



**TYPICAL CHARACTERISTICS  
ON  
P12T-0R5G18G-60-T-SFF**

**PMI MODEL P2T-0R5G18G-60-T-SFF IS A HIGH SPEED, SINGLE POLE, TWELVE THROW, ABSORPTIVE SWITCH OPERATING OVER THE 0.5 TO 18.0 GHz FREQUENCY RANGE. THIS MODEL IS CAPABLE OF SWITCHING WITHIN 100 ns WHILE MAINTAINING 60 dB OF ISOLATION. THE HOUSING MEASURES 6.00" X 2.00" X 0.40" AND IS OUTFITTED WITH SMA FEMALE CONNECTORS.**



**Agust 25, 2017**

**DESIGNED BY: PMI ENGINEERING**

**TESTED & REPORTED BY: Jerry N**



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**TABLE OF CONTENTS**

Outline Drawing..... Page 3

Summary Test Data.....Page 4

S-Parameter Data Insertion Loss and Return Loss..... Page 5-16

S-Parameter Data Isolation and Termination Return Loss. Page 5-16

Switching Speed..... Page 17-18



# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## OUTLINE DRAWING

### DESCRIPTION

PMI MODEL P12T-0R5G18G-60-T-SFF IS A HIGH SPEED, SINGLE POLE, TWELVE THROW, ABSORPTIVE SWITCH OPERATING OVER THE 0.5 TO 18.0 GHz FREQUENCY RANGE. THIS MODEL IS CAPABLE OF SWITCHING WITHIN 100 ns WHILE MAINTAINING 60 dB OF ISOLATION. THE HOUSING MEASURES 6.00" x 2.00" x 0.40" AND IS OUTFITTED WITH SMA FEMALE CONNECTORS.

### SPECIFICATIONS

- FREQUENCY RANGE: 0.5 TO 18.0 GHz
- ISOLATION: 60 dB MINIMUM
- INSERTION LOSS: 5.5 dB MAXIMUM
- VSWR (IN/OUT): 2.0:1 MAXIMUM
- OPERATING INPUT POWER: +20 dBm CW
- SWITCHING SPEED: 100 ns MAXIMUM
- DC VOLTAGE AND CURRENT: +5 VDC @ 600 mA  
-5 VDC @ 100 mA
- CONTROL SIGNAL: 4-BIT DECODED TTL (SEE TABLE)
- CONNECTORS: RF: SMA FEMALE  
CONTROL: SOLDER PINS
- SIZE: 6.00" x 2.00" x 0.40"  
152.4 mm x 50.8 mm x 10.16 mm  
EXCLUDING CONNECTORS
- FINISH: PAINTED GRAY

LOGIC TABLE				CONNECTOR
E4	E3	E2	E1	
0	0	0	0	J2 ON
0	0	0	1	J3 ON
0	0	1	0	J4 ON
0	0	1	1	J5 ON
0	1	0	0	J6 ON
0	1	0	1	J7 ON
0	1	1	0	J8 ON
0	1	1	1	J9 ON
1	0	0	0	J10 ON
1	0	0	1	J11 ON
1	0	1	0	J12 ON
1	0	1	1	J13 ON

### ENVIRONMENTAL RATINGS

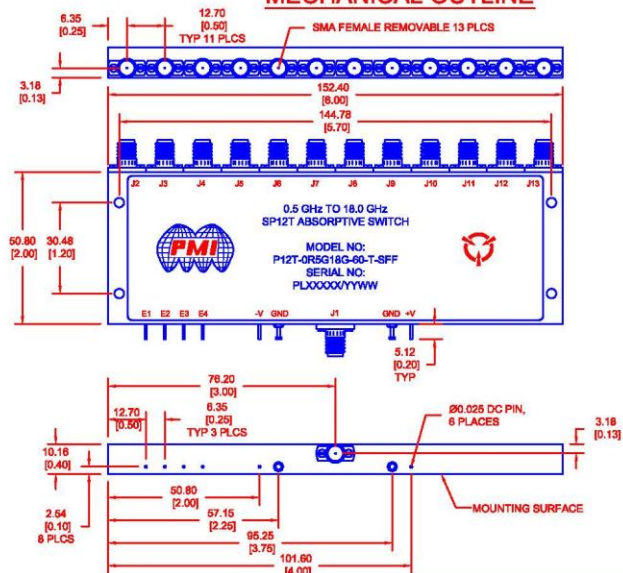
- TEMPERATURE: -54 °C TO +95 °C (OPERATING)  
-65 °C TO +125 °C (STORAGE)
- HUMIDITY: MIL-STD-202, METHOD 103B COND. B
- SHOCK: MIL-STD-202, METHOD 213B COND. B
- VIBRATION: MIL-STD-202, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202, METHOD 107D COND. A

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

PMI CONFIDENTIAL AND PROPRIETARY

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	08/11/17	

### MECHANICAL OUTLINE



### PLANAR MONOLITHICS INDUSTRIES, INC.

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ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE		
DRAWN	M. Berry	08/11/17	PRODUCT FEATURE P12T-0R5G18G-60-T-SFF		
CHECKED			0.5 GHz to 18.0 GHz SP12T Absorptive Pin Diode Switch		
ISSUED			SIZE	FRM NO.	DWG NO.
			A	05XQ0	27031860
			SCALE	N:S	SHEET 1 OF 1



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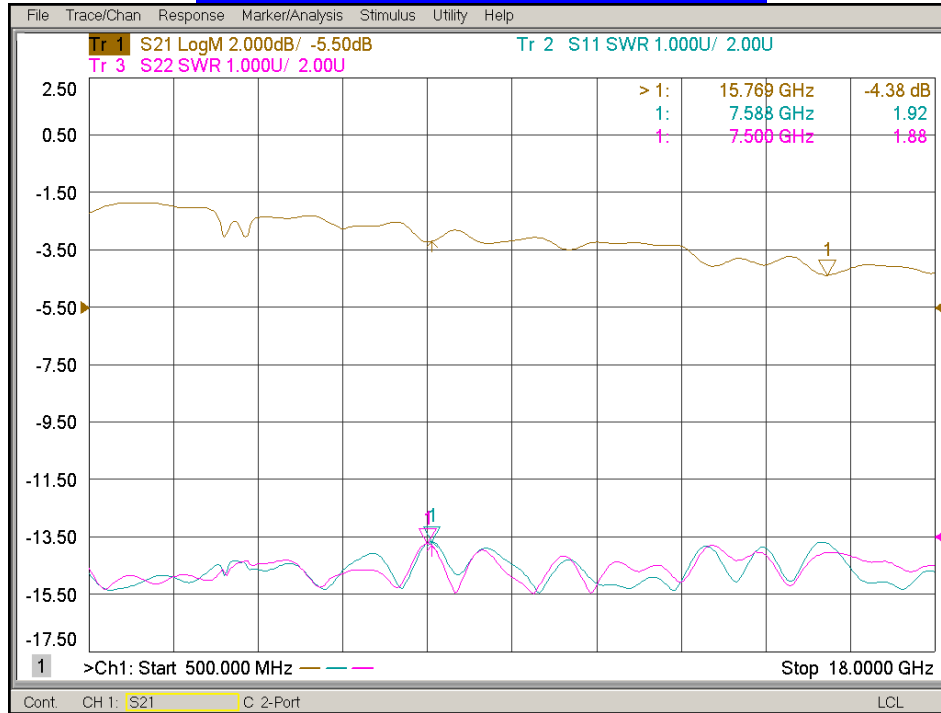
**TEST DATA SUMMARY**

TEST ITEM	PARAMETERS	SPECIFIED VALUE	RESULTS	PASS/FAIL	QA QC
1	Frequency Range	0.5 to 18.0 GHz	<b>0.5 to 18.0 GHz</b>	<b>Pass</b>	
2	Isolation	60 dB Minimum	<b>86.16 dB</b>	<b>Pass</b>	
3	Insertion Loss	5.5 dB Maximum	<b>4.46 dB</b>	<b>Pass</b>	
4	VSWR (In/Out)	2.0:1 Maximum	<b>1.96 :1</b>	<b>Pass</b>	
5	Operating Input Power	+20 dBm Maximum	<b>+20 dBm</b>	<b>Pass</b>	
6	Switching Speed	100 ns Maximum	<b>31 ns</b>	<b>Pass</b>	
7	DC Voltage & Current	+5 VDC @ 600 mA	<b>300 mA</b>	<b>Pass</b>	
		-5 VDC @ 100 mA	<b>180 mA</b>		

