



**Typical Characteristics
ON
P3T-9R5G10G-55-R-SFF**

**PMI MODEL NO. P3T-9R5G10G-55-R-SFF IS A SINGLE POLE, THREE THROW,
AND REFLECTIVE SWITCH THAT OPERATES OVER THE FREQUENCY RANGE OF
9.5 TO 10.0 GHz. IT HAS A MAXIMUM INSERTION LOSS OF 1.5 dB AND A TYPICAL
ISOLATION OF 55 dB. THIS PRODUCT IS OUTFITTED WITH SMA FEMALE
CONNECTORS.**



July 09, 2019

Designed By: Engineering PMI

**Tested and Reported By:
Alfredo Lopez**



Typical Characteristics ON P3T-9R5G10G-55-R-SFF

Outline Drawing

DESCRIPTION

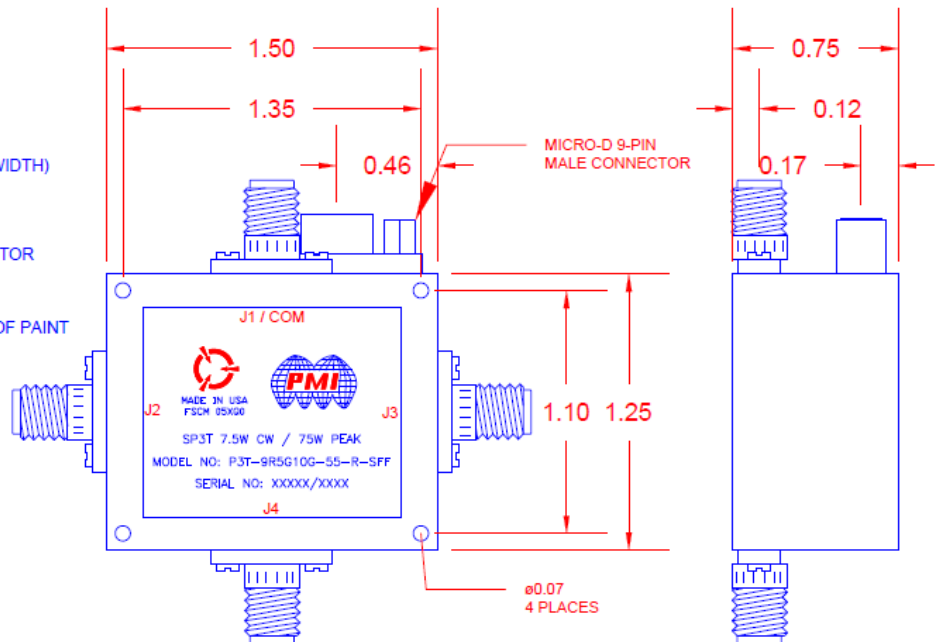
PMI MODEL NO. P3T-9R5G10G-55-R-SFF IS A SINGLE POLE, THREE THROW, REFLECTIVE SWITCH THAT OPERATES OVER THE FREQUENCY RANGE OF 9.5 TO 10.0 GHz. IT HAS A MAXIMUM INSERTION LOSS OF 1.5 dB AND A TYPICAL ISOLATION OF 55 dB. THIS PRODUCT IS OUTFITTED WITH SMA FEMALE CONNECTORS.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	03/14/19	

SPECIFICATIONS

- FREQUENCY RANGE: 9.5 TO 10.0 GHz
- INSERTION LOSS: 1.5 dB MAX
- ISOLATION: 55 dB TYP
- VSWR: 1.5:1 TYP
- AVERAGE POWER: 7.5 WATTS
- PEAK POWER: 75 WATTS (62 us MAX PULSE WIDTH)
- SWITCHING SPEED: 1.0 us MAX
- RF CONNECTORS: SMA FEMALE
- CONTROL: MICRO-D 9-PIN MALE CONNECTOR
- POWER SUPPLY: +5 V @ 250 mA
-28 V @ 50 mA
- FINISH: BLUE. MOUNTING SIDE FREE OF PAINT

MECHANICAL OUTLINE



9-PIN CONNECTOR PIN	INPUT
1	+5 VDC
2	GND
3	-28 VDC
4	GND
5	T2: J2 TTL
6	T3: J3 TTL
7	T4: J4 TTL
8	GND
9	GND

LOGIC CONTROL TABLE			
LOGIC	SIGNAL PATH		
1	0		
T2	T3&T4	J1 TO J2	
T3	T2&T4	J1 TO J3	
T4	T2&T3	J1 TO J4	

"0" = OFF
"1" = ON

ENVIRONMENTAL RATINGS

- TEMPERATURE: -60 °C TO +85 °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

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

PLANAR MONOLITHICS INDUSTRIES, INC.

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ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE			
DRAWN: <i>B.Thomas</i>		03/14/19	PRODUCT FEATURE P3T-9R5G10G-55-R-SFF			
REDRAWN:			SIZE: A	FSCM NO: 05XQ0	DWG NO: 27036022	REV: A1
ISSUED:			SCALE: N:S		SHEET: 1 OF 1	



