TYPICAL CHARACTERISTICS
ON
PXS-6G18G-60-T-SFF-SP

PMI MODEL: PXS-6G18G-60-T-SFF-SP IS AN ABSORPTIVE, HIGH SPEED, TWO POLE TRANSFER SWITCH CAPABLE OF SWITCHING WITHIN 70 ns MAXIMUM. THE FREQUENCY RANGE IS 6.0 GHz TO18.0 GHz. THIS SWITCH HAS > 60 dB ISOLATION.

August 16, 2021

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OUTLINE DRAWING

DESCRIPTION

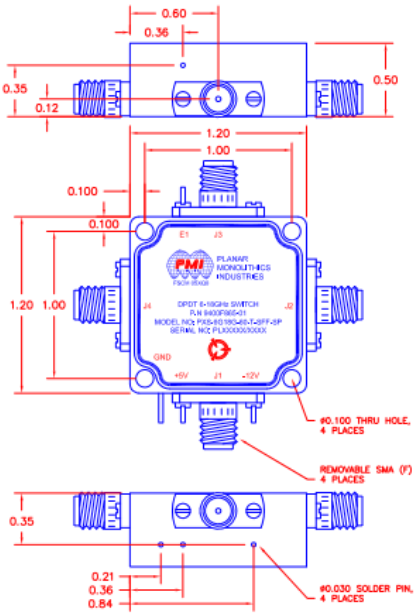
PMI MODEL PXS-6G18G-60-T-SFF-SP IS AN ABSORPTIVE, HIGH SPEED, TWO POLE TRANSFER SWITCH CAPABLE OF SWITCHING WITHIN 70 ns MAXIMUM. THE FREQUENCY RANGE IS 6.0 GHz TO 18.0 GHz. THIS SWITCH HAS > 60 dB ISOLATION.

SPECIFICATIONS

- FREQUENCY RANGE: 6.0 GHz TO 18.0 GHz
- IMPEDANCE: 50 Ω
- INPUT POWER: +27dBm (0.5 WATT) MAX
- INPUT/OUTPUT VSWR: 2.0:1 MAX
- INSERTION LOSS: 3.5dB MAX
- INSERTION LOSS RIPPLE: ±0.75dB MAX
- ISOLATION: 60dB MIN
- SWITCHING SPEED: 70ns MAX (50% TTL TO 10%/90% RF)
- RISE/FALL TIME: 70ns (10%/90% RF)
- SWITCHING RATE PRF: 1 MHz
- VIDEO LEAKAGE: 50mv P-P at 350MHz BW
- DC VOLTAGE: +5VDC (±5%) / 120mA MAX (VDC + CTL LINES)
  −12VDC (±5%) / 120mA MAX
- CONTROL: SOLDER PIN
  TTL LOGIC – SEE TABLE
  *SURGE PROTECTION INCLUDED ON TTL LINES
- CONNECTORS IN/OUT: SMA (F)
- SIZE: (L) 1.2" X (W) 1.2" X (H) 0.5"
- FINISH: BLUE EPOXY POLIMIDE COATING IAW MIL-C-22750, TYPE I OVER EPOXY POLIMIDE PRIMER IAW MIL-P-23377, TYPE I, CLASS 1 OR 3.
- SEALING: CONDUCTIVE HARD EPOXY SEAL, UNLESS OTHERWISE SPECIFIED

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	5/19/2020	
	A2	ECN # 21-0136	8/16/2021	

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

TTL LOGIC TABLE

TTL LOGIC	LOW LOSS	ISOLATION
"0" 1.6mA Max Sink @ 0.4V	J1 – J2 J3 – J4	J1 – J4 J2 – J3
"1" 40uA Max Sink @ 2.4V	J1 – J4 J2 – J3	J1 – J2 J3 – J4

ENVIRONMENTAL RATINGS (Designed to Meet)

- **TEMPERATURE:** −45°C TO + 85°C (OPERATING)
  −54°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
- **SALT AND FOG:** MIL-STD-202F, METHOD 101D-EST COND. B
- **THERMAL SHOCK:** MIL-STD-202F, METHOD 101D COND. A
- **FUNGUS:** MIL-STD-810F, METHOD 508.5
- **EMI/EMC:** MIL-STD-461E

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.
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E-MAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED

APPROVALS	DATE
DRAWN YPH	5/19/2020
CHECKED	
ISSUED	

TITLE: PRODUCT FEATURE
PXS-6G18G-60-T-SFF-SP

SIZE	FSCM NO.	DWG NO.	REV.
A	05XQ0	27038940	A2

SCALE N:S SHEET 1 OF 1

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TYPICAL CHARACTERISTICS ON PXS-6G18G-60-T-SFF-SP

TEST DATA SUMMARY AT 25°C

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range	6.0 TO 18.0 GHz	6.0 TO 18.0 GHz	
2	Impedance	50 Ohms	50 Ohms	
3	Insertion Loss	3.5 dB Max	2.8 dB See Plot	
4	Insertion Loss Ripple	±0.75 dB Max	Pass	
5	VSWR	2.0:1 Max	1.86:1 See Plots	
6	Isolation	60 dB Min	76.98 dB See Plot	
7	Switching Speed	70 ns Max (50% TTL to 10% / 90% RF)	67.8 ns	
8	Rise/ Fall Time	70 ns Max (10% / 90% RF)	Rise Time: 19.7 ns Fall Time: 6.3 ns	
9	Switching Rate PRF	1 MHz	1 MHz	
10	Video Leakage	50 mV P-P at 350 MHz BW	600µV	
11	Input Power	+27 dBm (0.5 WATT) Max	Pass By Design	
12	DC Supply	+5 VDC (±5%) / 120 mA Max (VDC + CTL Lines) -12 VDC (±5%) / 120 mA Max	+5 VDC @ 50 mA -12 VDC @ 72 mA	
13	Control Signal	TTL LOGIC "0" J1-J2, J3-J4 = Insertion Loss J1-J4, J2-J3 = Isolation TTL LOGIC "1" J1-J4, J2-J3 = Insertion Loss J1-J2, J3-J4 = Isolation	Pass	