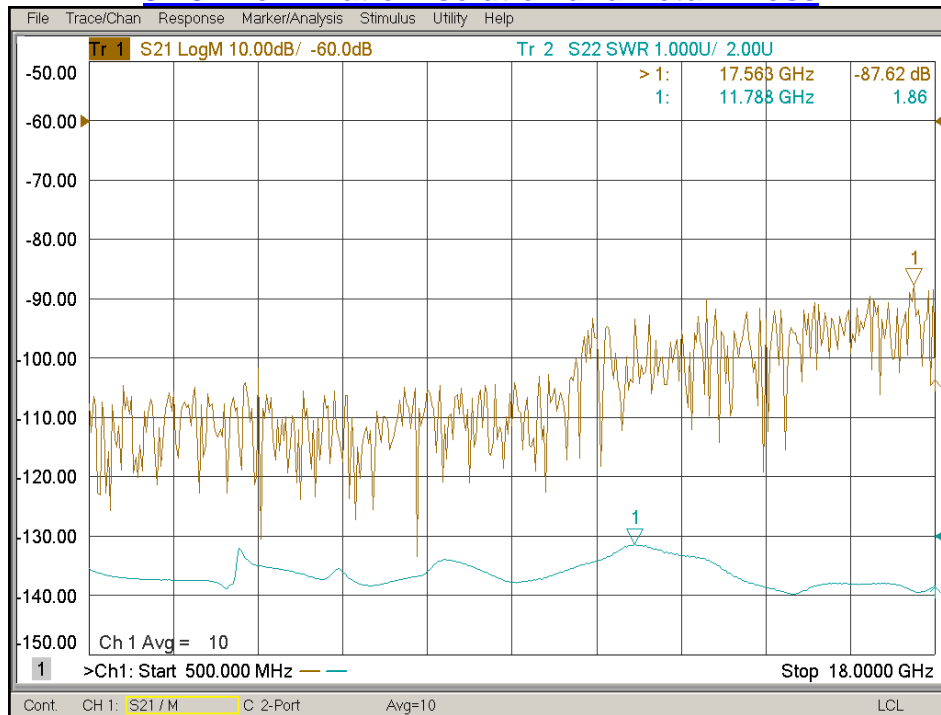


# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## J1-J2 Insertion Loss and Return Loss



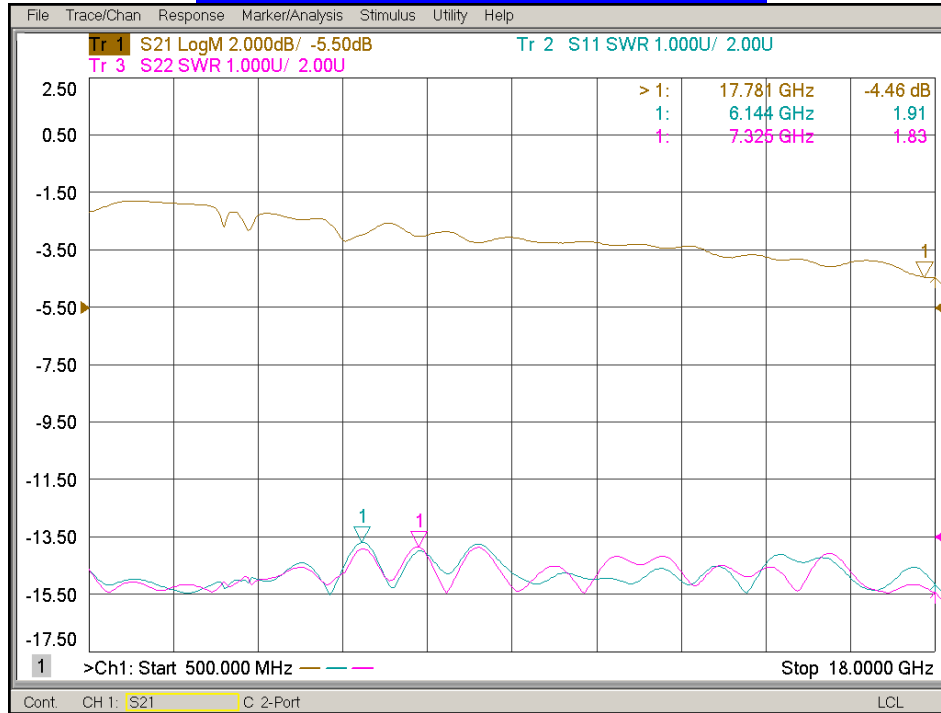
## J1-J2 Termination Isolation and Return Loss



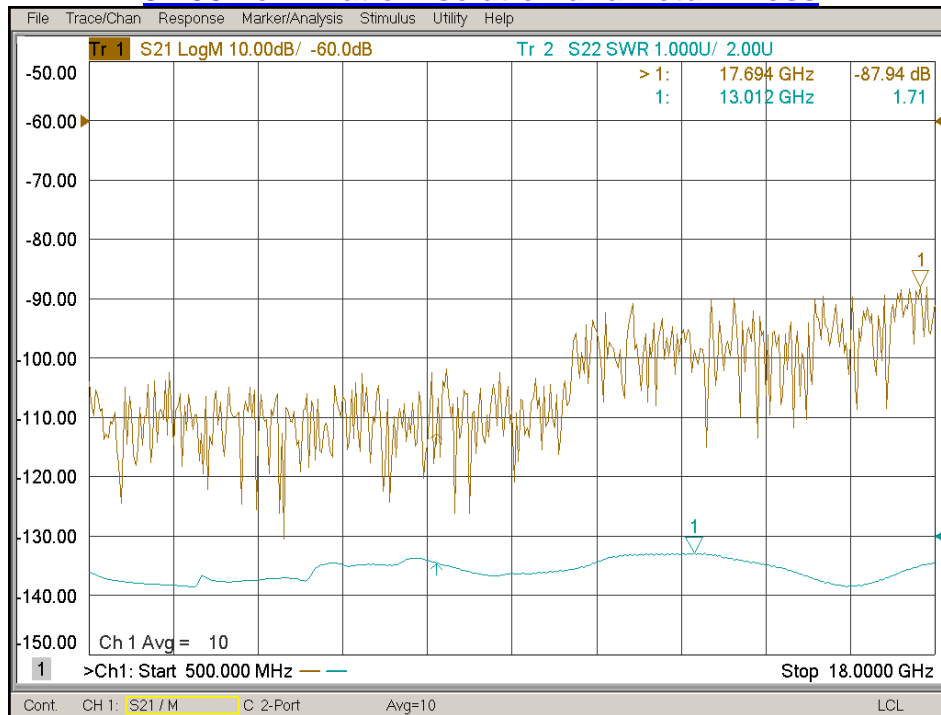


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J3 Insertion Loss and Return Loss



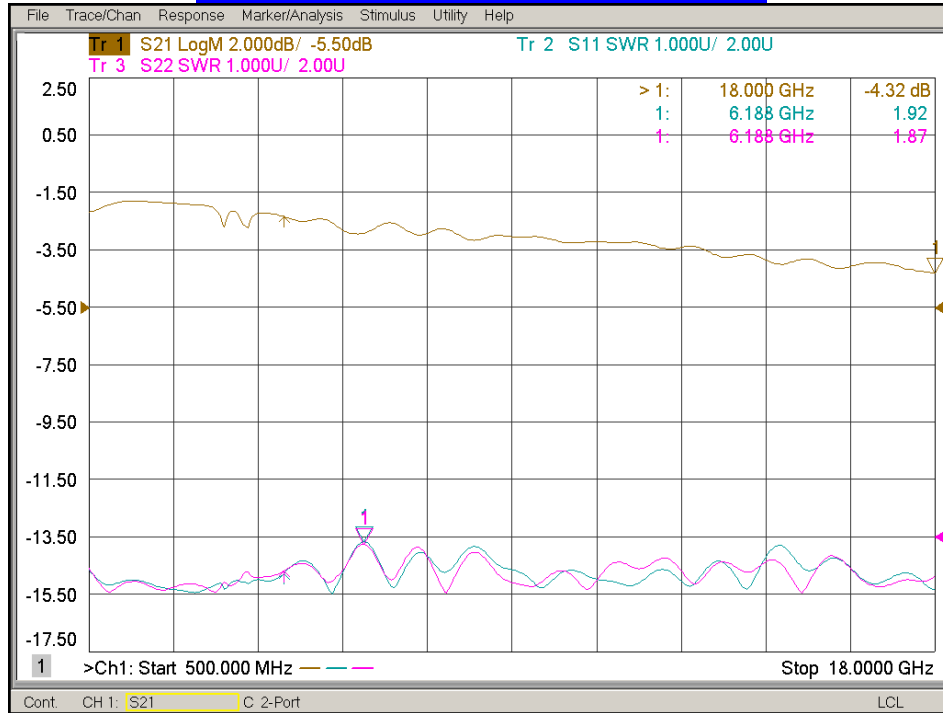
### J1-J3 Termination Isolation and Return Loss



