



# Typical Characteristics On P4T-60M20G-100-T-SFF

PL12980/1315

**PMI MODEL: P4T-60M20G-100-T-SFF IS A SINGLE POLE FOUR THROW ABSORPTIVE SWITCH. THIS MODEL HAS THE FOLLOWING SPECIFICATIONS.**



**April 12, 2013  
Designed By: Dr. Ashok Gorwara  
Reported & Tested By  
Hugo Gonzales / Sebastian Palacio**



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## DESCRIPTION

PMI MODEL: P4T-60M20G-100-T-SFF IS A SINGLE POLE FOUR THROW ABSORPTIVE SWITCH. THIS MODEL HAS THE FOLLOWING SPECIFICATIONS.

## SPECIFICATIONS

- FREQUENCY RANGE: 0.06 TO 20.0 GHz
- INSERTION LOSS: 5.5dB MAX
- ISOLATION: 100DB MIN, 110DB TYP.
- VSWR (ON/OFF): 2.0:1 MAX
- SWITCHING SPEED: 300 ns (10% - 90% RF) TYP.
- CONTROL LOGIC: TTL LOGIC "0" = ON, "1" = OFF
- SURVIVAL POWER: +30 dbm (1 WATT)
- OPERATING POWER: +20 dbm MAX
- RF PHASE TRACKING: 2 DEGREES PER °C  
(ALL PORTS WITH RESPECT TO COMMON WITH TEMPERATURE)
- DC SUPPLY: +5VDC @ 200mA MAX  
-12VDC @ 100mA MAX
- CONNECTORS IN/OUT: SMA (F) REMOVABLE
- CONTROL CONNECTORS: CONTROL PINS
- SIZE: (L) 1.25" X (W) 1.25" X (H) 0.70"
- WEIGHT: 1.5oz
- FINISH: MIL SPEC EPOXY PAINT - GRAY

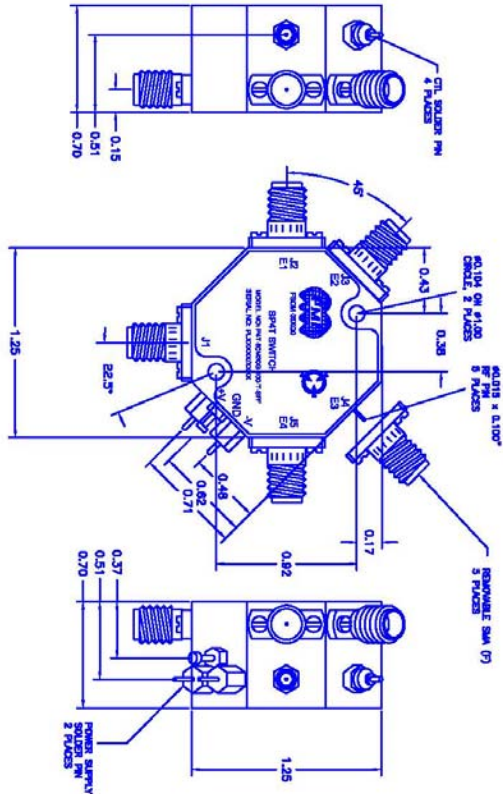
## ENVIRONMENTAL RATINGS

- TEMPERATURE: 0°C TO + 55°C (OPERATING)  
-85°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202G, METHOD 103B COND. B
- SHOCK: MIL-STD-202G, METHOD 213B COND. B
- VIBRATION: MIL-STD-202G, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202G, METHOD 105C COND. B
- TEMPERATURE CYCLES: MIL-STD-202G, METHOD 107G 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:  
XXX .0010  
XXX .0005  
XXX .0005

## MECHANICAL OUTLINE



ZONE	REV	DESCRIPTION	DATE	APPROVED
A		ORIGINAL RELEASE	02/08/19	

PMI CONFIDENTIAL AND PROPRIETARY

## PLANAR MONOLITHICS INDUSTRIES, INC.

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WEBSITE: WWW.PMI-RF.COM  
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ISO 9001:2008 CERTIFIED