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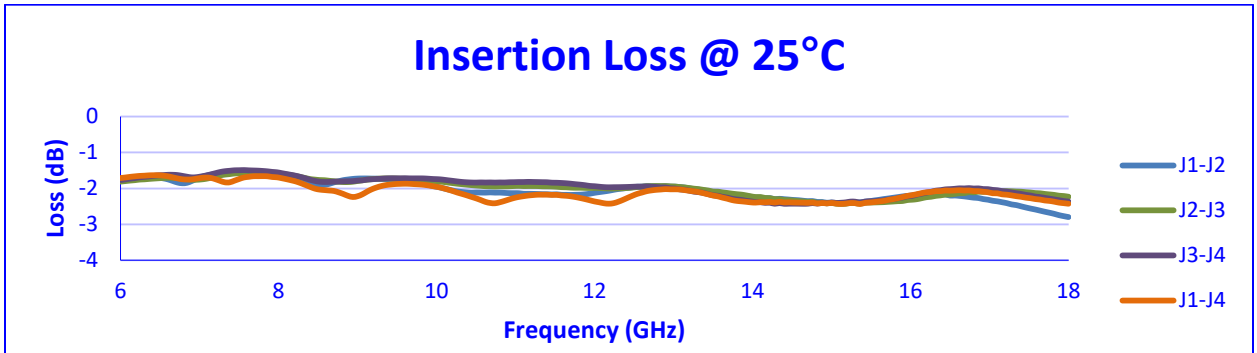