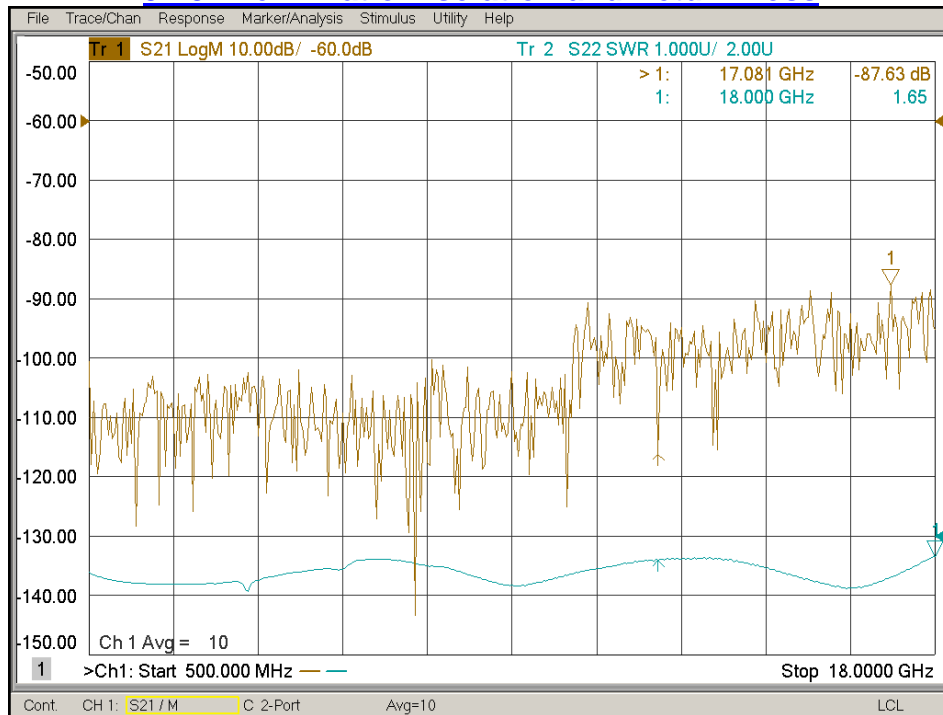


# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## J1-J4 Insertion Loss and Return Loss



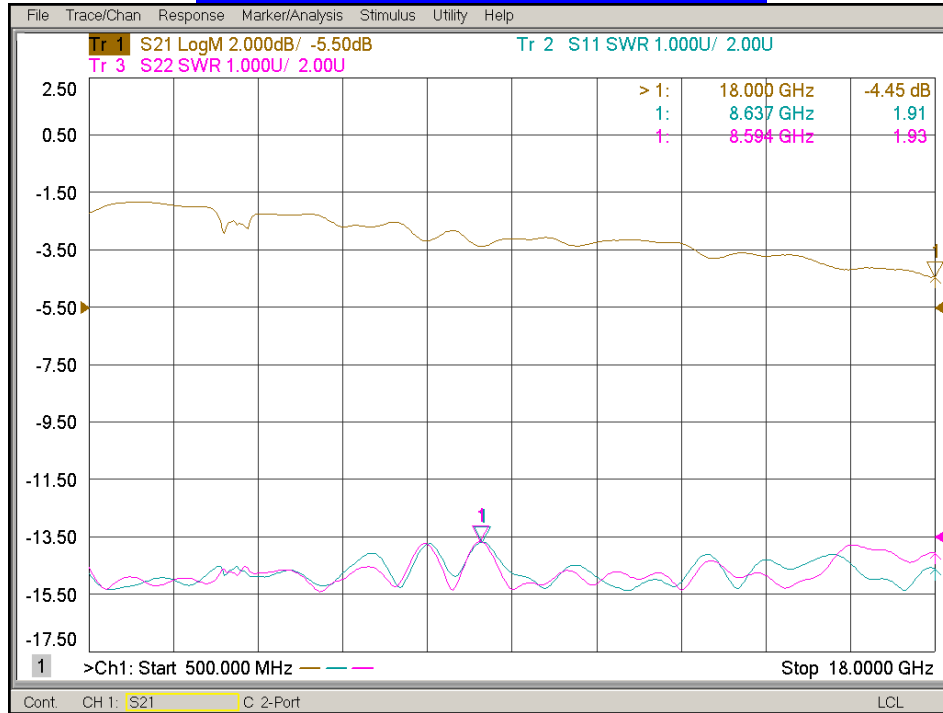
## J1-J4 Termination Isolation and Return Loss



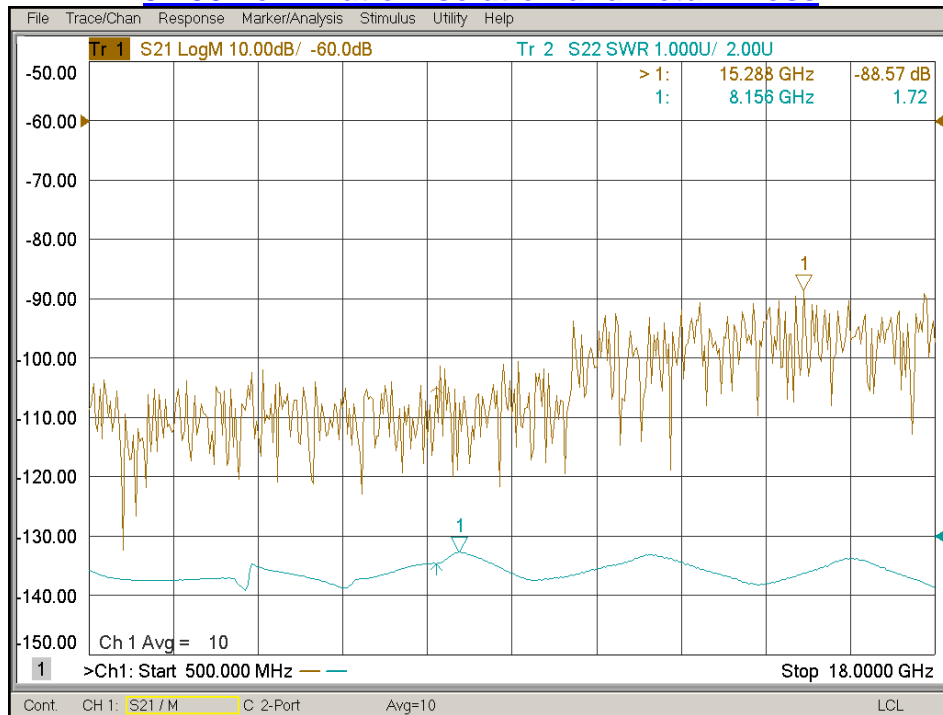


# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## J1-J5 Insertion Loss and Return Loss