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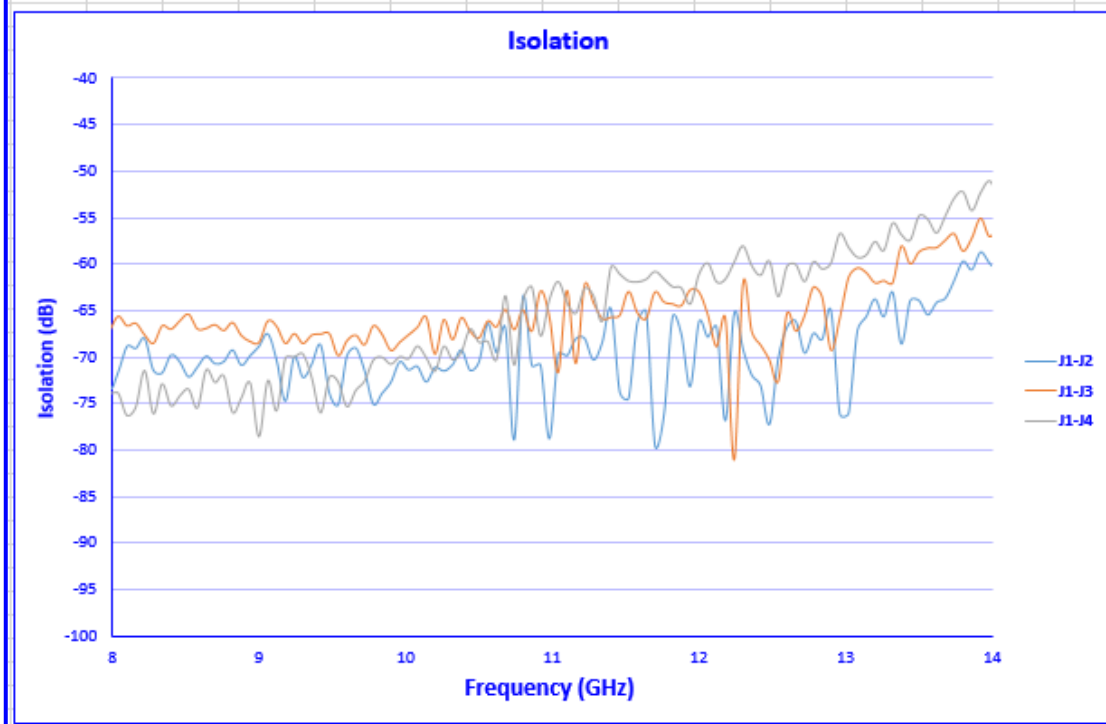
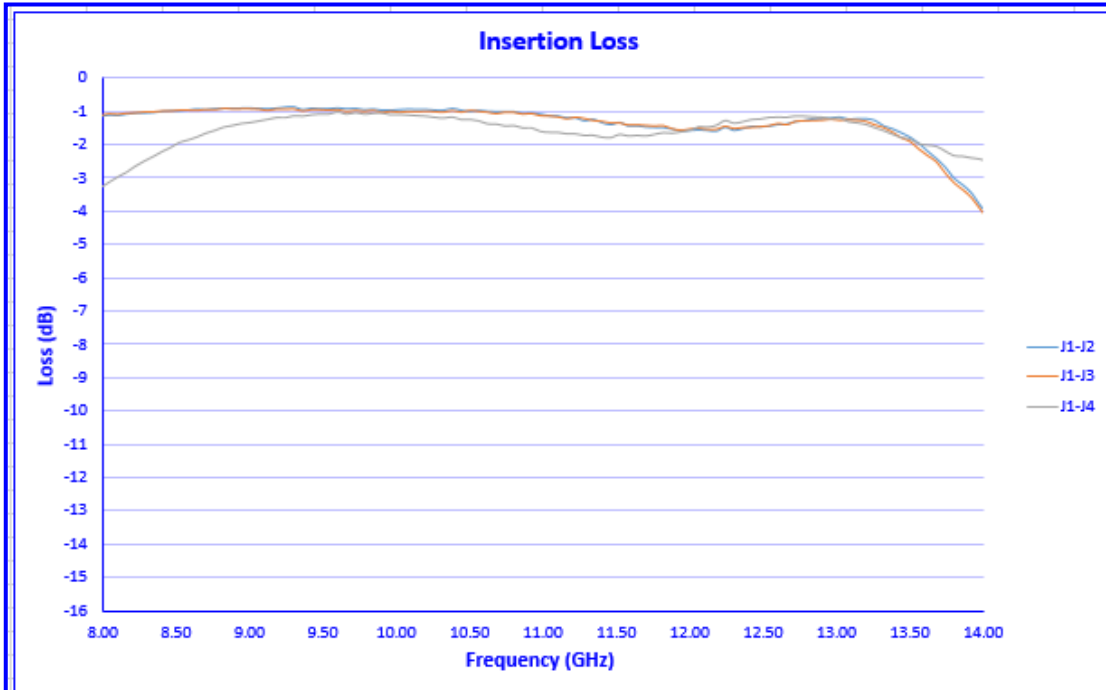
Technical Specification

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			Q A Q C
			-60°C	+25°C	+85°C	
1	Frequency Range:	9.5 GHz TO 10.0 GHz	Tested 8 to 14GHz Spec 9.5 to 10GHz (See Plots)	Tested 8 to 14GHz Spec 9.5 to 10GHz (See Plots)	Tested 8 to 14GHz Spec 9.5 to 10GHz (See Plots)	
2	Isolation:	55 dB Typ	8 to 8.5GHz – 65.42 dB 8.5 TO 9GHz – 65.82 dB 10 to 12GHz – 58.21 dB 12 to 13.5GHz – 56.59 13.5 to 14GHz – 51.31 (See Plots)	8 to 8.5GHz – 65.34 dB 8.5 TO 9GHz – 65.34 dB 10 to 12GHz – 60.27 dB 12 to 13.5GHz – 54.80 13.5 to 14GHz – 51.01 (See Plots)	8 to 8.5GHz – 65.23 dB 8.5 TO 9GHz – 65.97 dB 10 to 12GHz – 57.25 dB 12 to 13.5GHz – 53.10 13.5 to 14GHz – 50.04 (See Plots)	
3	Insertion Loss:	1.5 dB Max	8 to 8.5GHz – 3.55 dB 8.5 TO 9GHz – 1.98 dB 10 to 12GHz – 1.72 dB 12 to 13.5GHz – 1.68 dB 13.5 to 14GHz – 3.86 dB (See Plots)	8 to 8.5GHz – 3.13 dB 8.5 TO 9GHz – 1.93 dB 10 to 12GHz – 1.79 dB 12 to 13.5GHz – 1.90 dB 13.5 to 14GHz – 4.27 dB (See Plots)	8 to 8.5GHz – 3.04 dB 8.5 TO 9GHz – 1.90 dB 10 to 12GHz – 1.76 dB 12 to 13.5GHz – 2.03 dB 13.5 to 14GHz – 4.54 dB (See Plots)	
4	VSWR:	1.5:1 Typ	8 to 8.5GHz – 3.50:1 8.5 to 9GHz – 2.2:1 10 to 12GHz – 2.27:1 12 to 13.5GHz – 2.0:1 13.5 to 14GHz – 3.80:1 (See Plots)	8 to 8.5GHz – 3.72:1 8.5 to 9GHz – 2.40:1 10 to 12GHz – 2.55:1 12 to 13.5GHz – 2.20:1 13.5 to 14GHz – 3.07:1 (See Plots)	8 to 8.5GHz – 3.32:1 8.5 to 9GHz – 3.32:1 10 to 12GHz – 2.15:1 12 to 13.5GHz – 1.99:1 13.5 to 14GHz – 3.99:1 (See Plots)	
5	Average Power	7.5 W	Pass (See Graphs)	Pass (See Graphs)	Pass (See Graphs)	
6	Peak Power	75W W (62 us Max Pulse Width)	Pass (See Graphs)	Pass (See Graphs)	Pass (See Graphs)	
7	Switching Speed	1 us Max	ON: 65.20ns OFF:49.40ns Rise Time:15.80ns Fall Time: 3.5ns			
8	Logic Control	“T2” J1-J2 Insertion Loss “T3” J1-J3 Insertion Loss “T4” J1-J4 Insertion Loss	Pass			
9	DC Power	+5 VDC/250mA Typ. and -28VDC/50mA Typ.	+5V@ 238mA -28V@ 20mA	+5V@ 237mA -28V@ 20mA	+5V@ 240mA -28V@ 20mA	