APPROVALS	DATE	TITLE	SIZE	FORM NO.	FORM NO.	REV.
DESIGNED	02/08/19	PRODUCT FEATURE	A	05X00	27018693	A
CHECKED						
ISSUED						



# Typical Characteristics On P4T-60M20G-100-T-SFF

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TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range:	0.06 GHz – 20.0 GHz	<b>0.06 GHz – 20.0 GHz</b>	
2	Insertion Loss:	5.5 dB Max	<b>4.93dB See Plots</b>	
3	Isolation:	100 dB Min. 110 dB Typ.	<b>100.56dB See Plots</b>	
4	VSWR: (ON/OFF)	2.0:1 Max.	<b>Input 1.87:1 Output 1.99:1 See Plots</b>	
5	Switching Speed:	300 ns (10% - 90% RF) Typ.	<b>&lt; 50ns See Plots</b>	
6	Control Logic:	TTL Logic "0" = ON, "1" = OFF	<b>Pass</b>	
7	Survival Power:	+30 dBm ( 1 Watt )	<b>Pass</b>	
8	Operating Power:	+20 dBm Max	<b>Pass</b>	
9	*RF Phase Tracking:	2 Degree per Degree Celsius	<b>Pass</b>	
10	DC Supply:	+5VDC @ 200 mA Max -12VDC @ 100 mA Max	<b>102mA 46mA</b>	

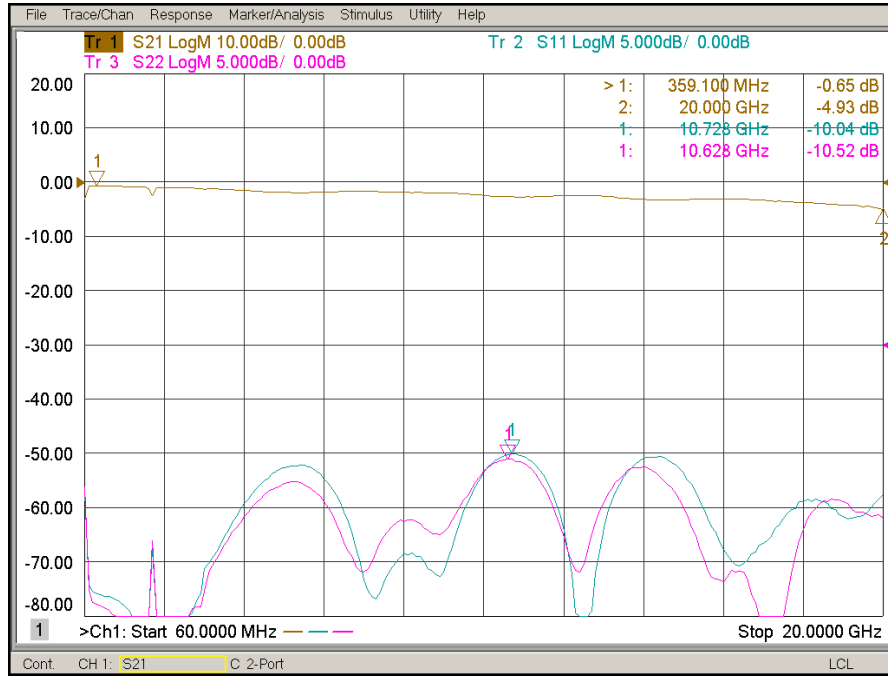
\*All Ports With Respect To  
Common With Temperature