## J1-J5 Termination Isolation and Return Loss

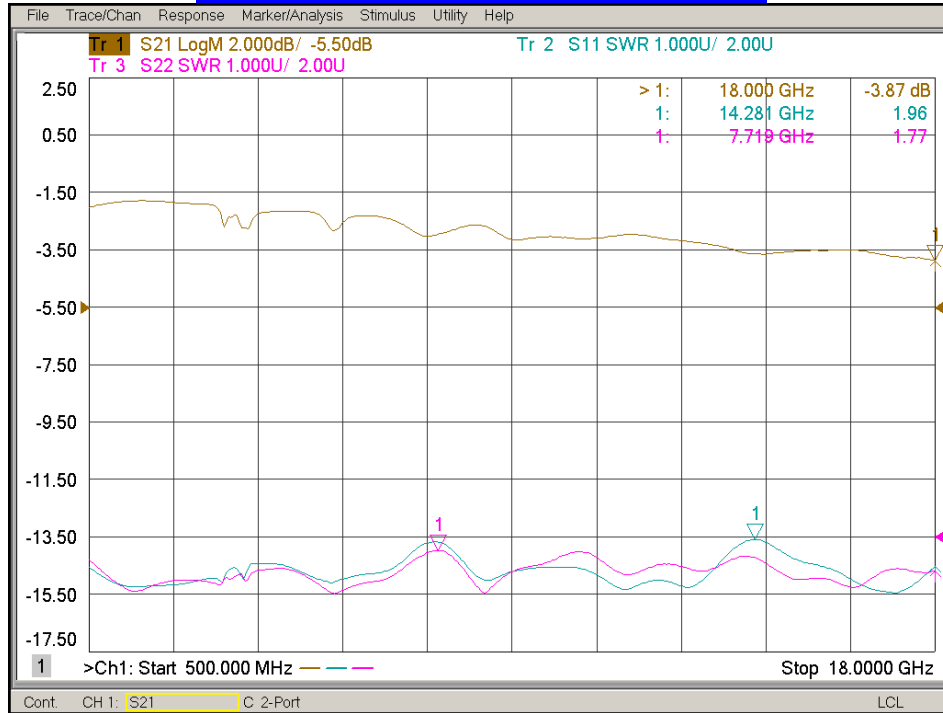




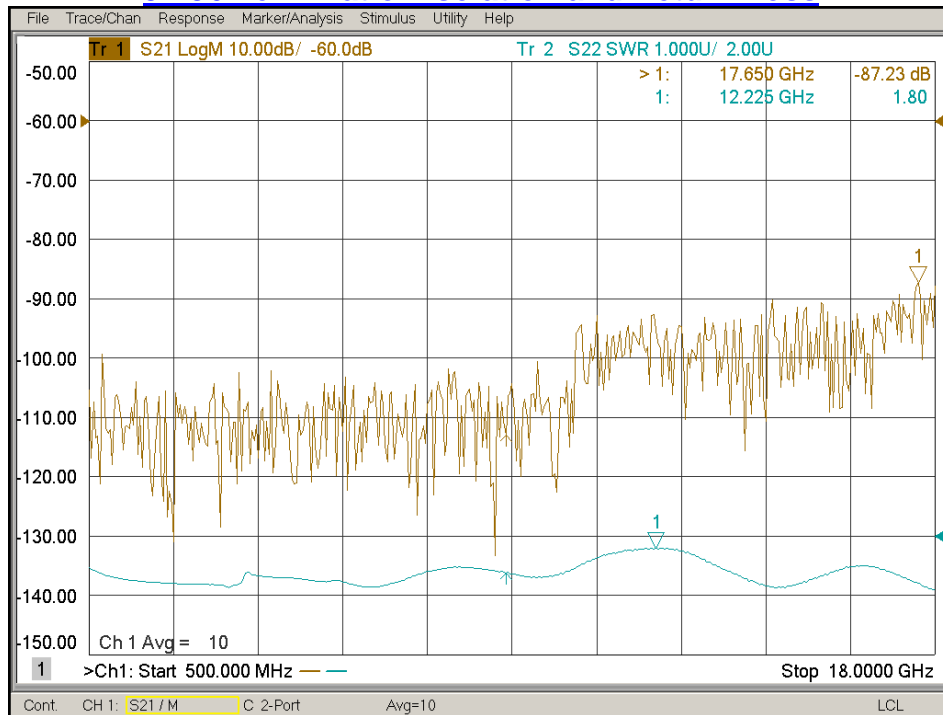


# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## J1-J6 Insertion Loss and Return Loss



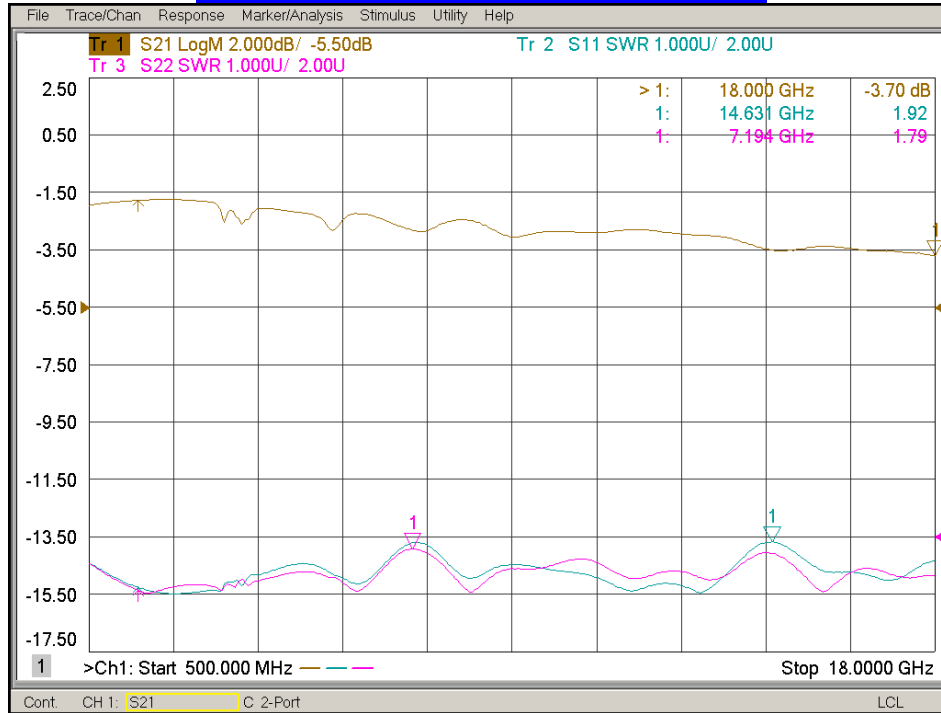
## J1-J6 Termination Isolation and Return Loss



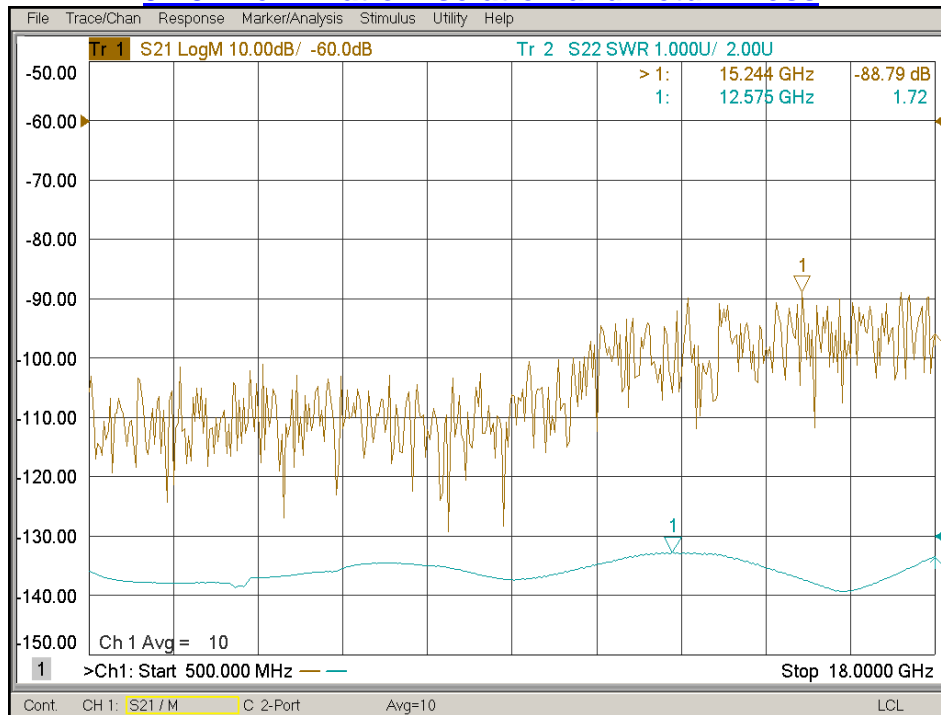


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J2 Insertion Loss and Return Loss