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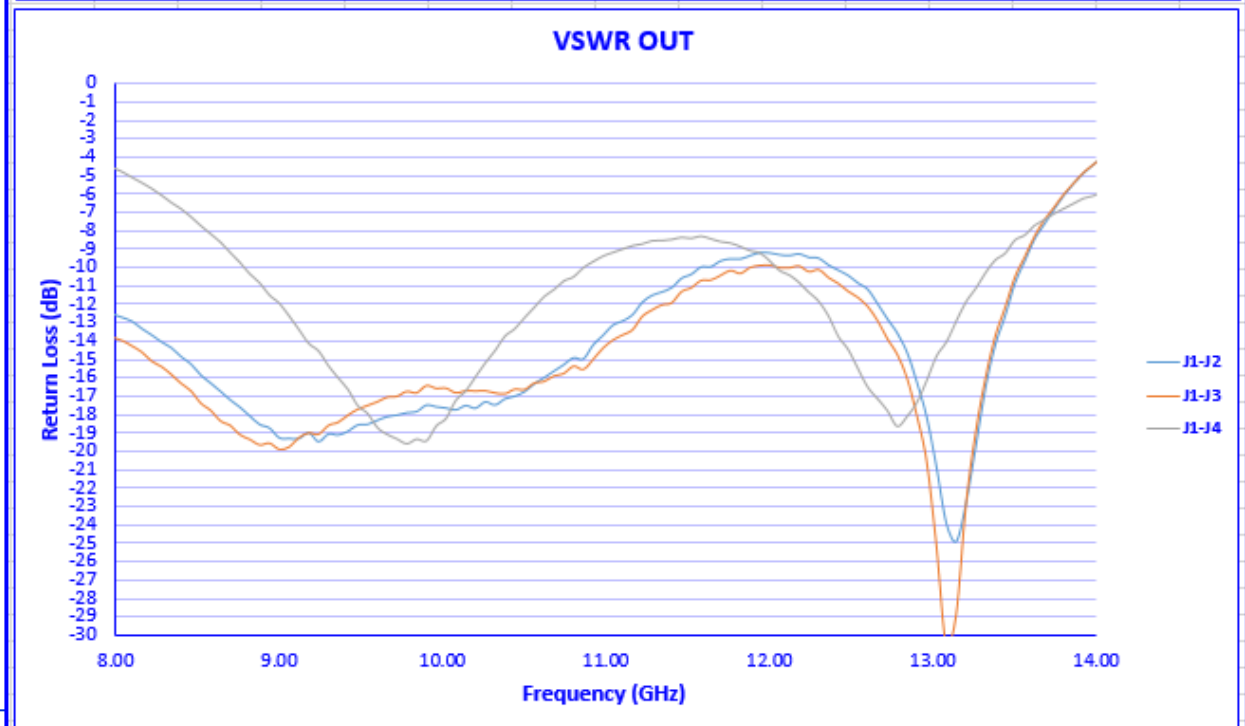
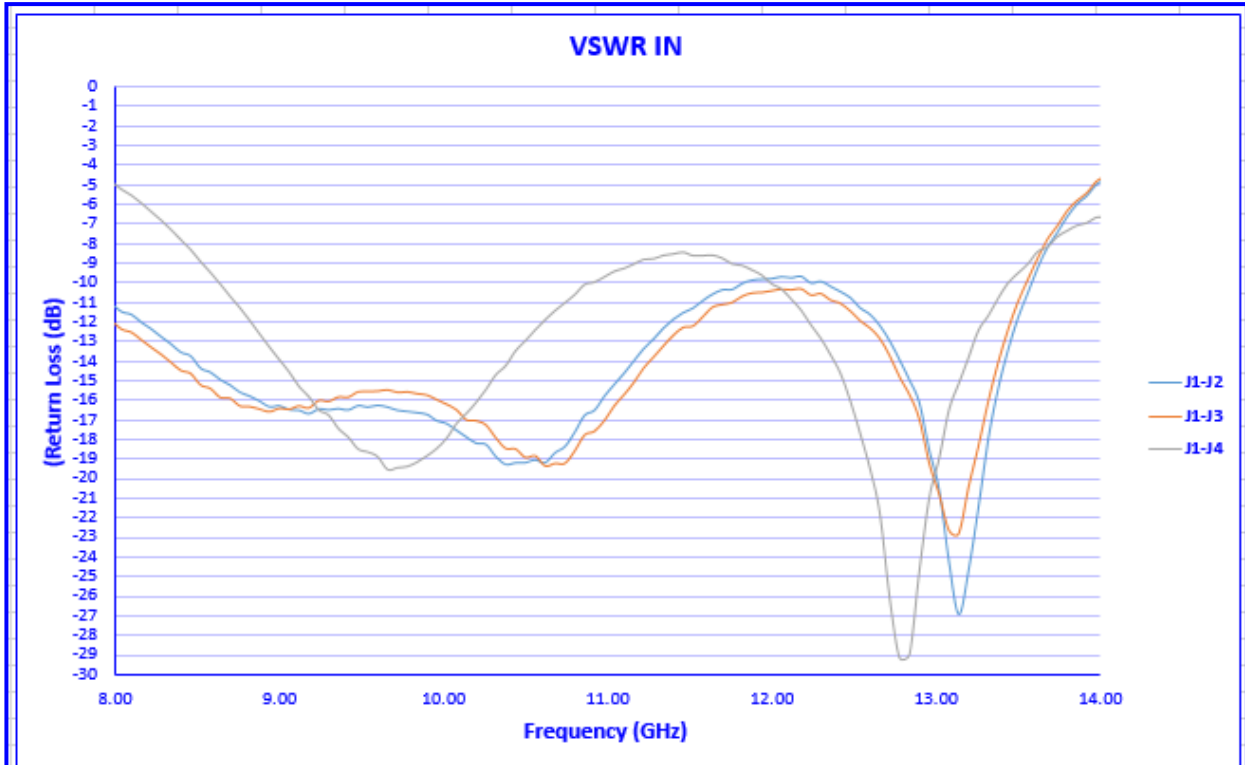
+25°C