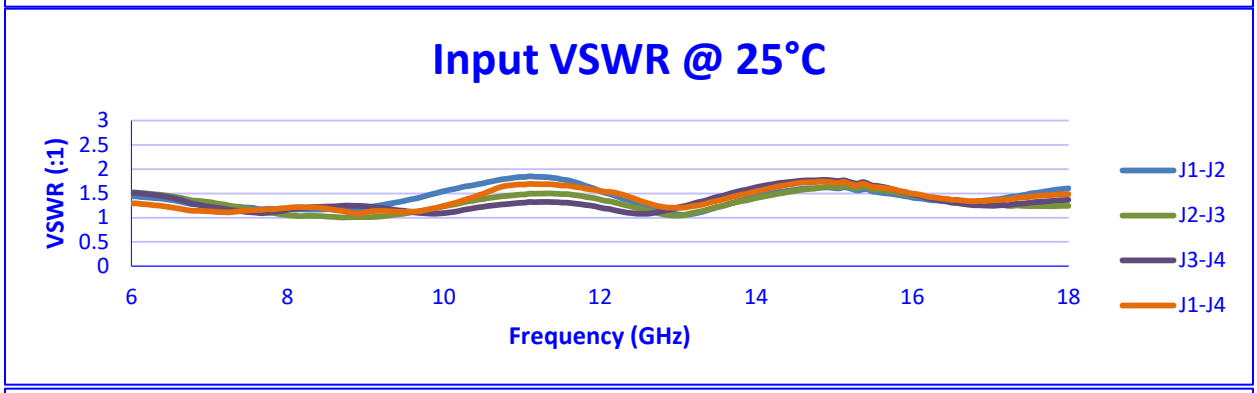

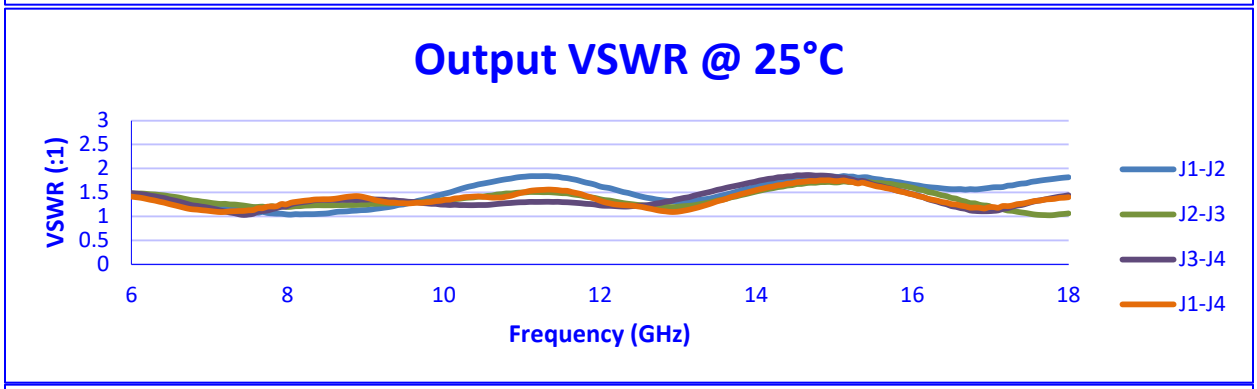

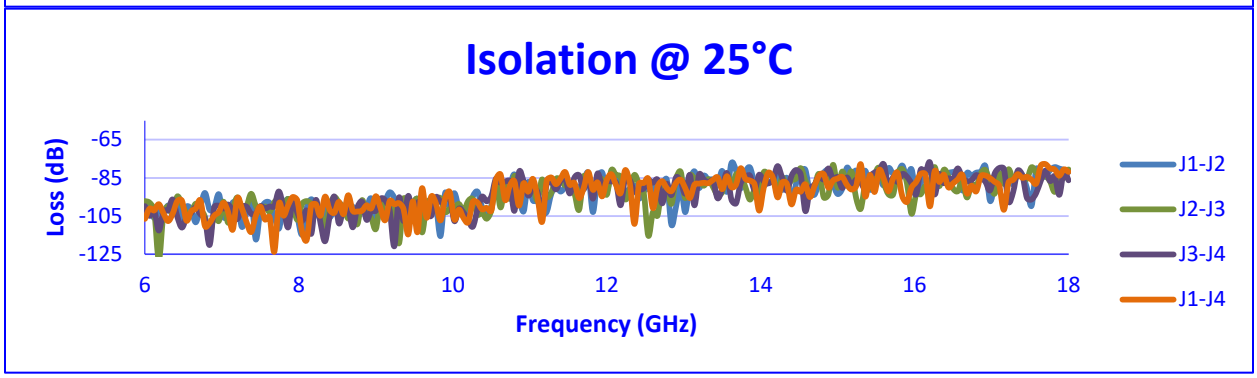

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TEST DATA SUMMARY AT -45°C

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range	6.0 TO 18.0 GHz	6.0 TO 18.0 GHz	
2	Impedance	50 Ohms	50 Ohms	
3	Insertion Loss	3.5 dB Max	2.59 dB See Plot	
4	Insertion Loss Ripple	±0.75 dB Max	Pass	
5	VSWR	2.0:1 Max	1.97:1 See Plots	
6	Isolation	60 dB Min	76.8 dB See Plot	
7	DC Supply	+5 VDC (±5%) / 120 mA Max (VDC + CTL Lines) -12 VDC (±5%) / 120 mA Max	+5 VDC @ 50 mA -12 VDC @ 72 mA	
8	Control Signal	TTL LOGIC "0" J1-J2, J3-J4 = Insertion Loss J1-J4, J2-J3 = Isolation TTL LOGIC "1" J1-J4, J2-J3 = Insertion Loss J1-J2, J3-J4 = Isolation	Pass	