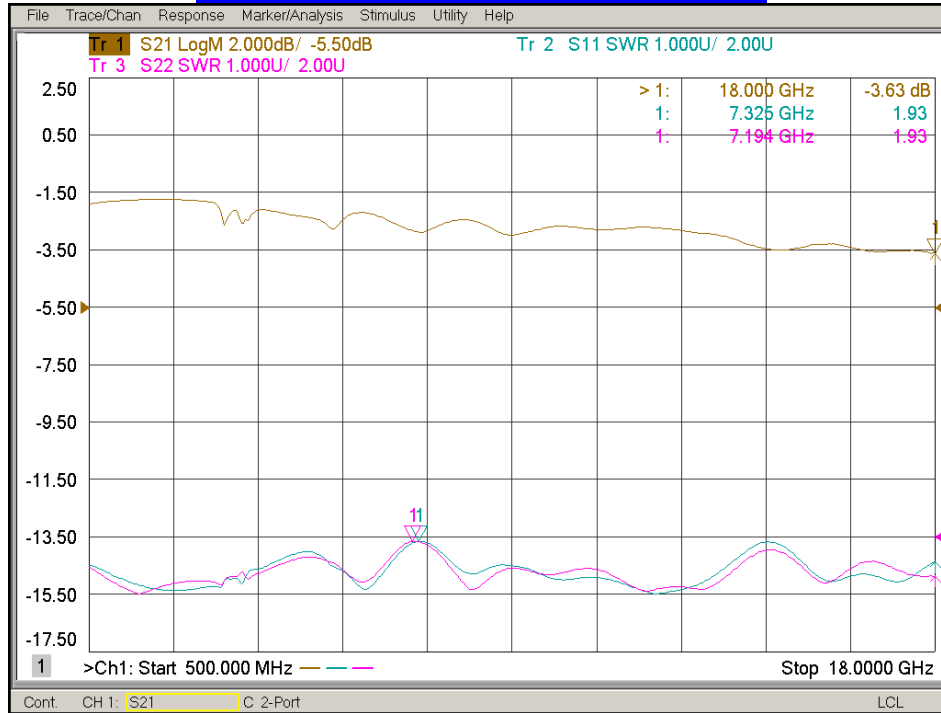
### J1-J7 Termination Isolation and Return Loss



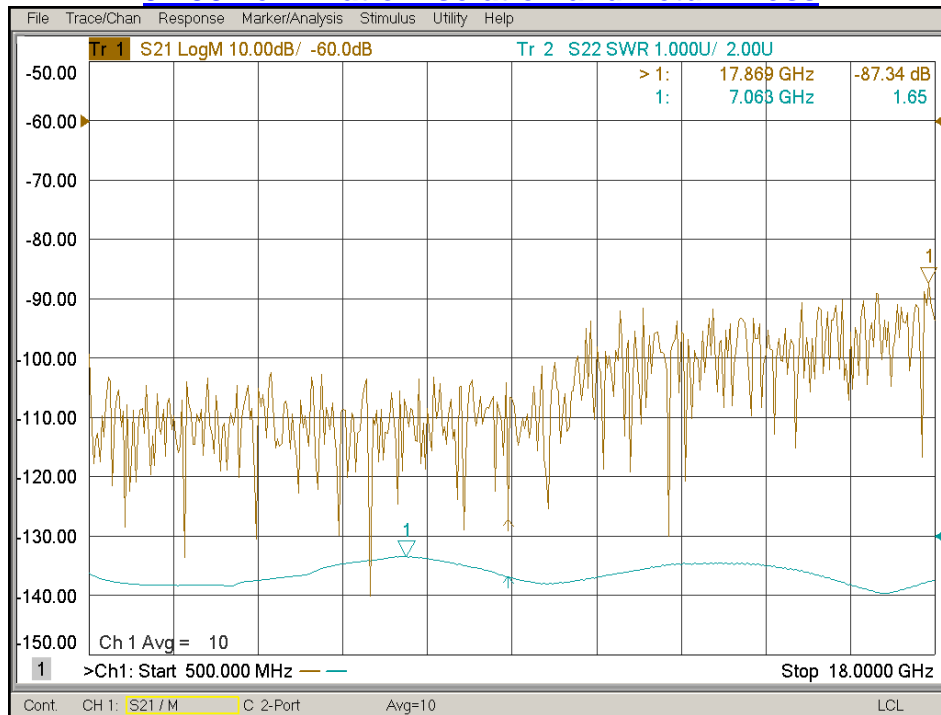


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J8 Insertion Loss and Return Loss



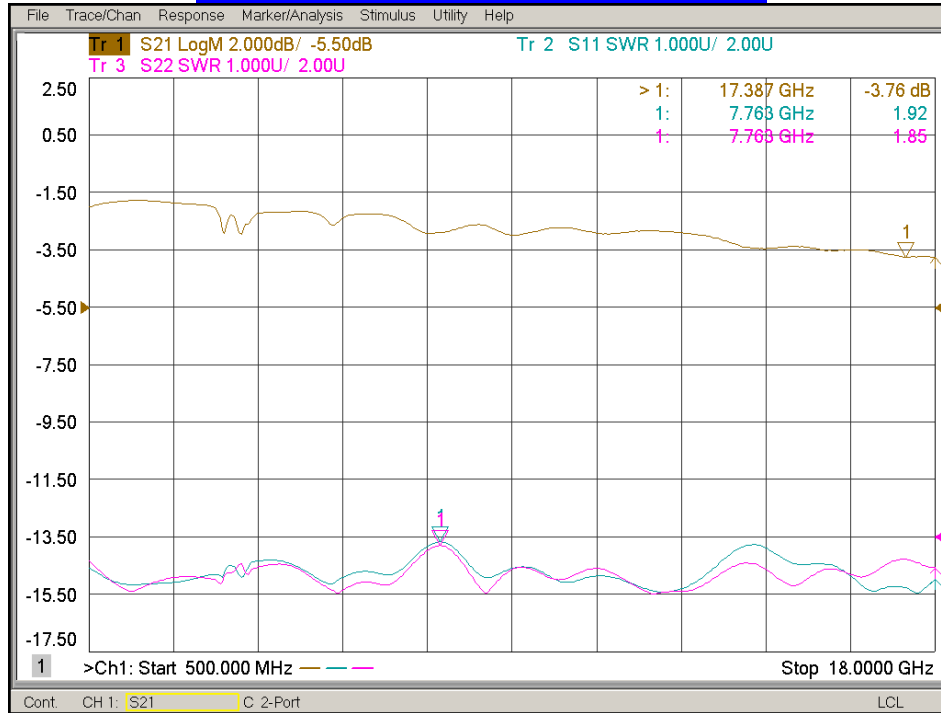
### J1-J8 Termination Isolation and Return Loss



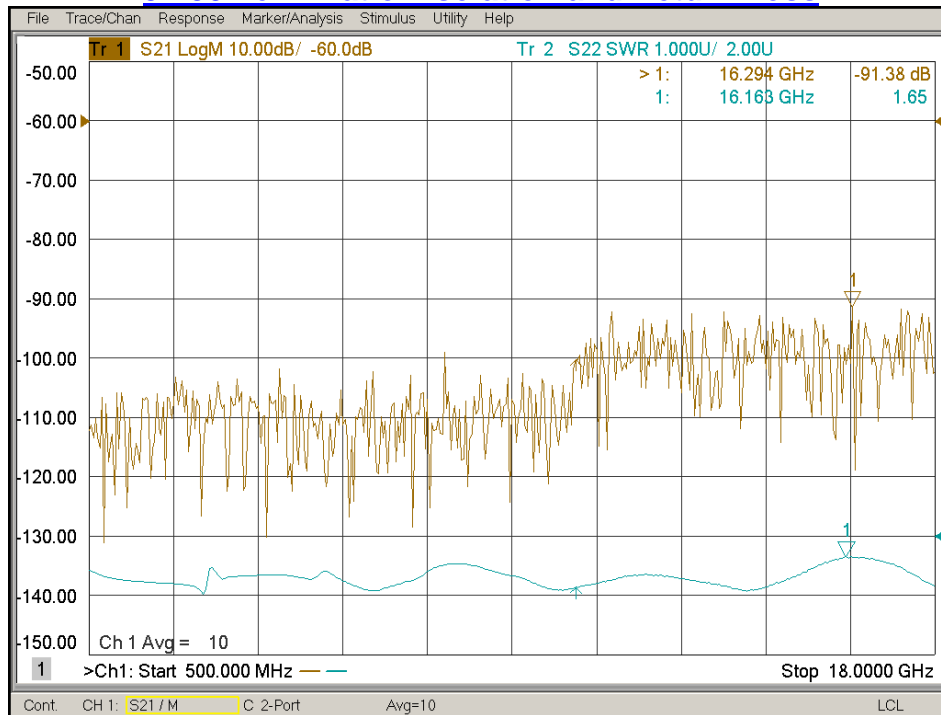


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J9 Insertion Loss and Return Loss