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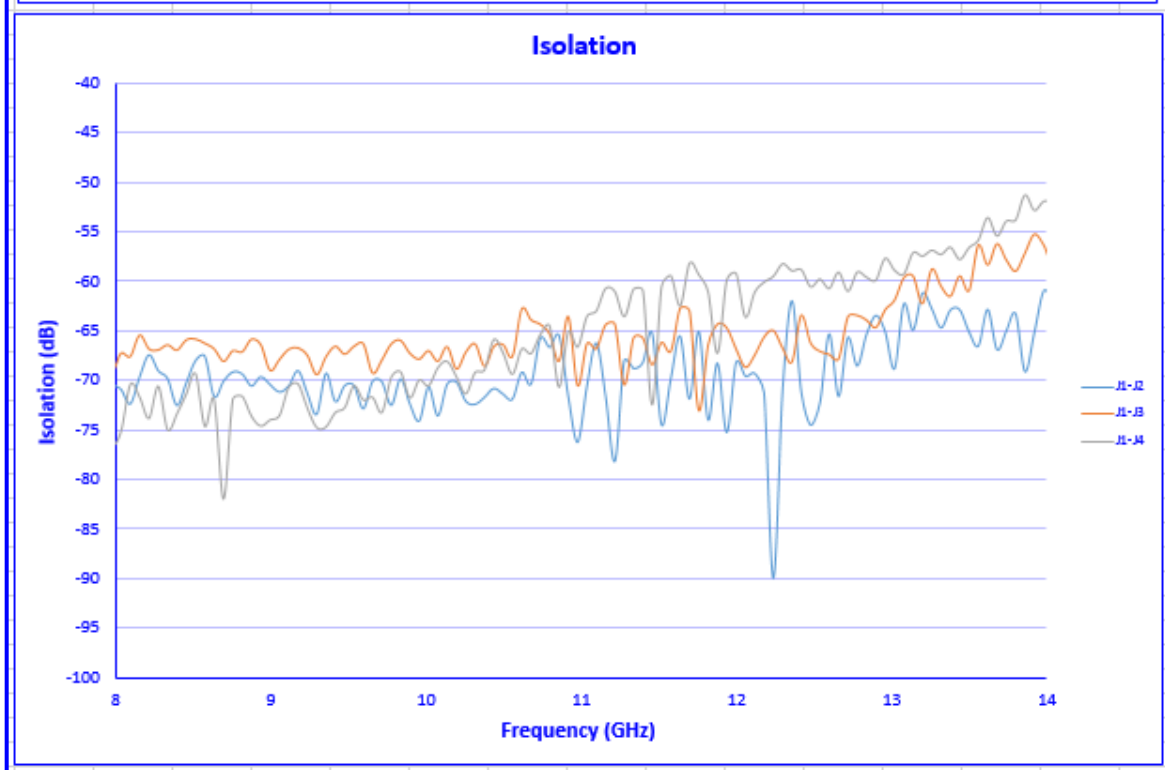
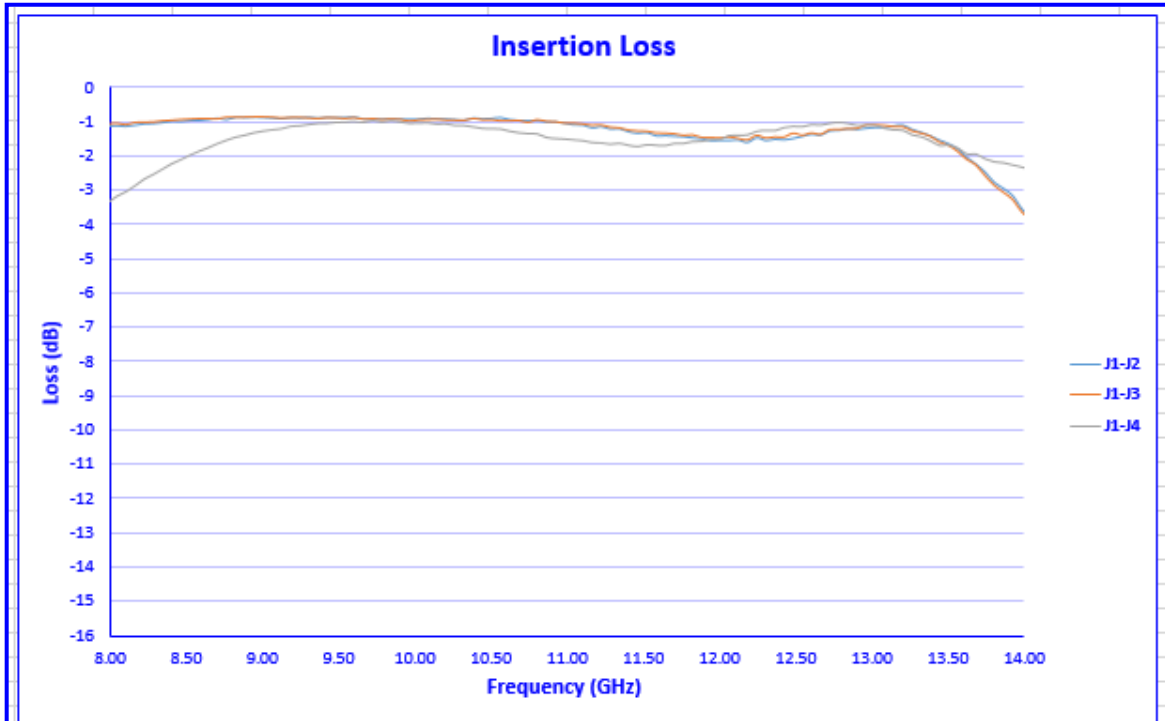
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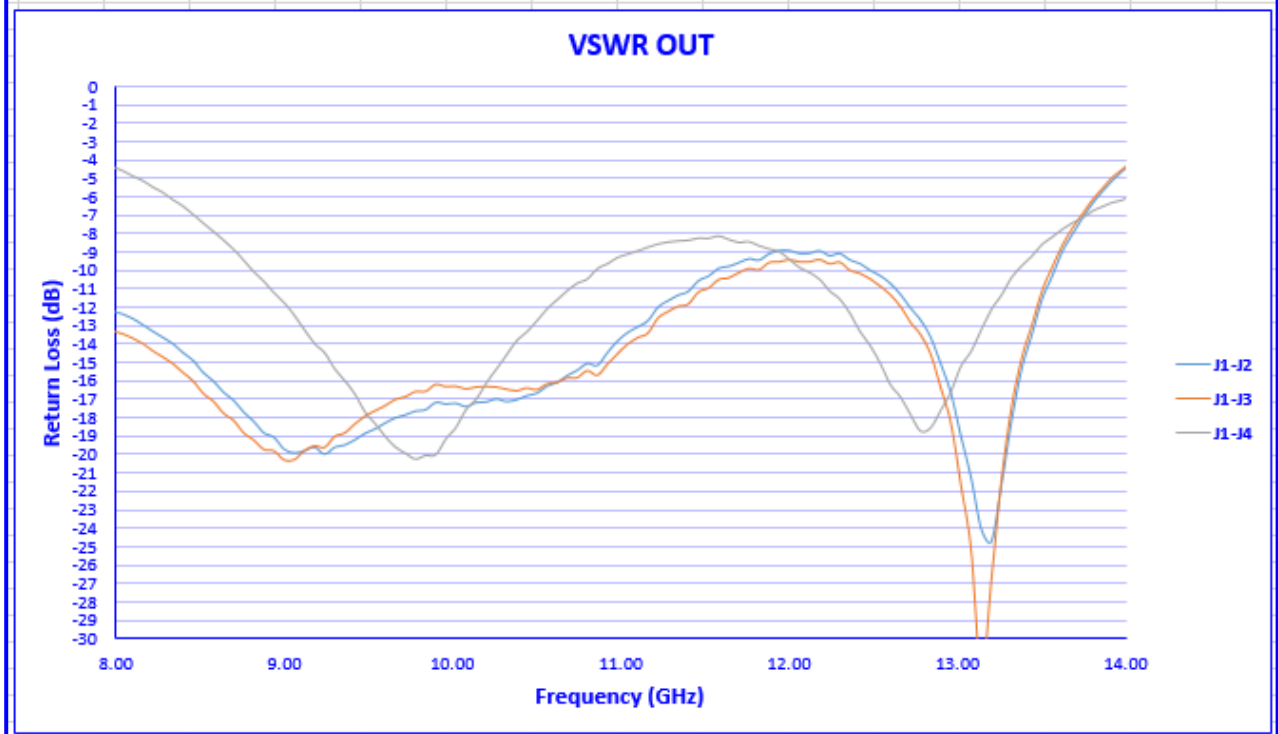
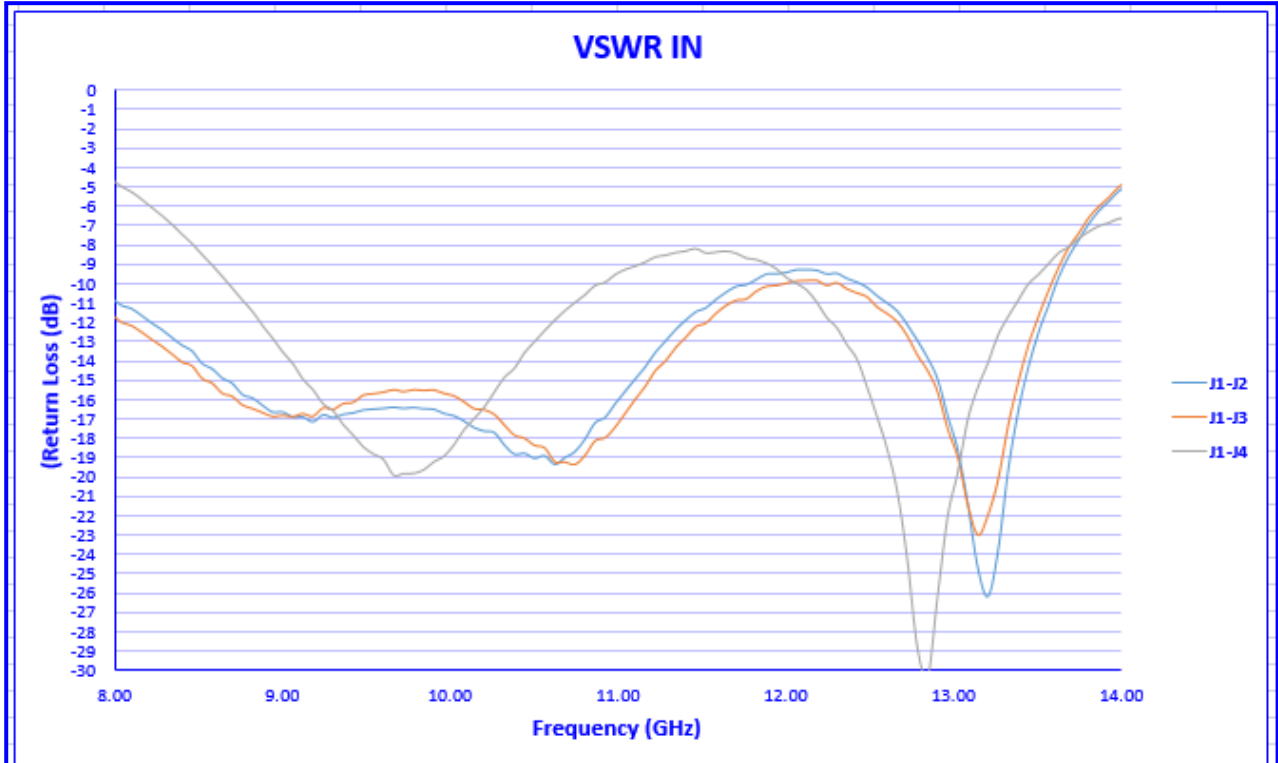
-60°C





