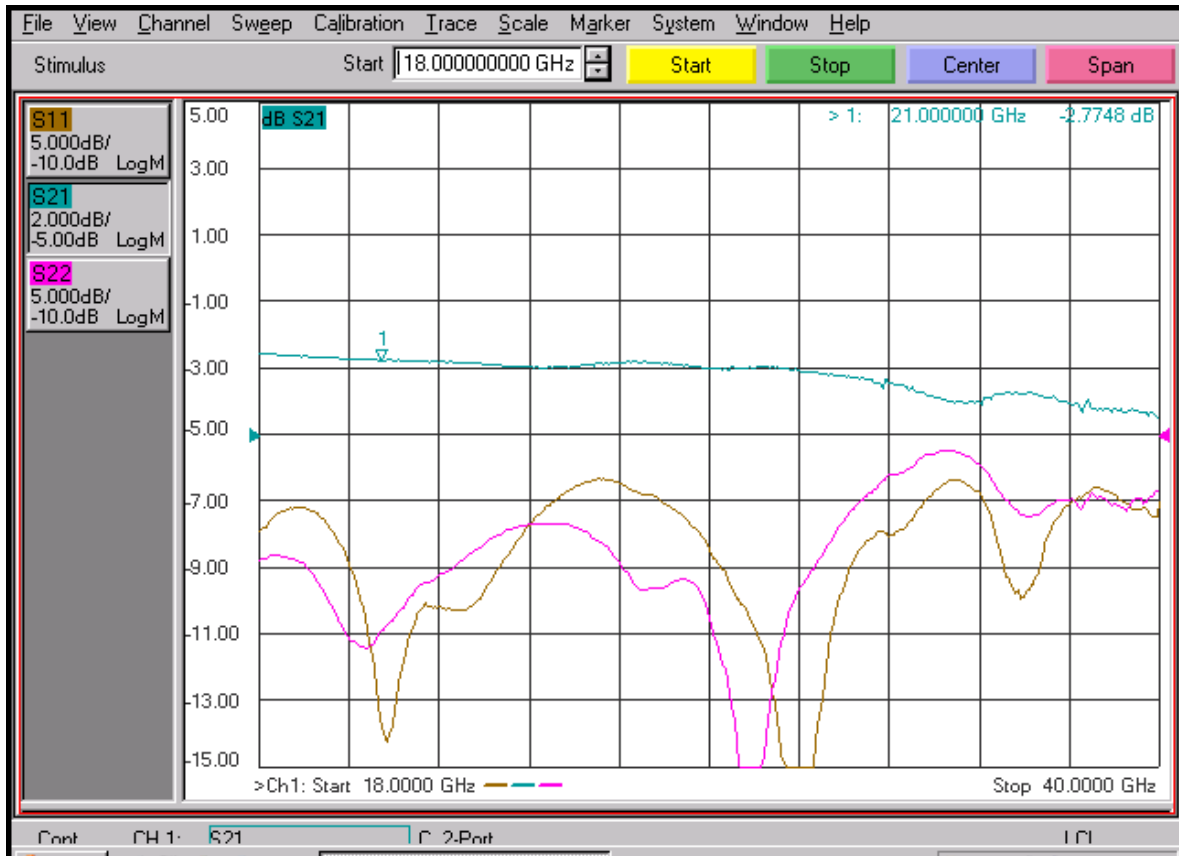
**Insertion Loss and Return Loss @ 25 °C**





**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

**Insertion Loss and Return Loss @ -55 °C**





**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

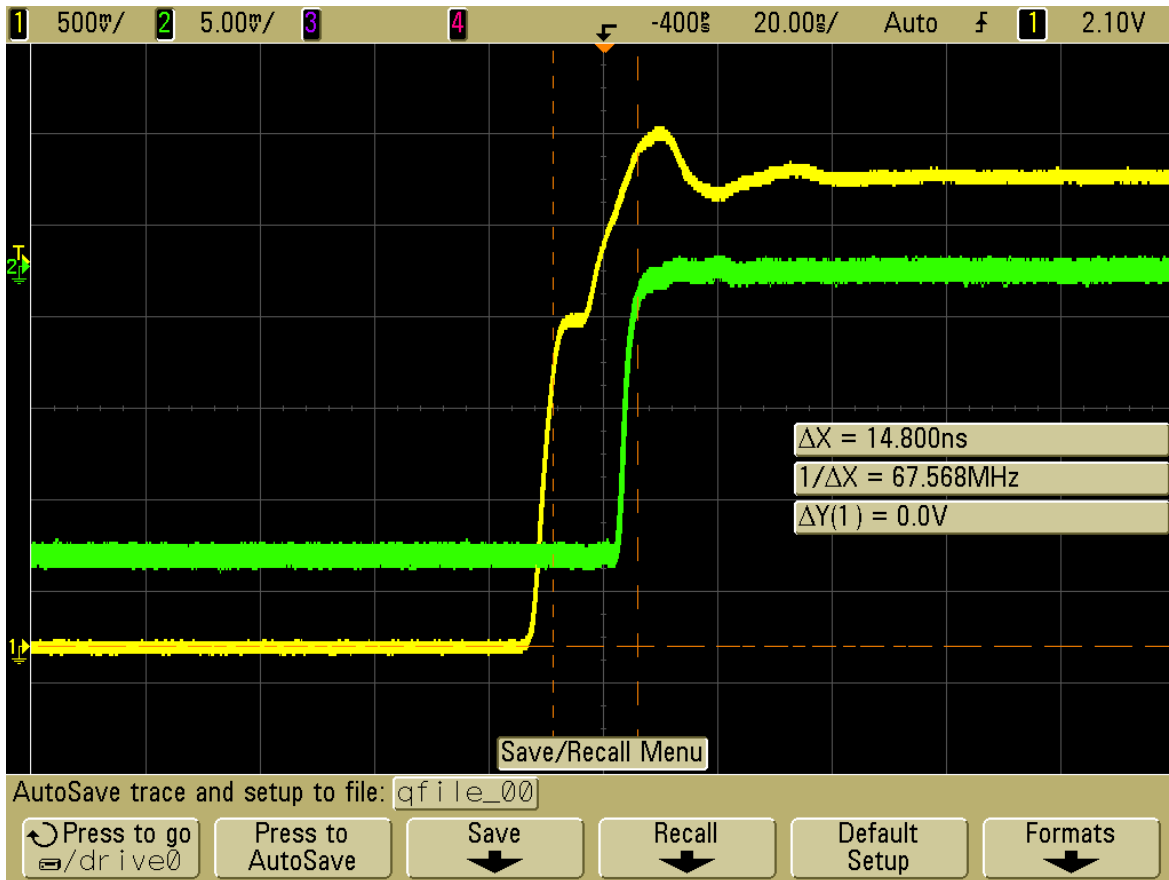
**Insertion Loss and Return Loss @ 85 °C**