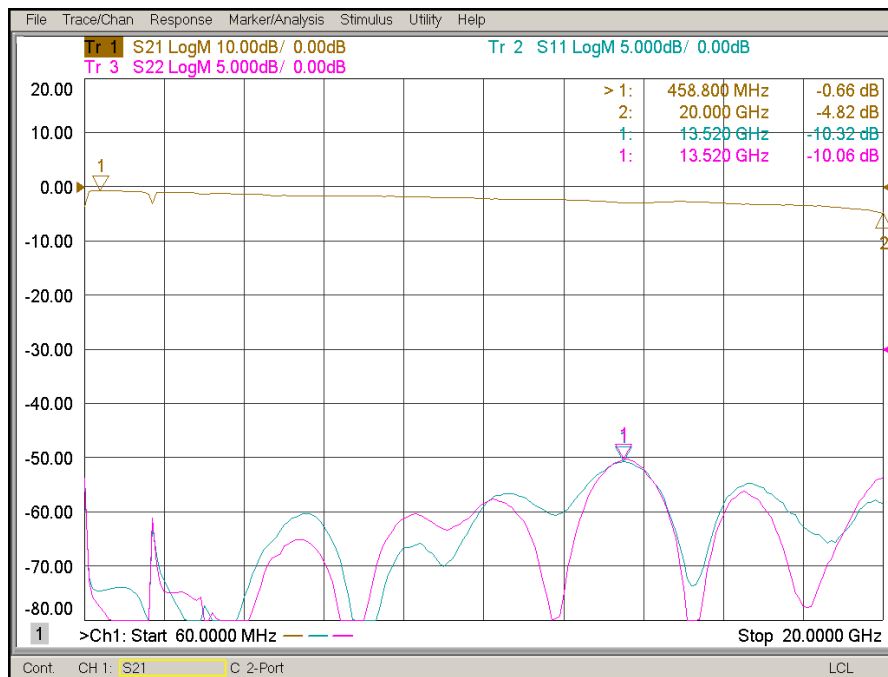
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## (J1-J2) Insertion Loss and Return Loss