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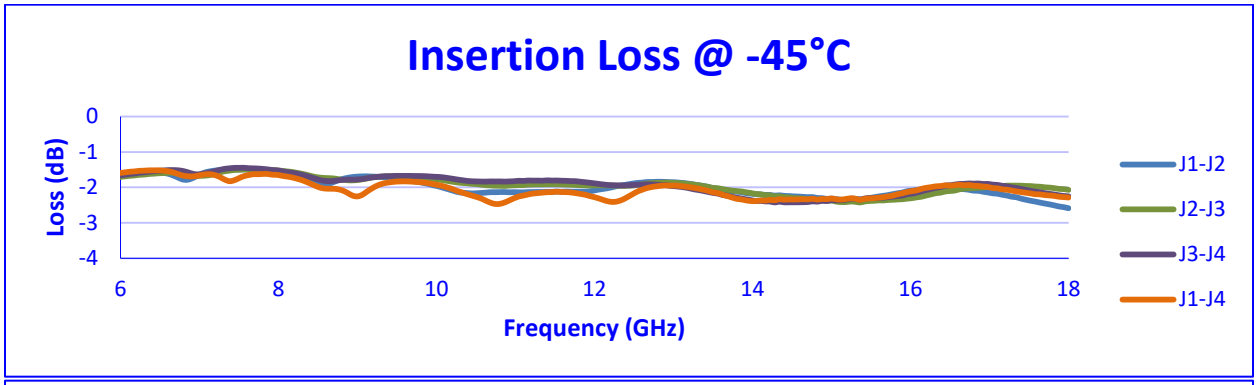
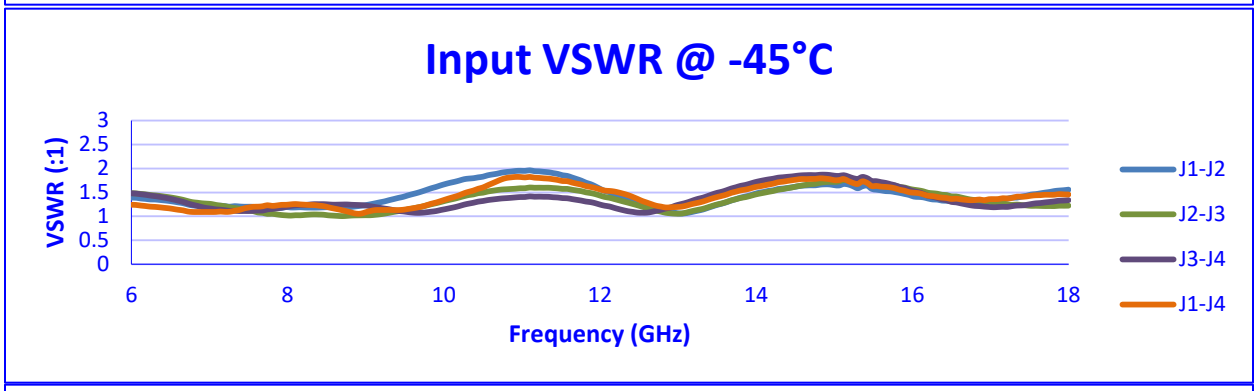
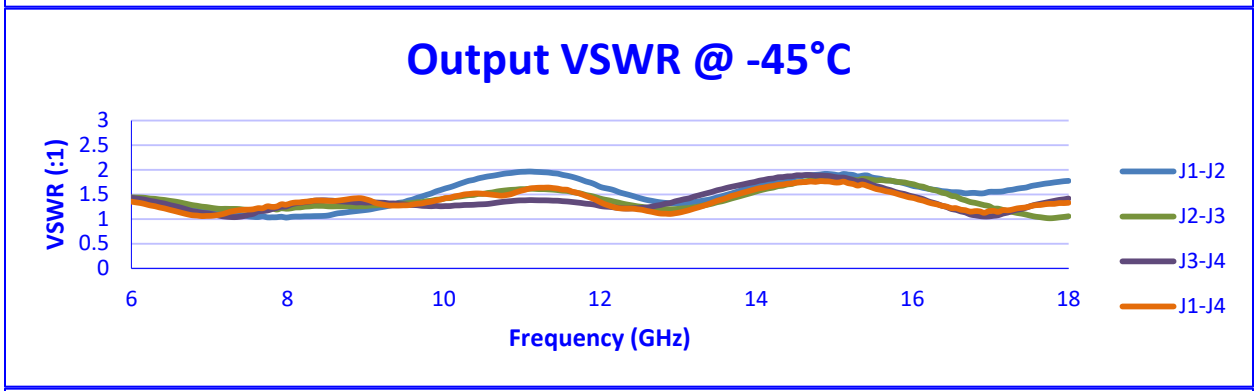
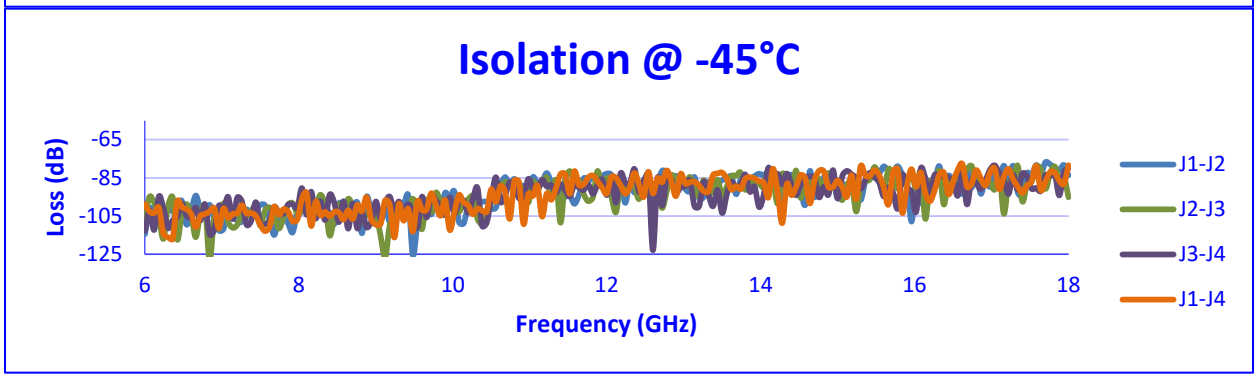
TYPICAL CHARACTERISTICS ON PXS-6G18G-60-T-SFF-SP









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TEST DATA SUMMARY AT 85°C

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range	6.0 TO 18.0 GHz	6.0 TO 18.0 GHz	
2	Impedance	50 Ohms	50 Ohms	
3	Insertion Loss	3.5 dB Max	3.02 dB See Plot	
4	Insertion Loss Ripple	±0.75 dB Max	Pass	
5	VSWR	2.0:1 Max	1.85:1 See Plots	
6	Isolation	60 dB Min	75.6 dB See Plot	
7	DC Supply	+5 VDC (±5%) / 120 mA Max (VDC + CTL Lines) -12 VDC (±5%) / 120 mA Max	+5 VDC @ 50 mA -12 VDC @ 72 mA	
8	Control Signal	TTL LOGIC "0" J1-J2, J3-J4 = Insertion Loss J1-J4, J2-J3 = Isolation TTL LOGIC "1" J1-J4, J2-J3 = Insertion Loss J1-J2, J3-J4 = Isolation	Pass	