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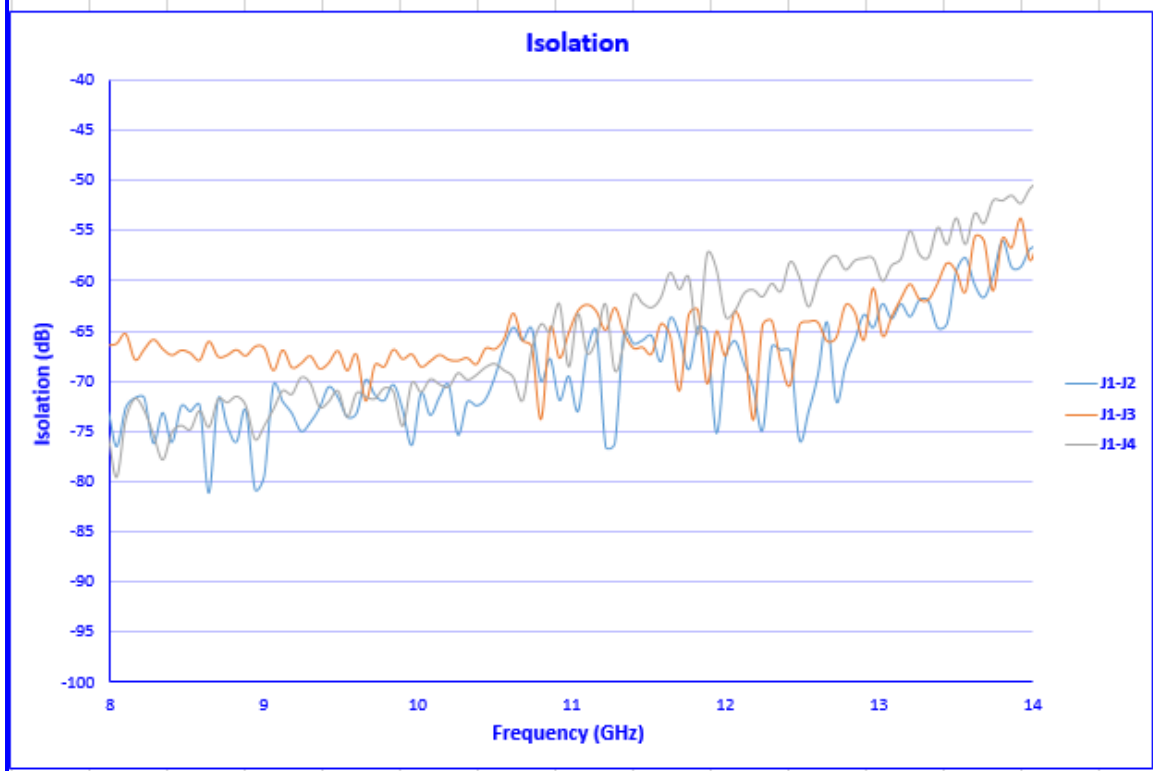
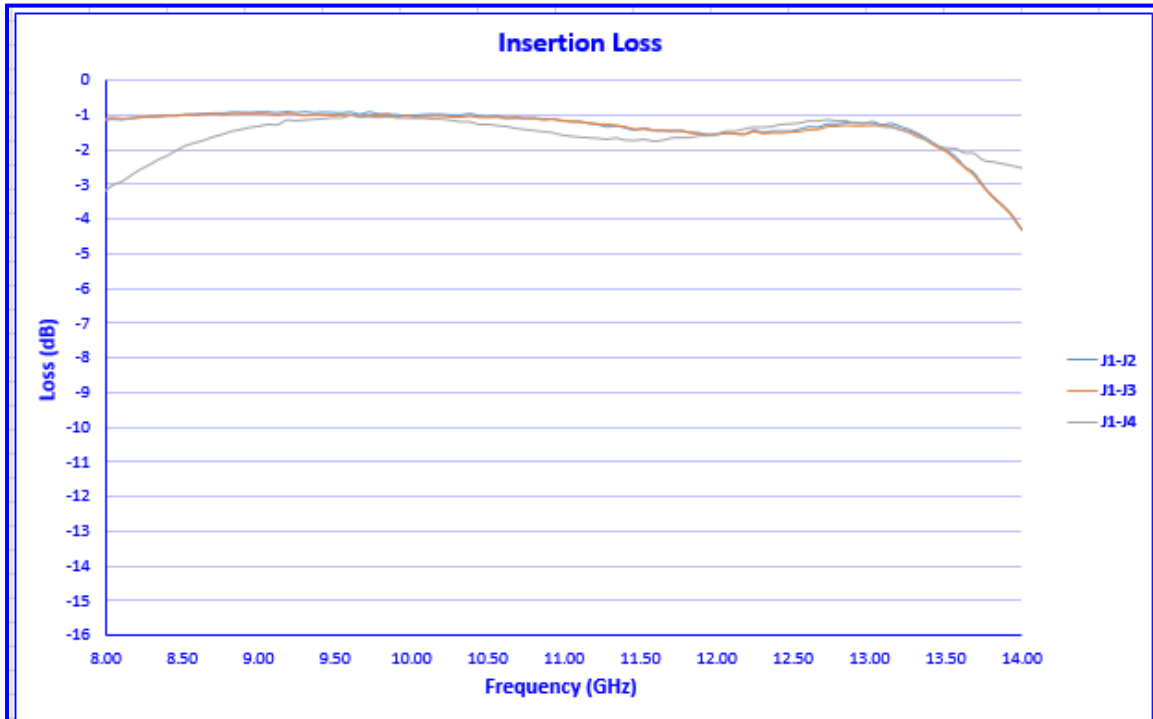
-60°C