## (J1-J3) Insertion Loss and Return Loss

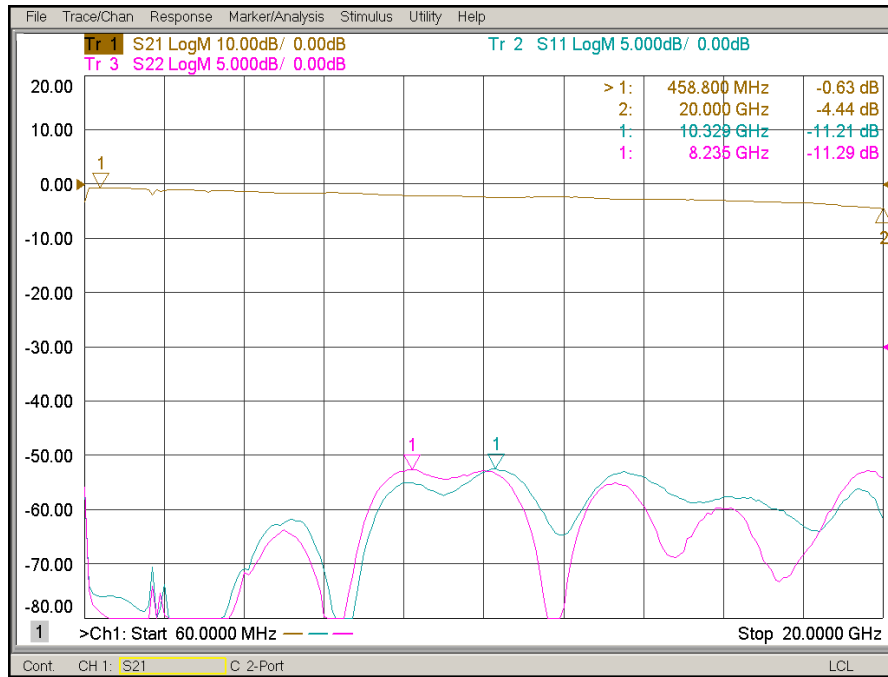




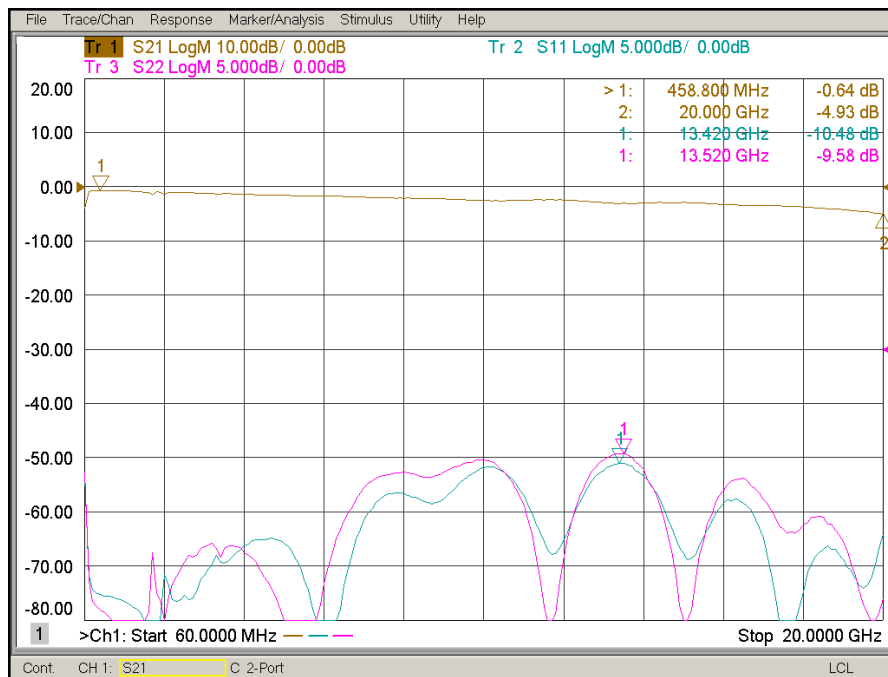
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## (J1-J4) Insertion Loss and Return Loss