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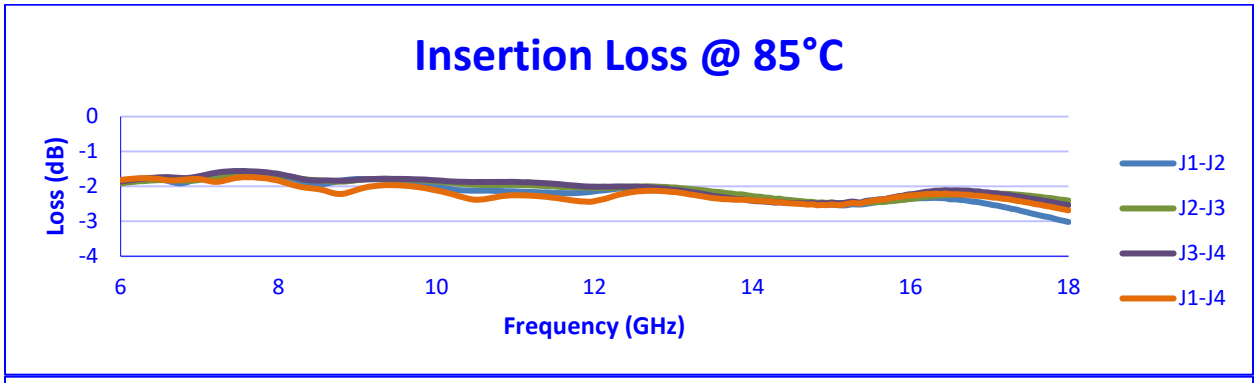
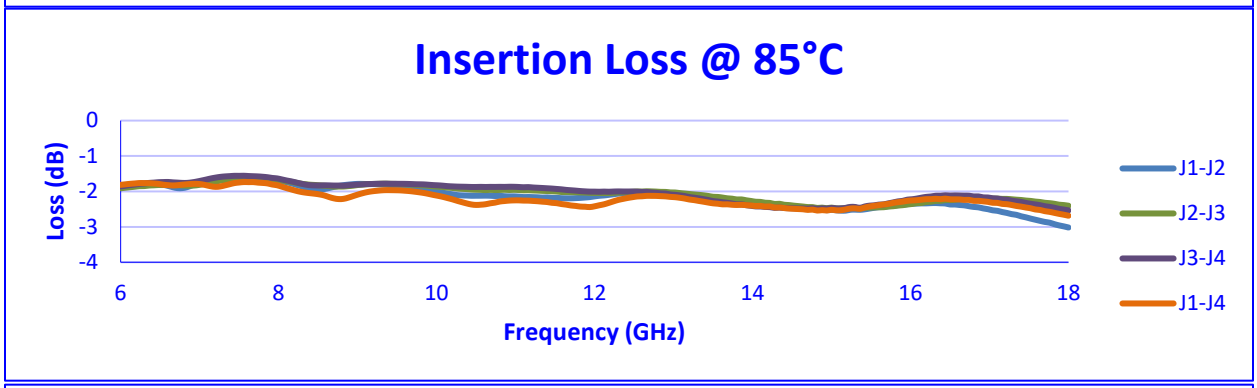
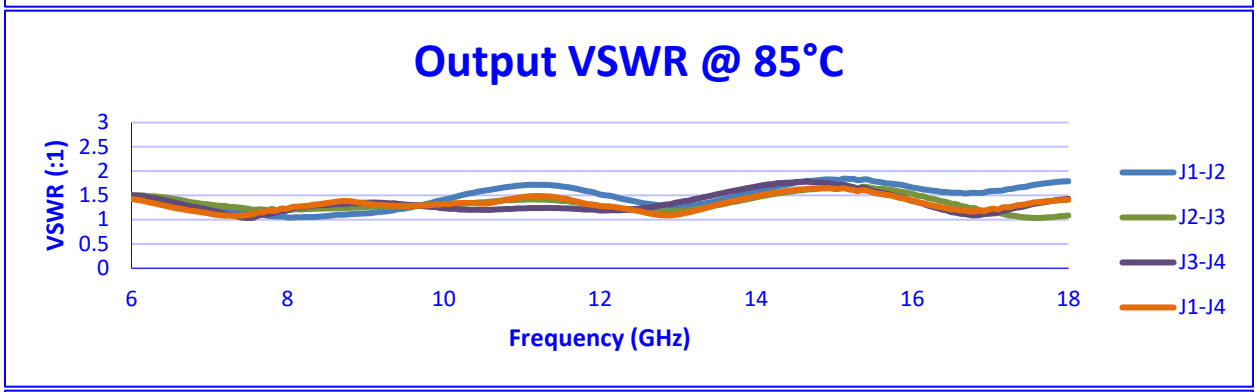
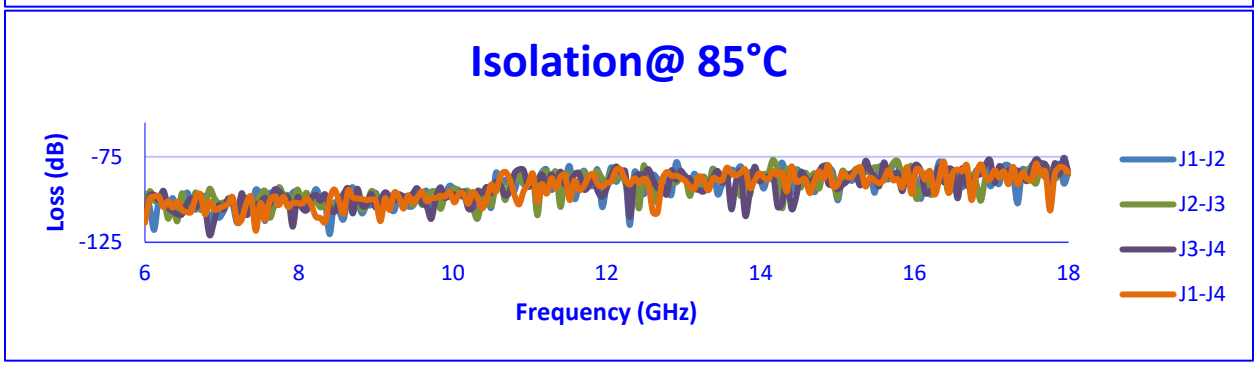
TYPICAL CHARACTERISTICS ON PXS-6G18G-60-T-SFF-SP