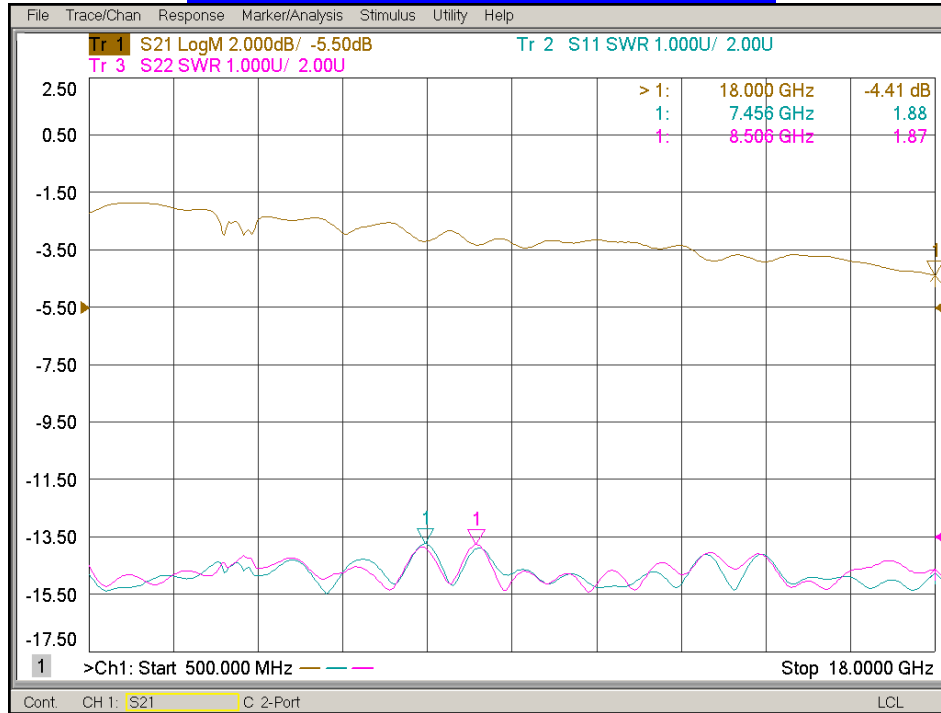
### J1-J9 Termination Isolation and Return Loss



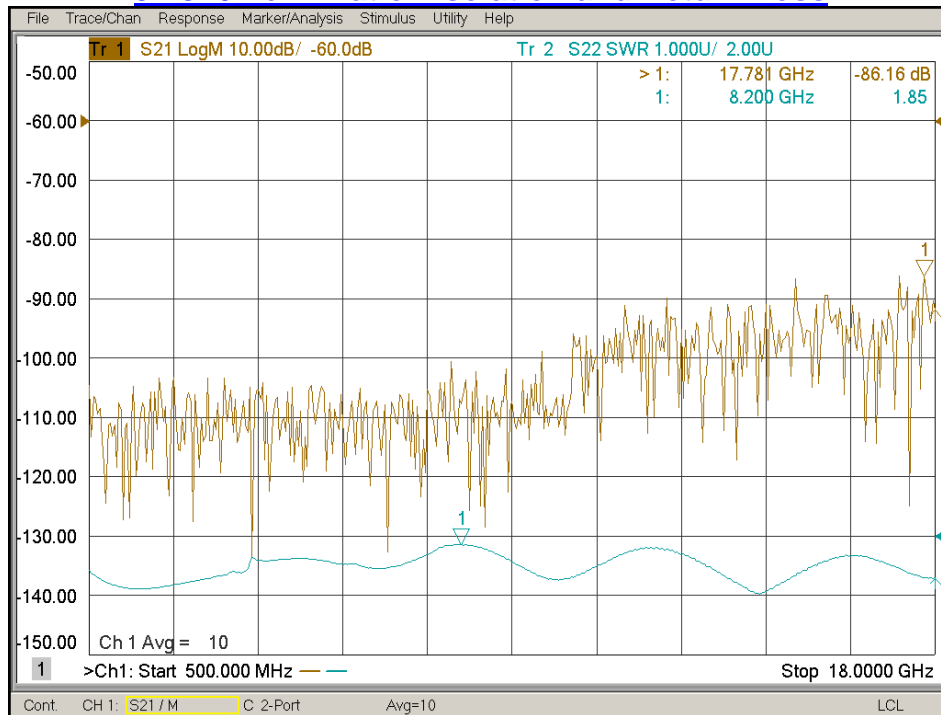


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J10 Insertion Loss and Return Loss



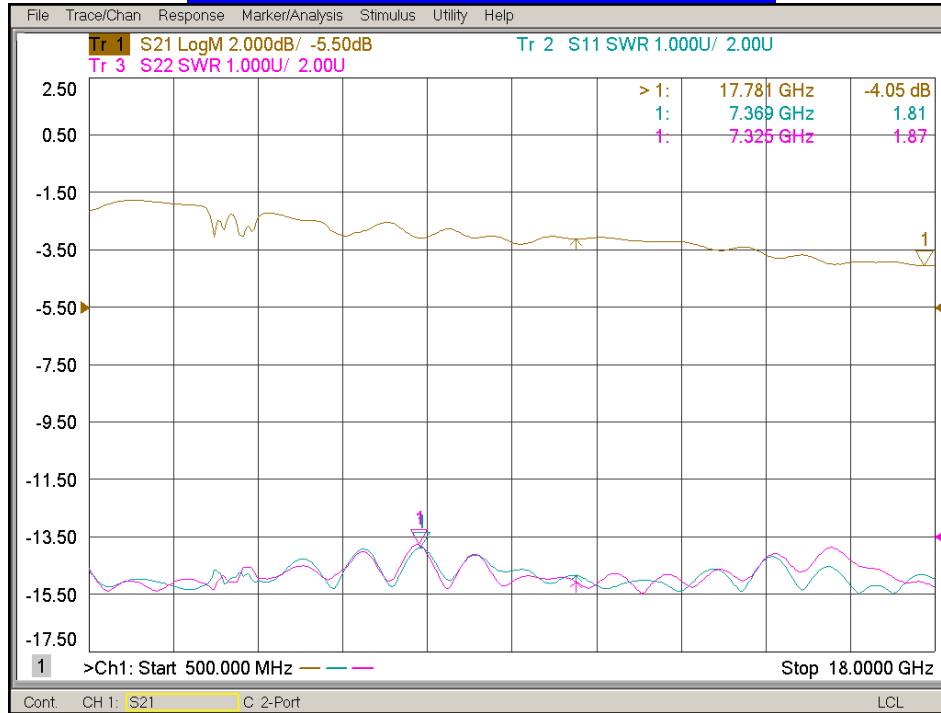
### J1-J10 Termination Isolation and Return Loss



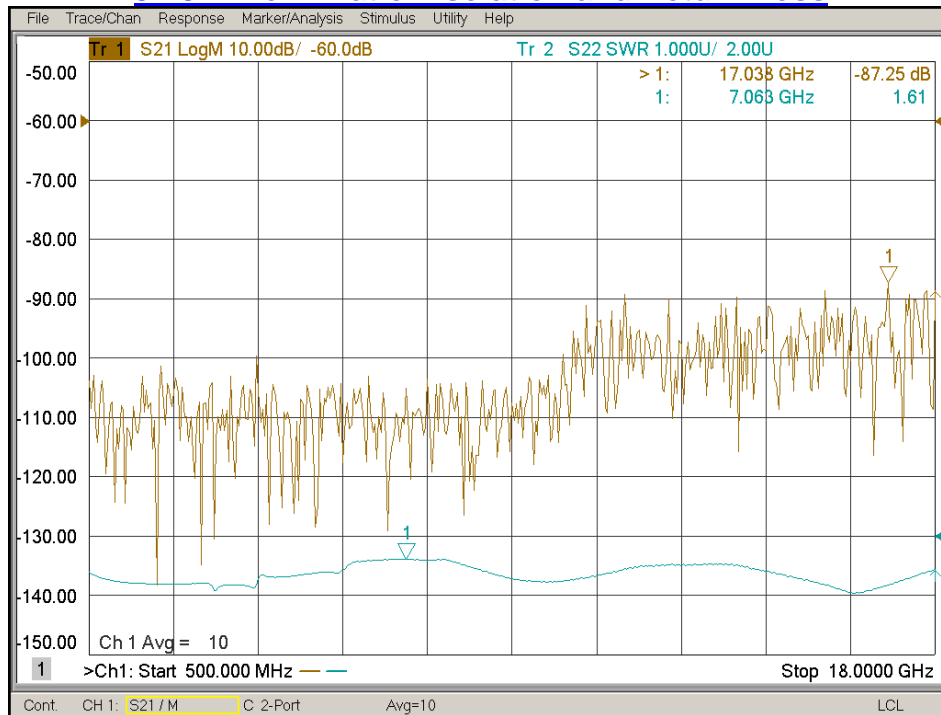


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J11 Insertion Loss and Return Loss