## (J1-J5) Insertion Loss and Return Loss

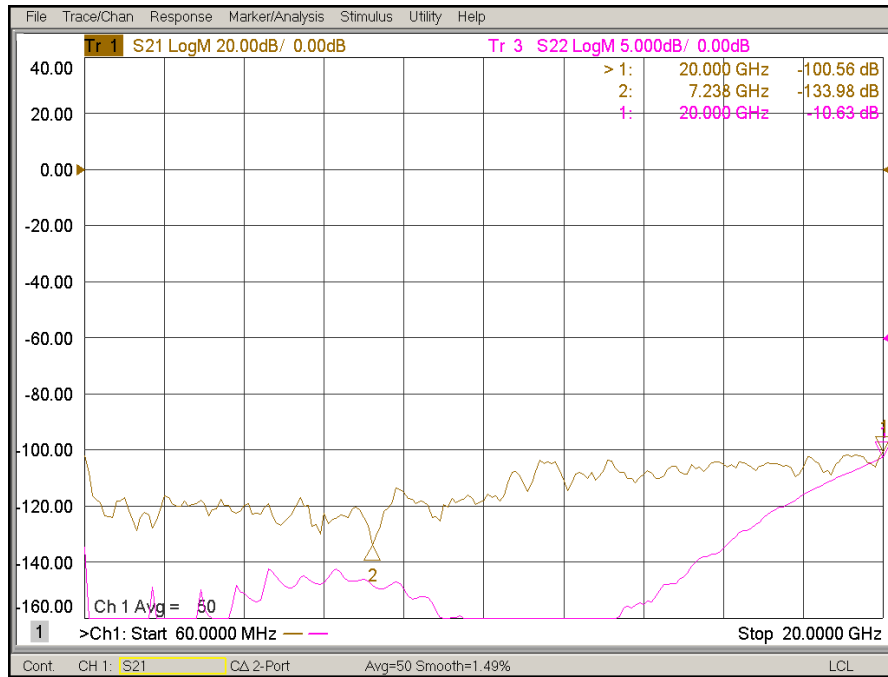




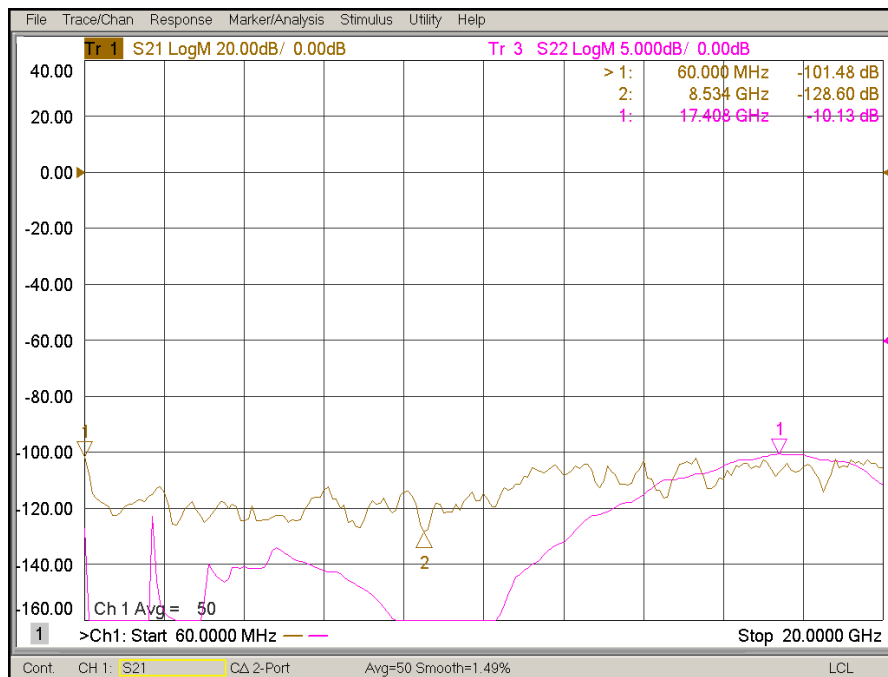
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## (J1 – J2) Isolation and Termination Return Loss