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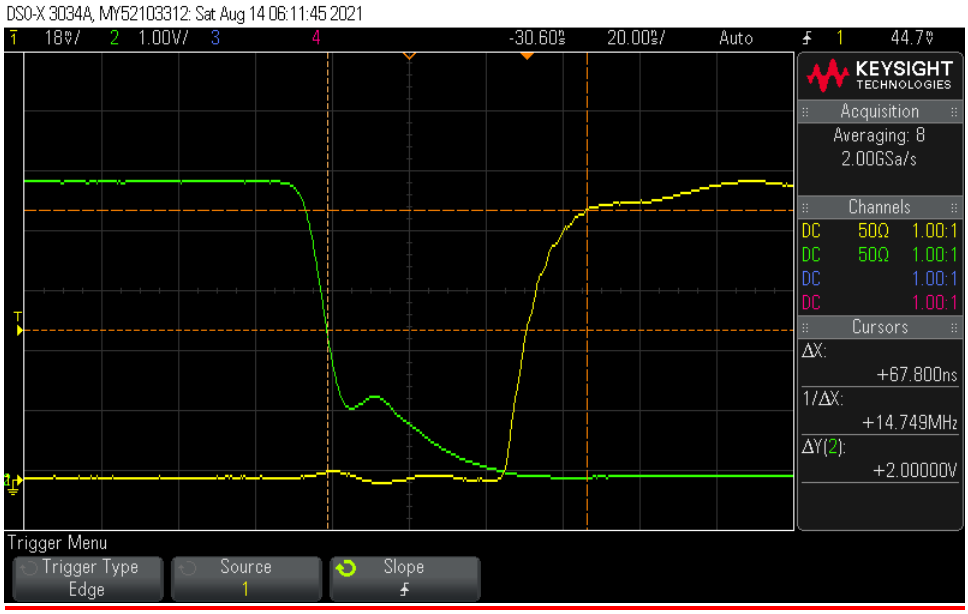
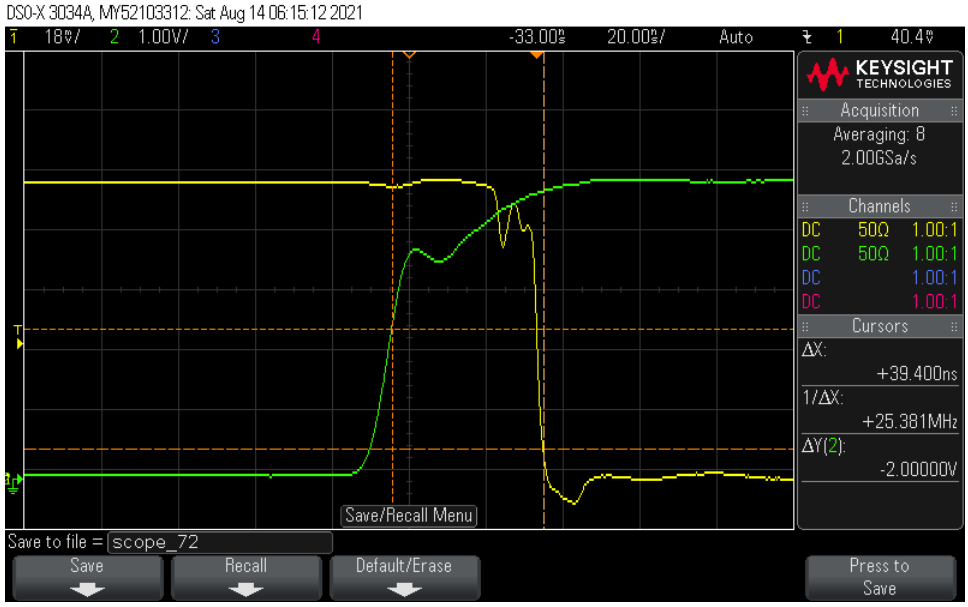
Delay ON
20.0 ns Per Div.
Measured Value(67.8ns)



Delay OFF
20.0 ns Per Div.
Measured Value(39.4ns)