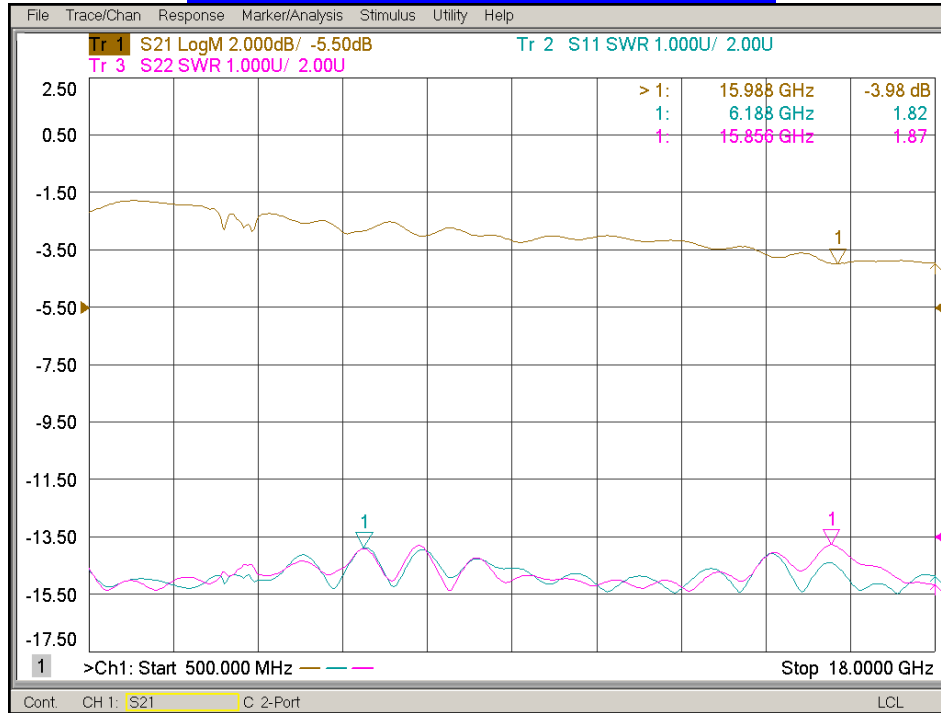
### J1-J11 Termination Isolation and Return Loss



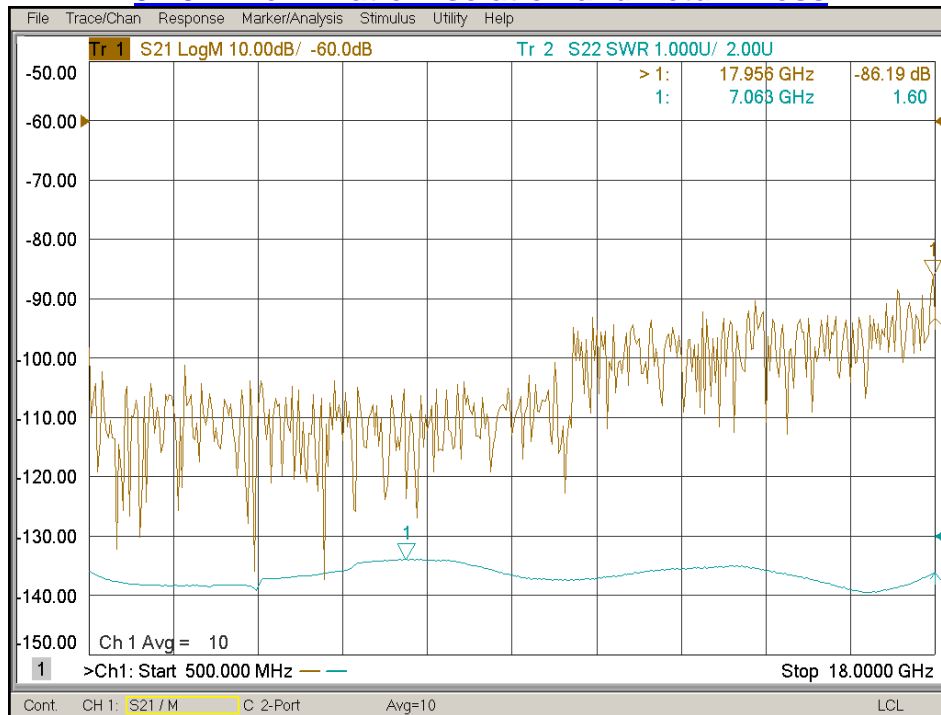


## TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

### J1-J12 Insertion Loss and Return Loss



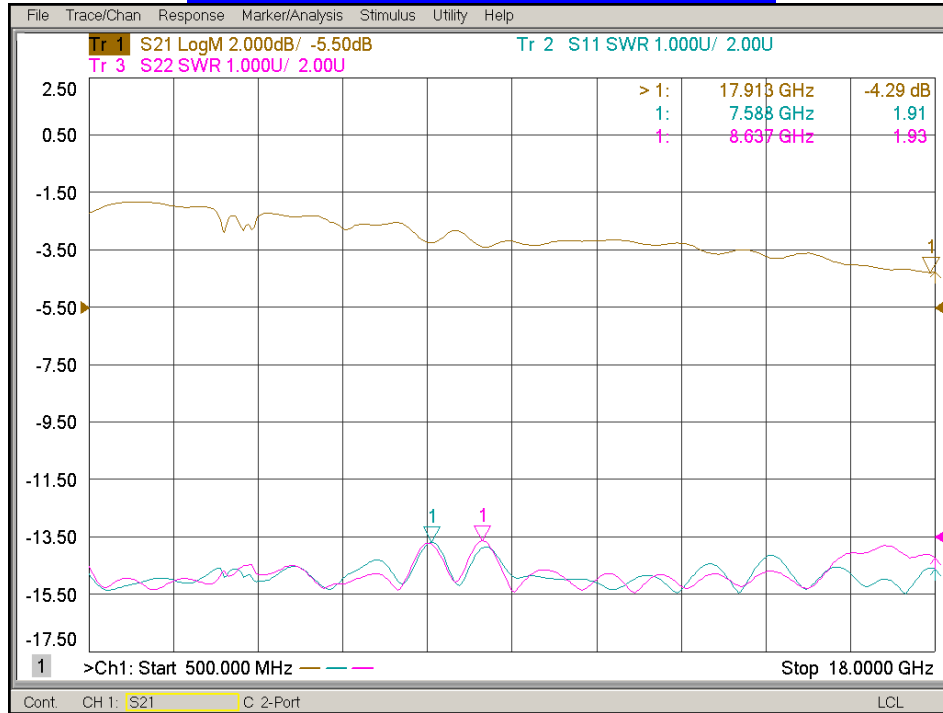
### J1-J12 Termination Isolation and Return Loss



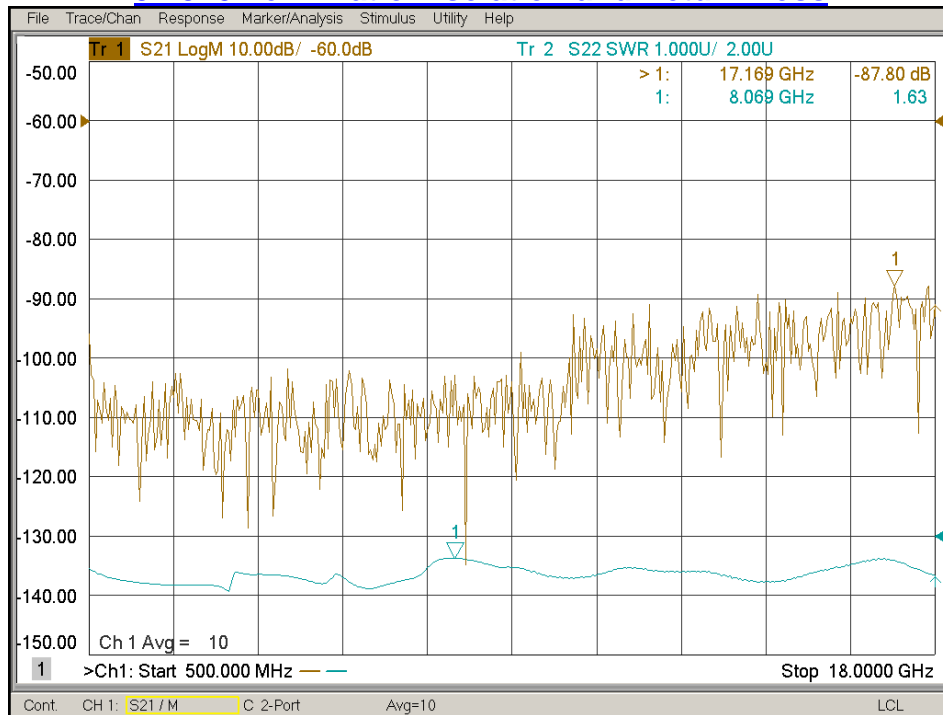


# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## J1-J13 Insertion Loss and Return Loss