**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

**Switching Speed  
On Delay – 20ns per Div.**

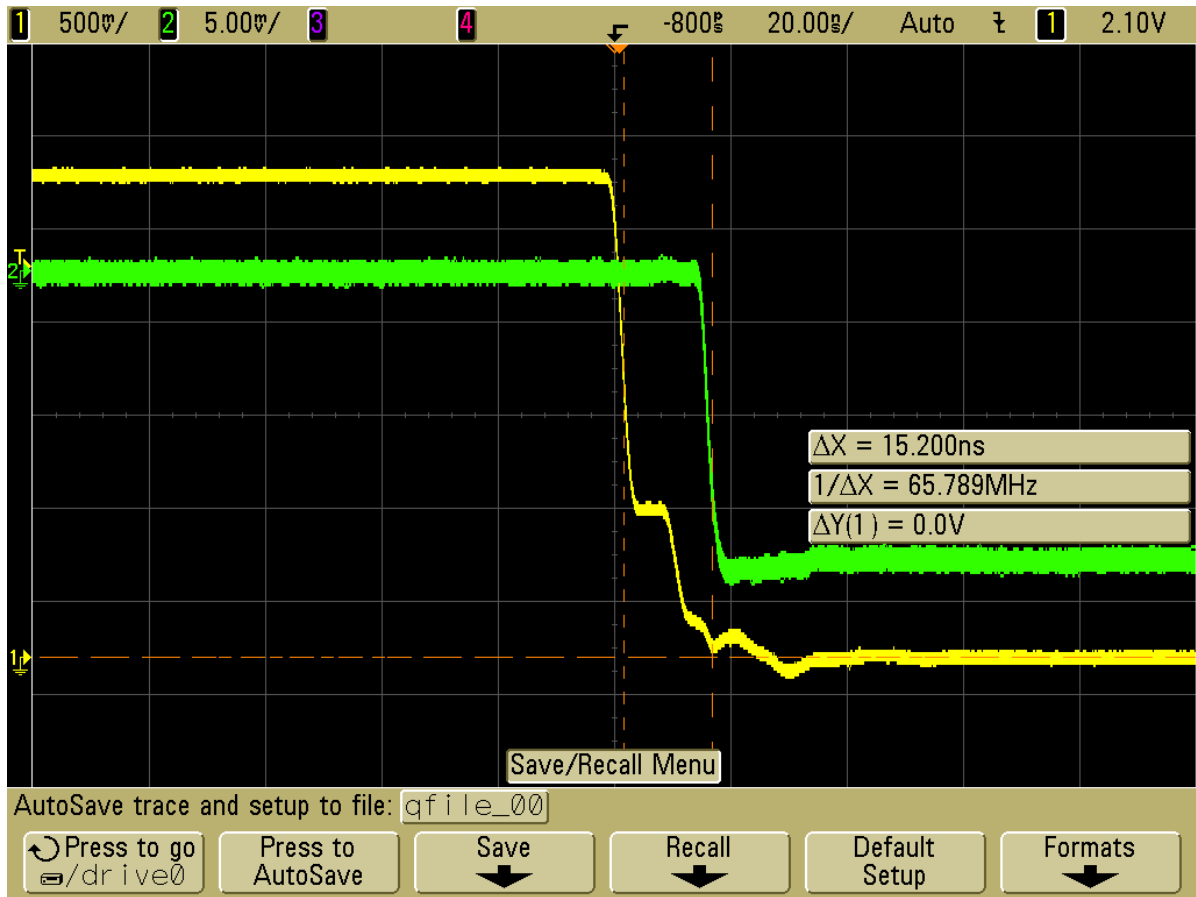


Green Trace: RF Signal  
Yellow Trace: TTL Signal



**TYPICAL CHARACTERISTICS  
ON  
P1T-18G40G-90-1515-292FF**

**Switching Speed  
Off Delay – 20ns per Div.**



Green Trace: RF Signal  
Yellow Trace: TTL Signal