GREEN = TTL SIGNAL
YELLOW = RF SIGNAL

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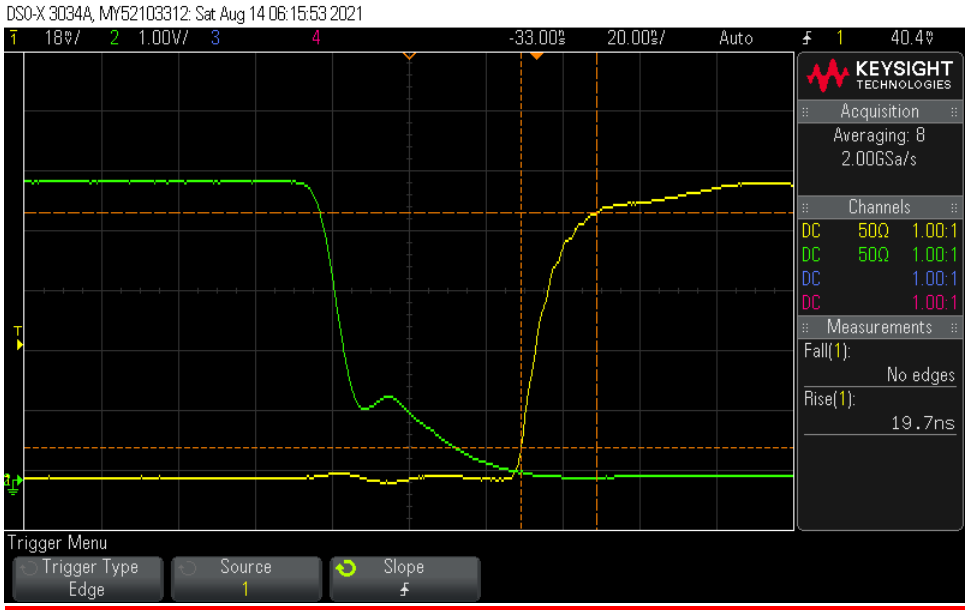
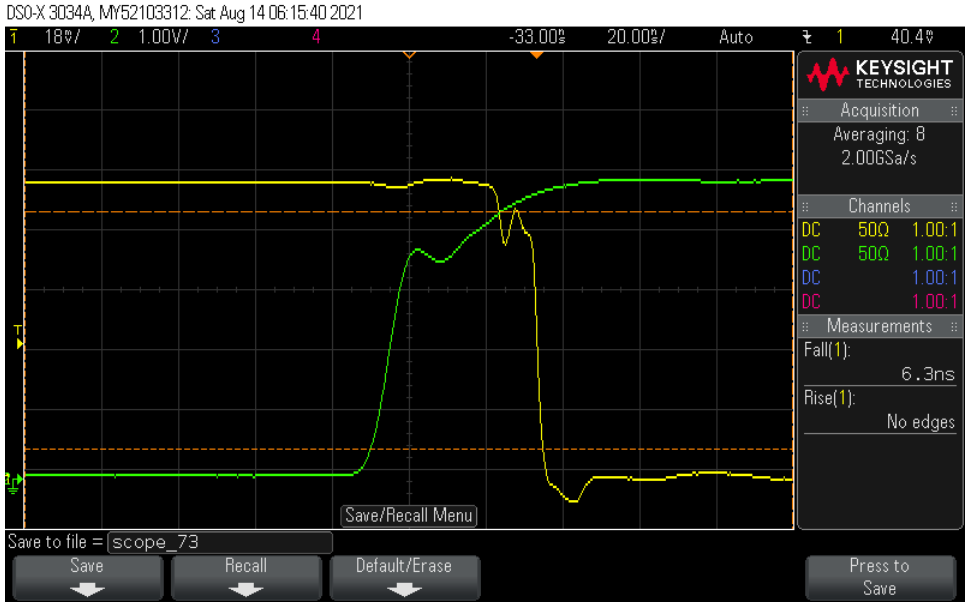
RISE TIME
20.0 ns Per Div.
Measured Value(19.7ns)



FALL TIME
20.0 ns Per Div.
Measured Value(6.3ns)



GREEN = TTL SIGNAL
YELLOW = RF SIGNAL

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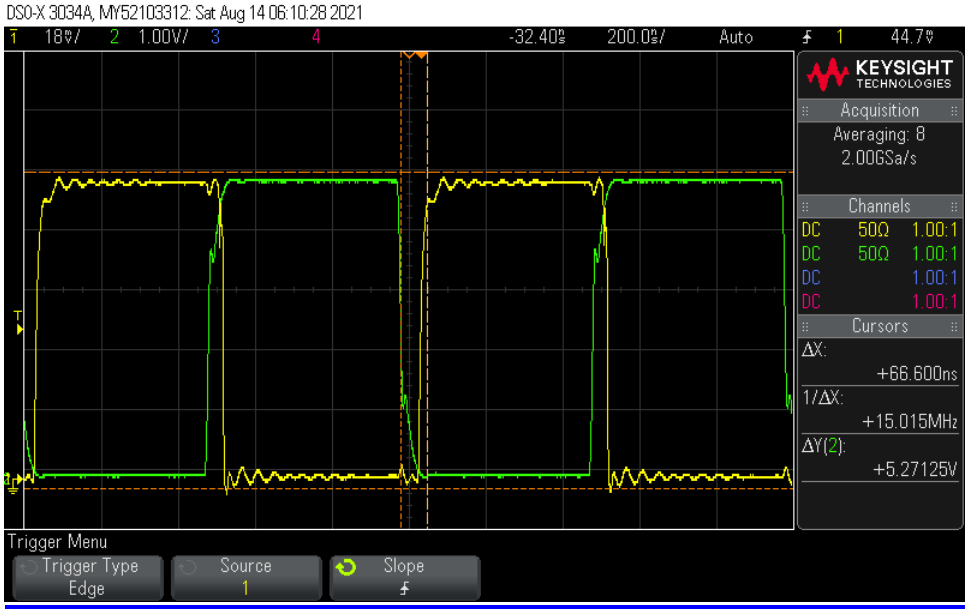
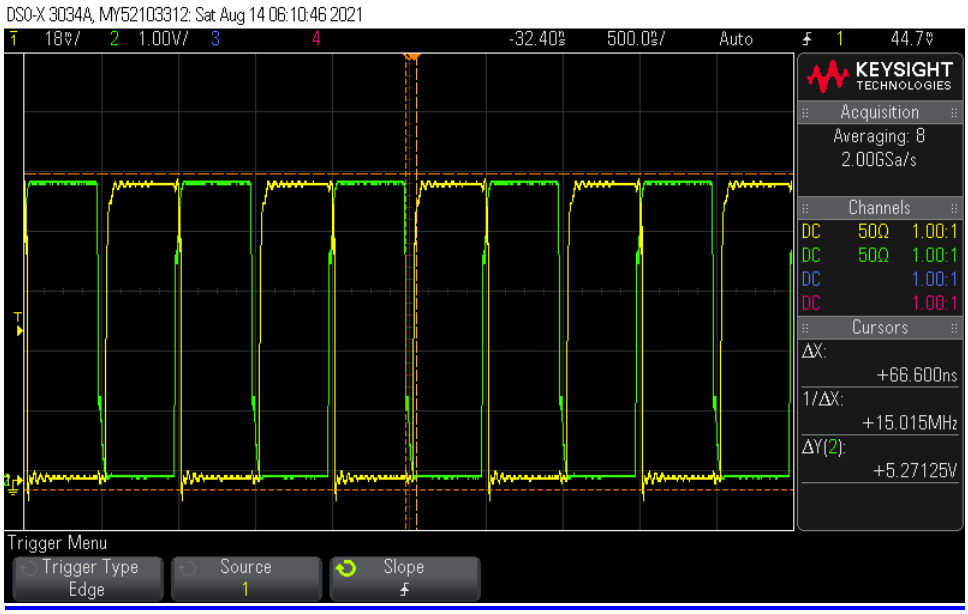
FULL PULSE