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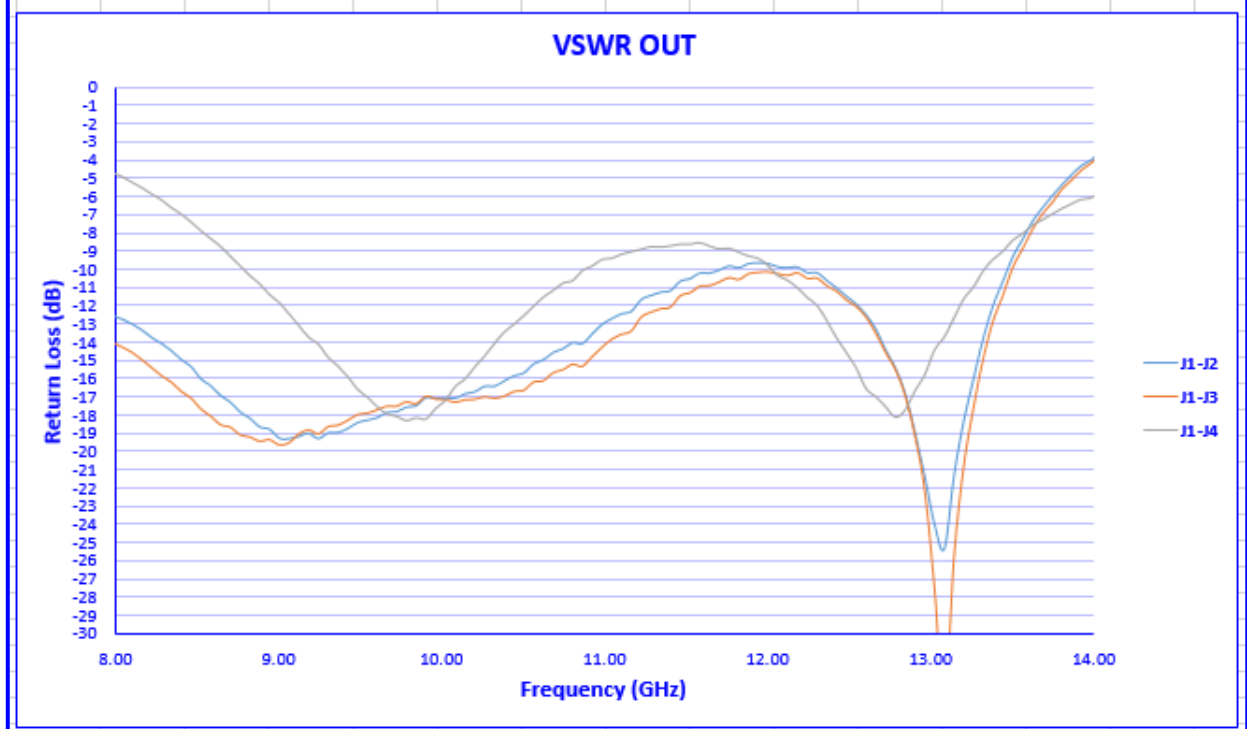
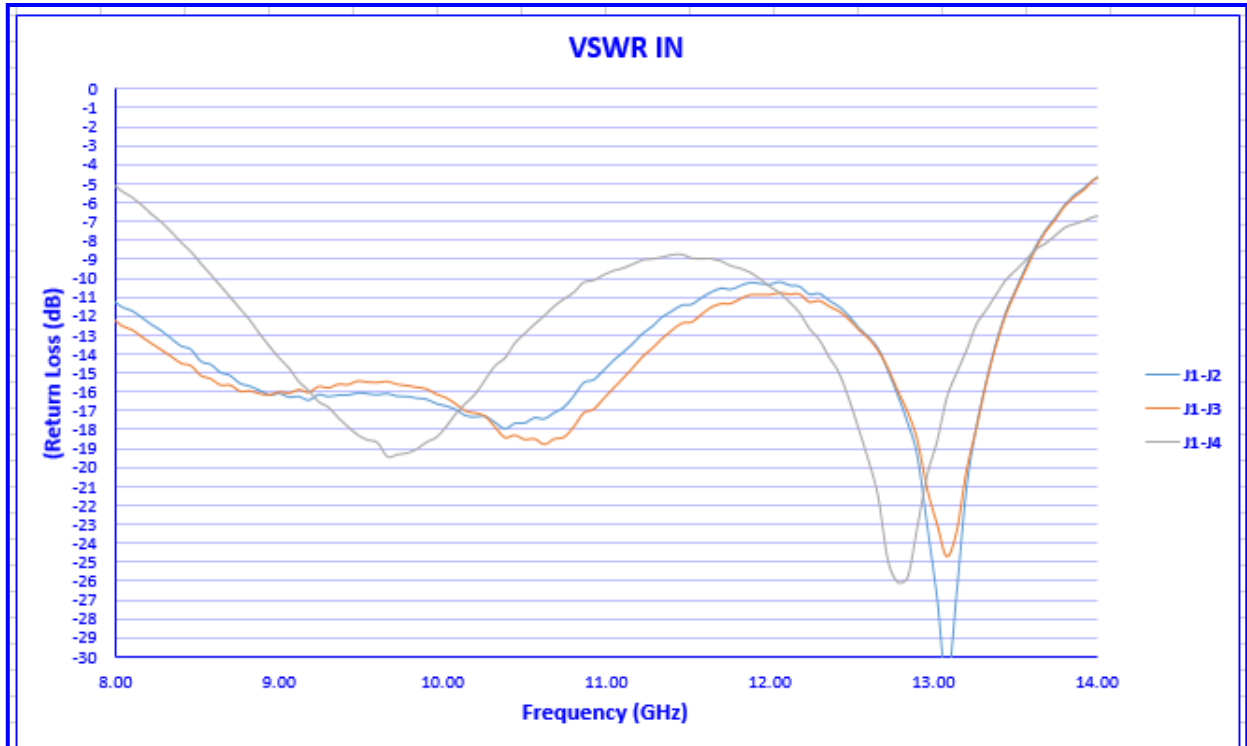
+85°C