## (J1 – J3) Isolation and Termination Return Loss

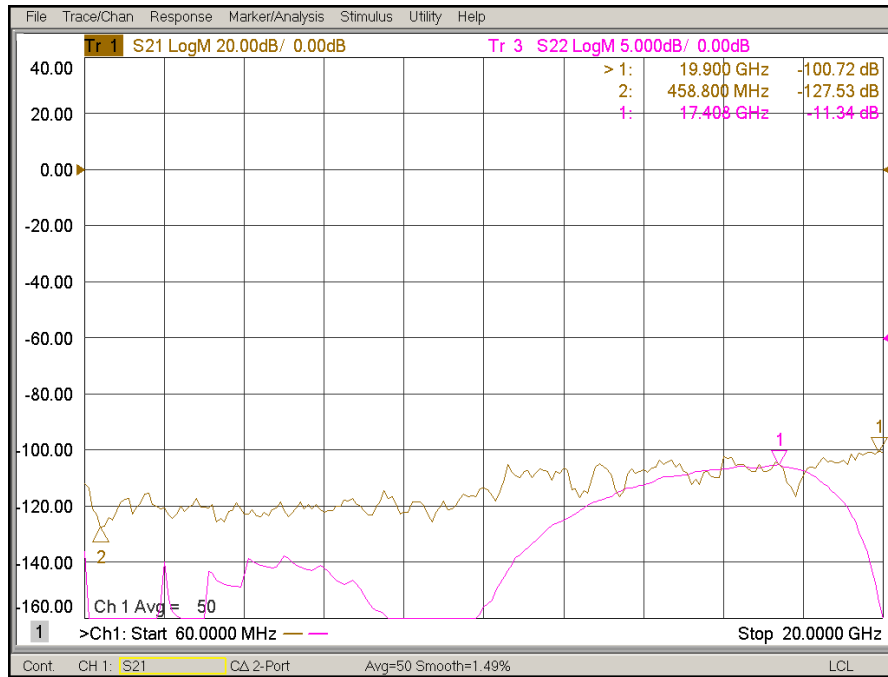




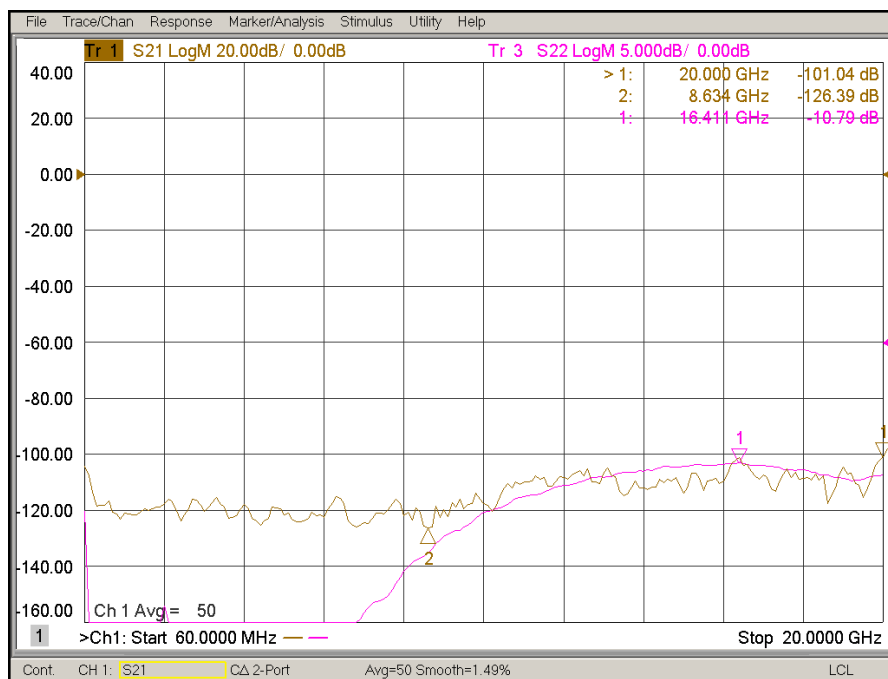
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## (J1 – J4) Isolation and Termination Return Loss