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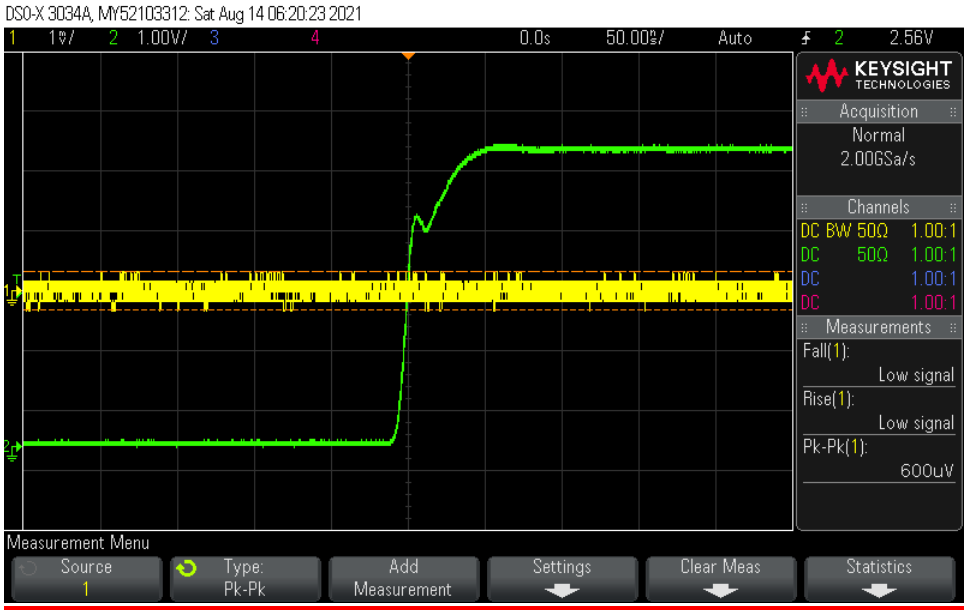
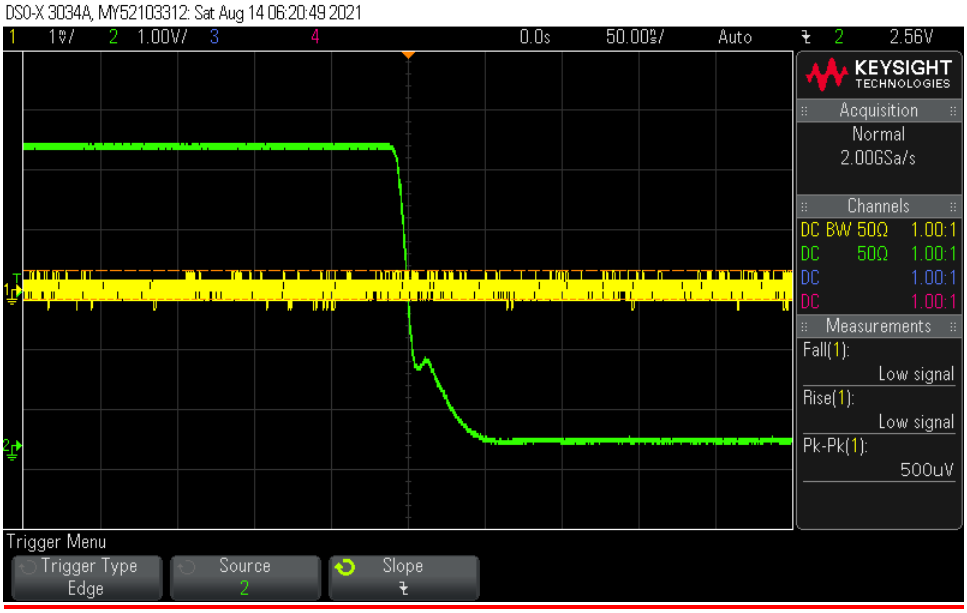
VIDEO LEAKAGE – TOGGLE HIGH

Measured Value(600µV)



VIDEO LEAKAGE – TOGGLE LOW

Measured Value(500µV)



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