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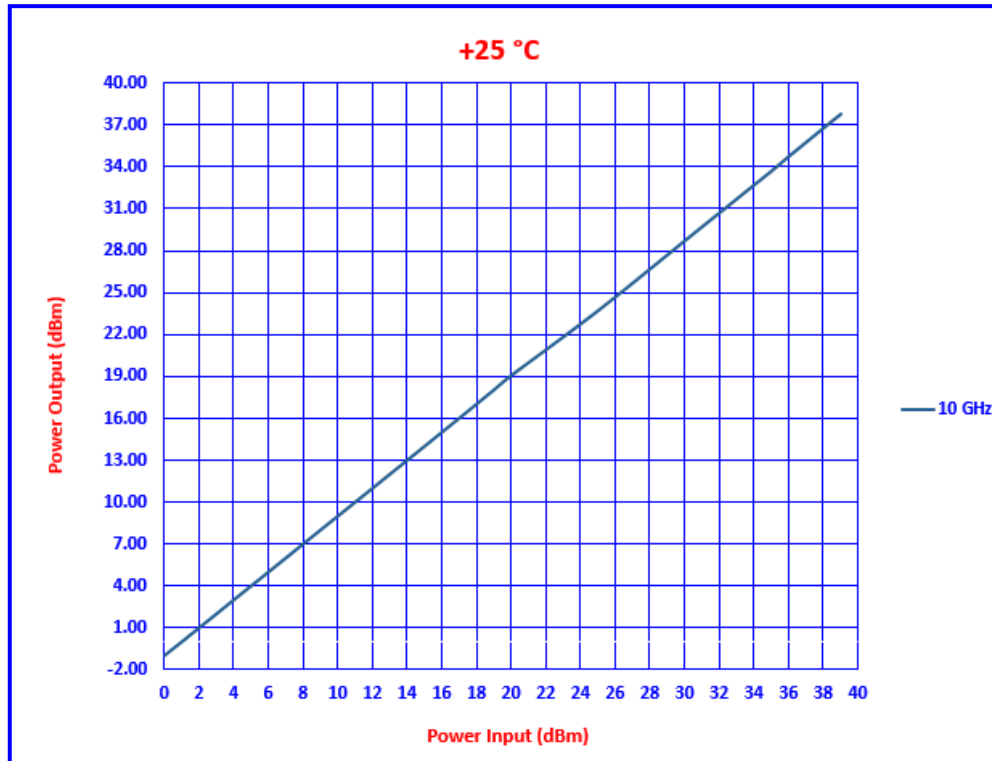
+85°C





Typical Characteristics ON P3T-9R5G10G-55-R-SFF

High Power Test (CW)