## (J1 – J5) Isolation and Termination Return Loss



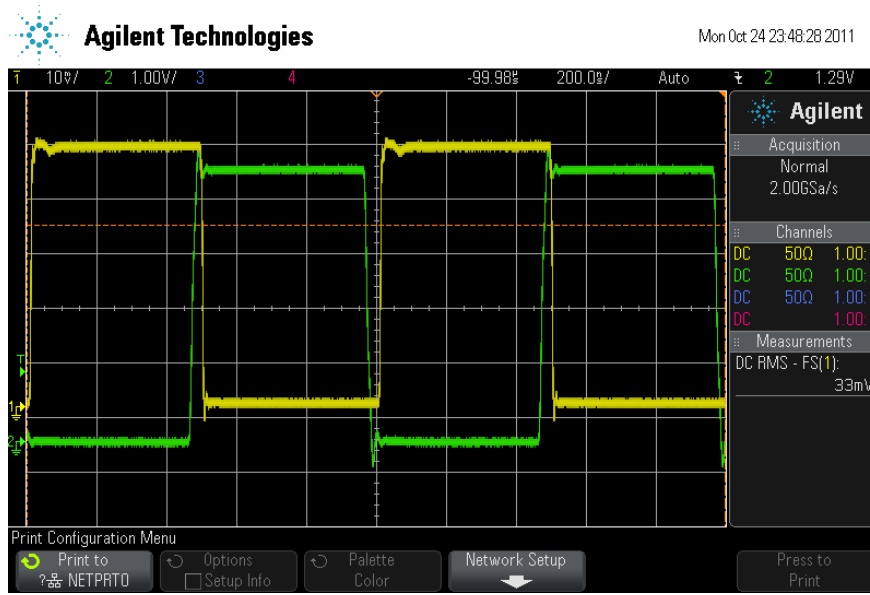


# Typical Characteristics On P4T-60M20G-100-T-SFF

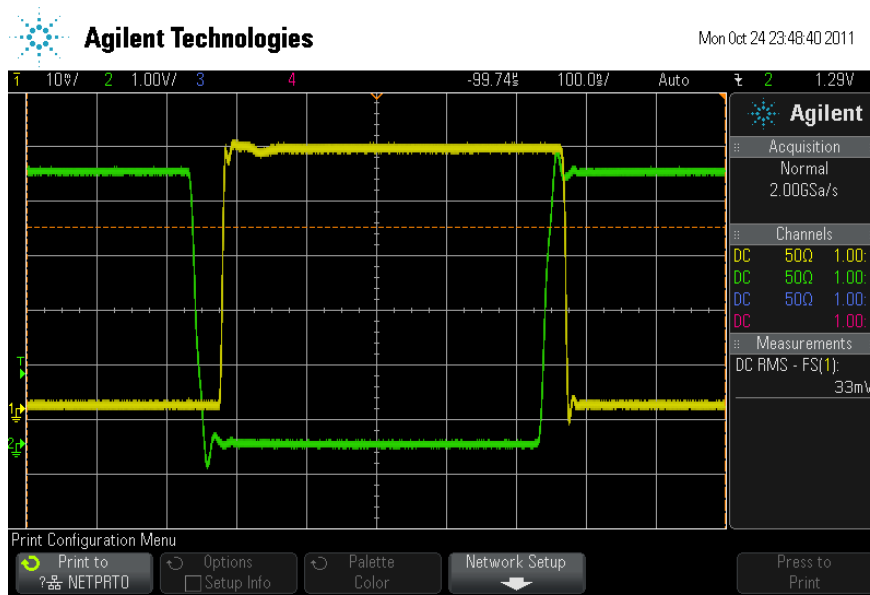
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## Switching Speed