## J1-J13 Termination Isolation and Return Loss



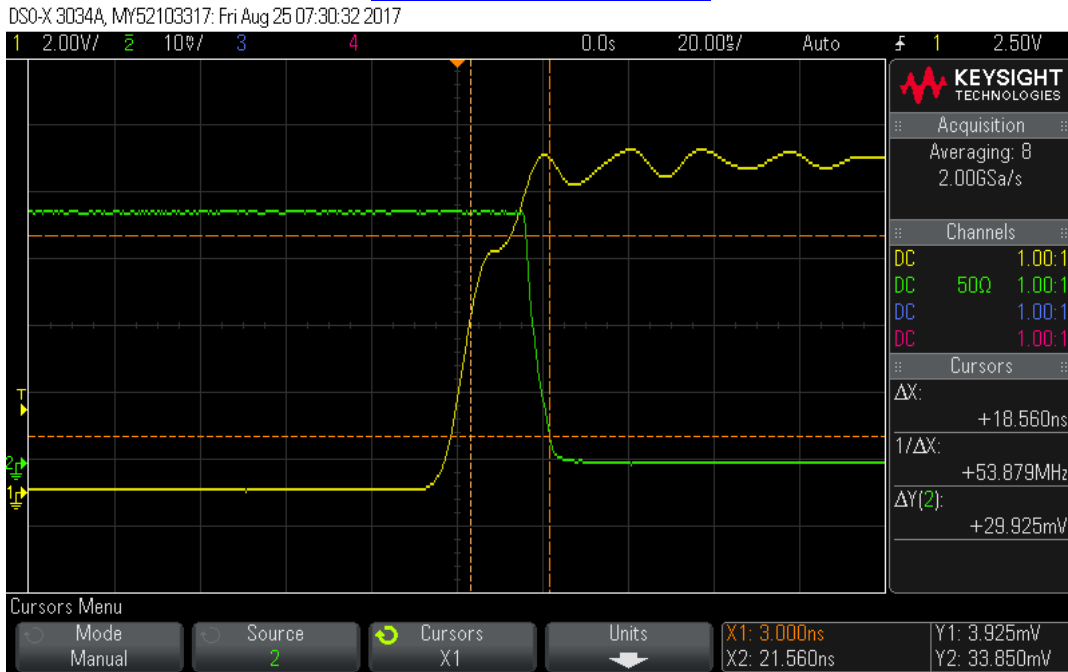




# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## Switching Speed.

### OFF Delay – 20 ns per Div.



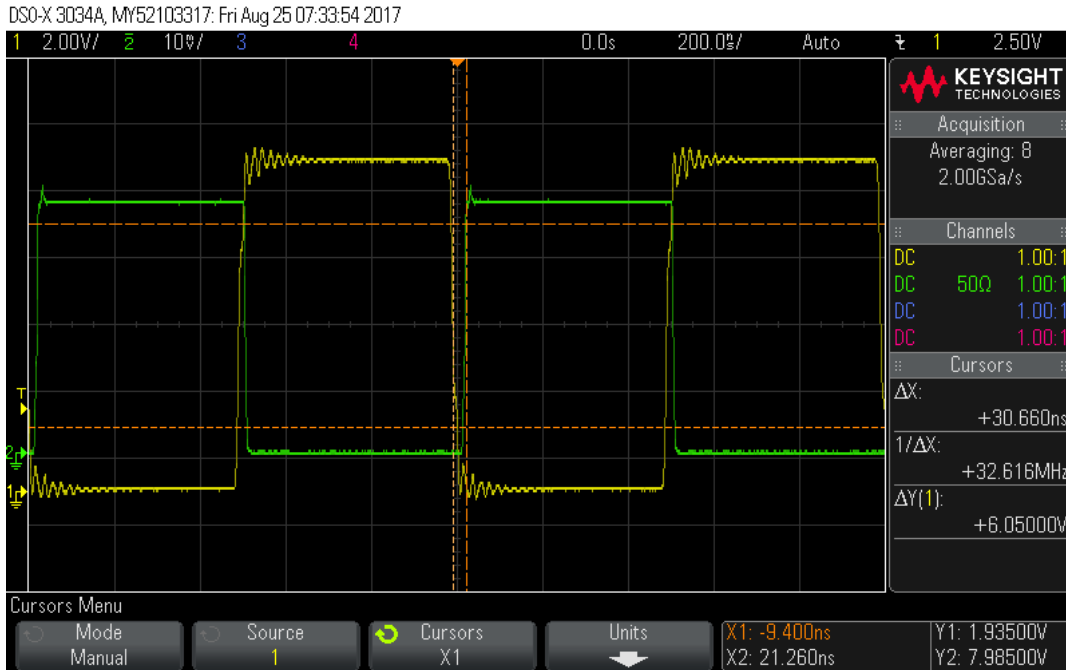
### ON Delay and – 20 ns per Div.



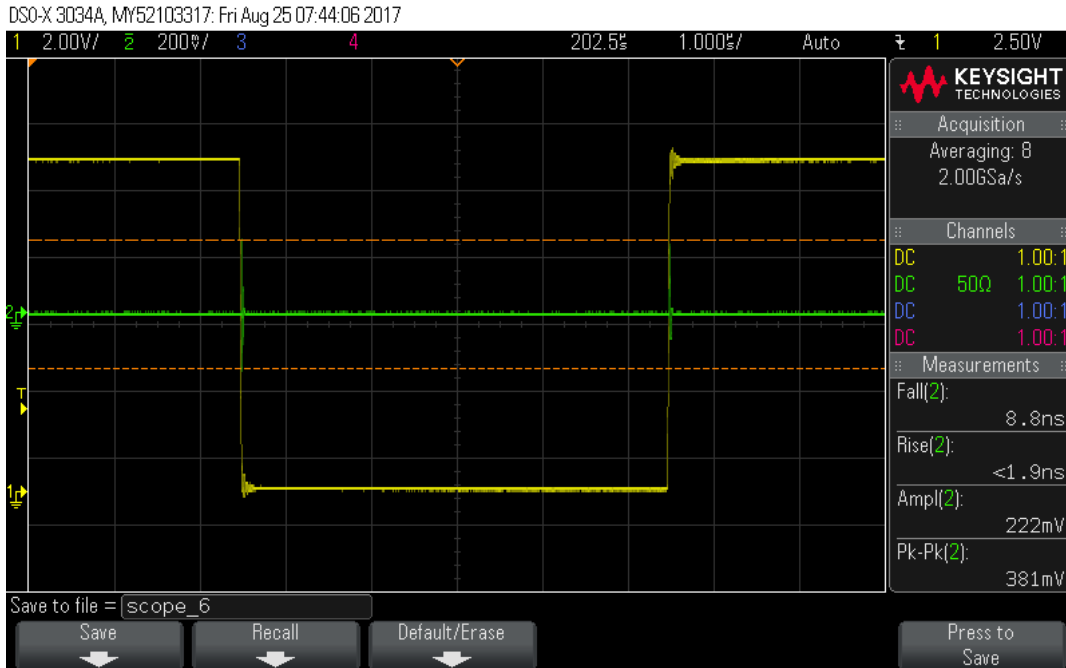


# TYPICAL CHARACTERISTICS ON P12T-0R5G18G-60-T-SFF

## FULL PULSE– 200 ns per Div.



## TRANSIENT– 1 μs per Div.



**GREEN TRACE: RF**  
**YELLOW TRACE: TTL**