### Full Pulse @ 200ns per Div.



### Full Pulse @ 100ns per Div.



Green Trace: TTL Signal  
Yellow Trace: RF Signal



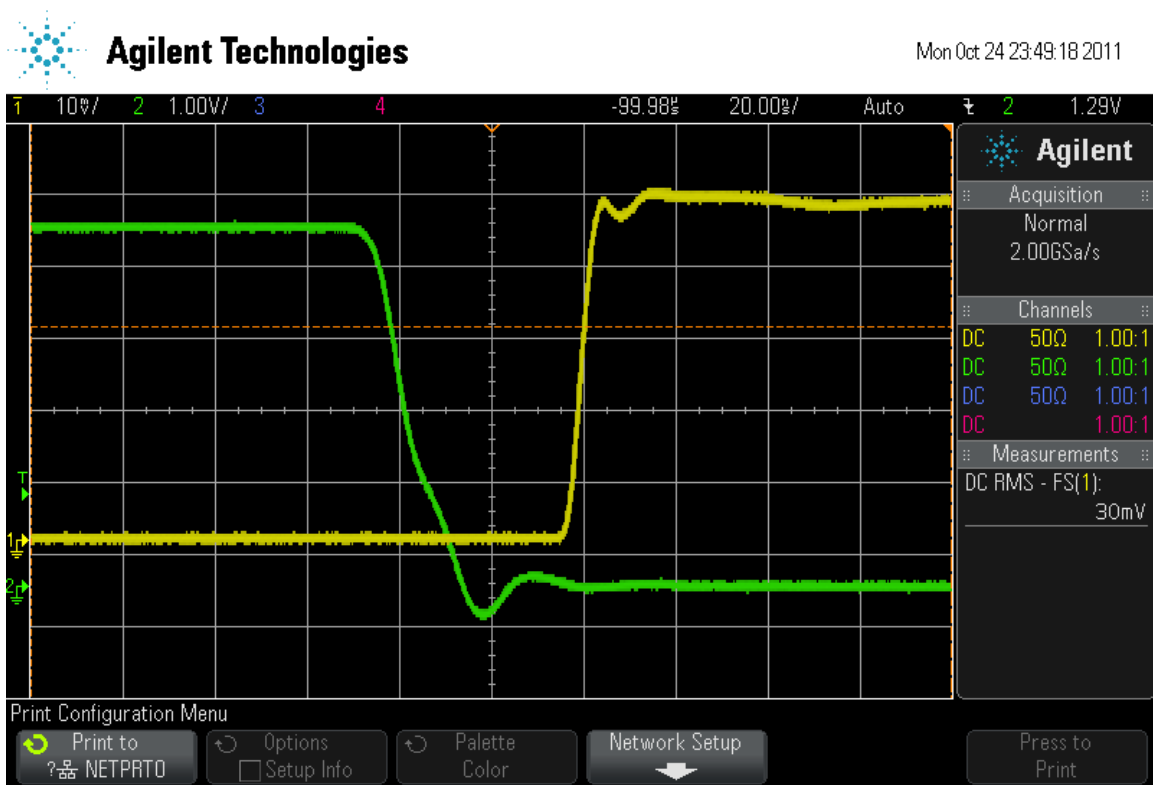


# Typical Characteristics On P4T-60M20G-100-T-SFF

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## Switching Speed

### ON Delay @ 20ns per Div.



Green Trace: TTL Signal  
Yellow Trace: RF Signal

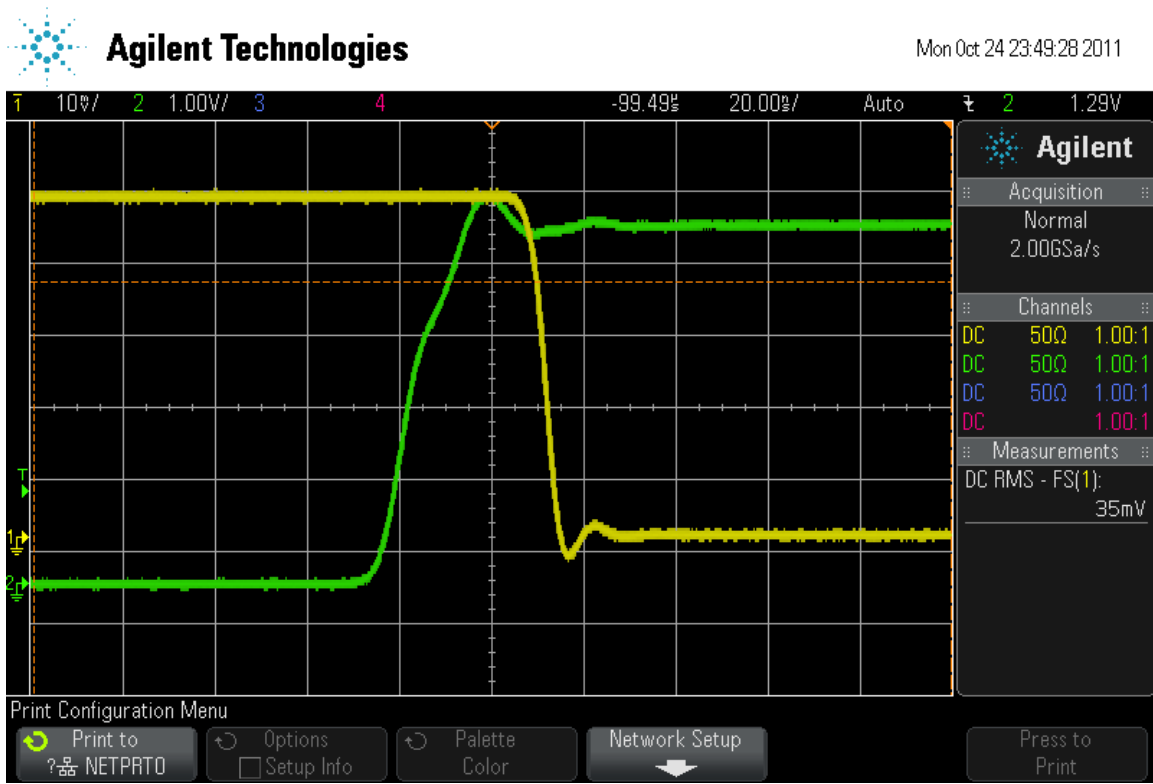


# Typical Characteristics On P4T-60M20G-100-T-SFF

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## Switching Speed

### OFF Delay @ 20ns per Div.



Green Trace: TTL Signal  
Yellow Trace: RF Signal