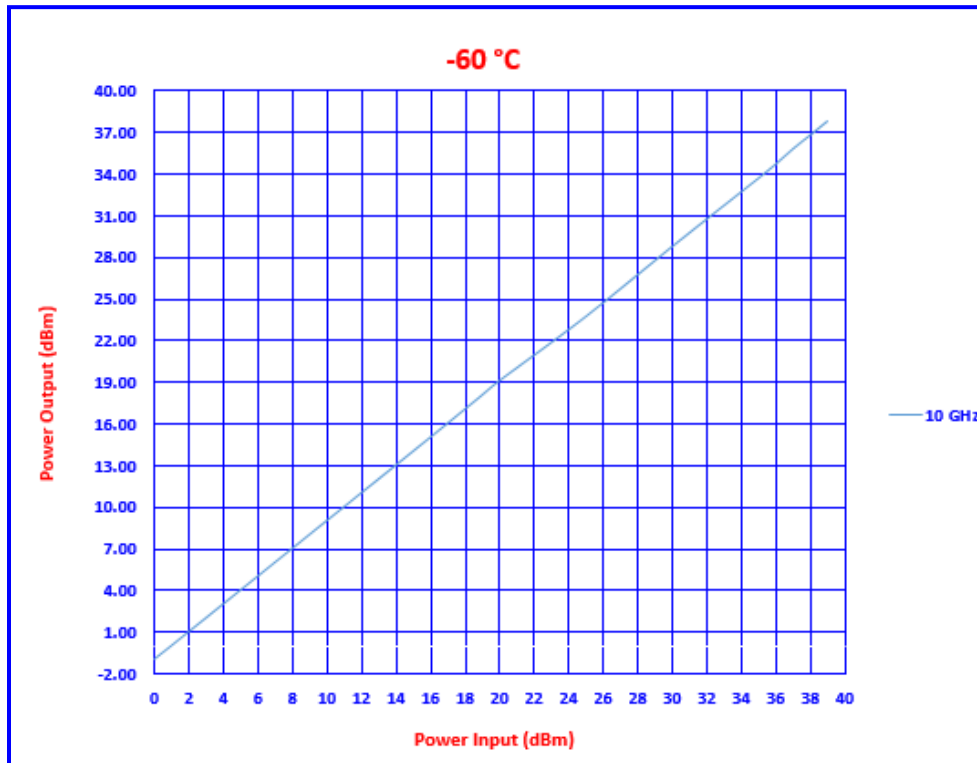


+25°C			
10GHz			
POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS	
0	-1.02	1.02	
1	-0.04	1.04	
2	0.96	1.04	
3	1.96	1.04	
4	2.97	1.03	
5	3.96	1.04	
6	4.97	1.03	
7	5.97	1.03	
8	6.97	1.03	
9	7.97	1.03	
10	8.98	1.02	
11	9.97	1.03	
12	10.97	1.03	
13	11.98	1.02	
14	12.98	1.02	
15	13.98	1.02	
16	14.98	1.02	
17	15.99	1.01	
18	17.00	1.00	
19	18.02	0.98	
20	19.05	0.95	
25	23.69	1.31	
30	28.70	1.30	
35	33.7	1.30	
36	34.75	1.25	3W
37	35.76	1.24	5W
38	36.78	1.22	6.3W
39	37.78	1.22	7.5W



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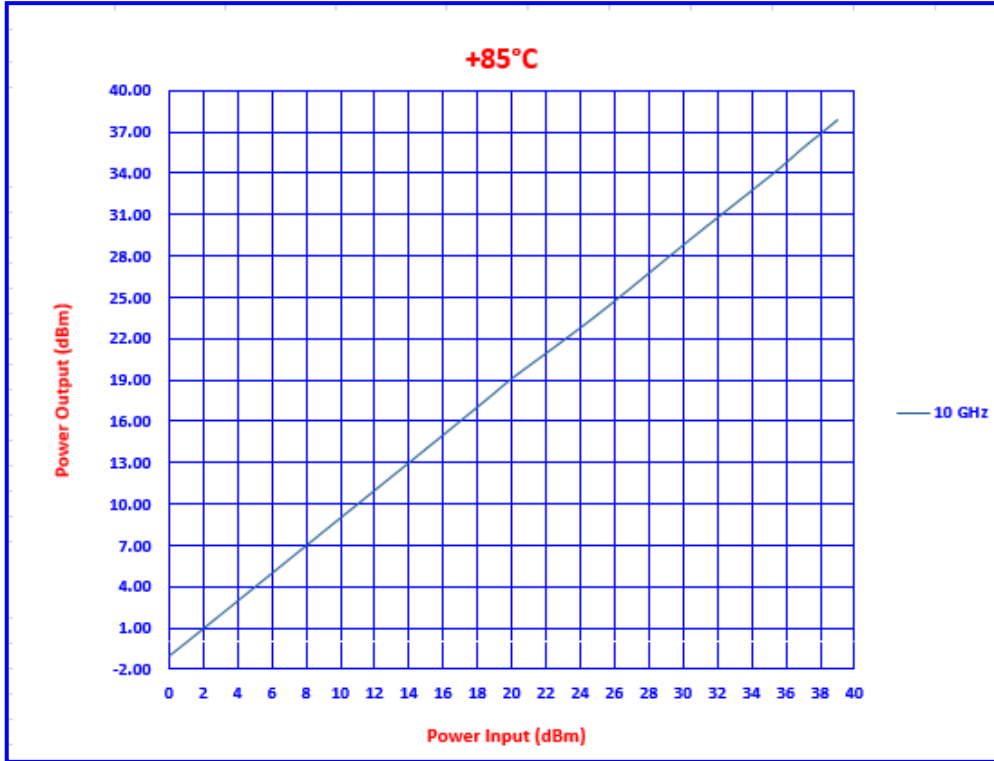


-60°C		
10GHz		
POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS
0	-0.96	0.96
1	0.02	0.98
2	1.02	0.98
3	2.02	0.98
4	3.02	0.98
5	4.02	0.98
6	5.02	0.98
7	6.02	0.98
8	7.02	0.98
9	8.03	0.97
10	9.02	0.98
11	10.02	0.98
12	11.02	0.98
13	12.02	0.98
14	13.02	0.98
15	14.02	0.98
16	15.03	0.97
17	16.04	0.96
18	17.05	0.95
19	18.07	0.93
20	19.10	0.90
25	23.72	1.28
30	28.76	1.24
35	33.68	1.32
36	34.70	1.30
37	35.80	1.20
38	36.79	1.21
39	37.80	1.20
		7.5W



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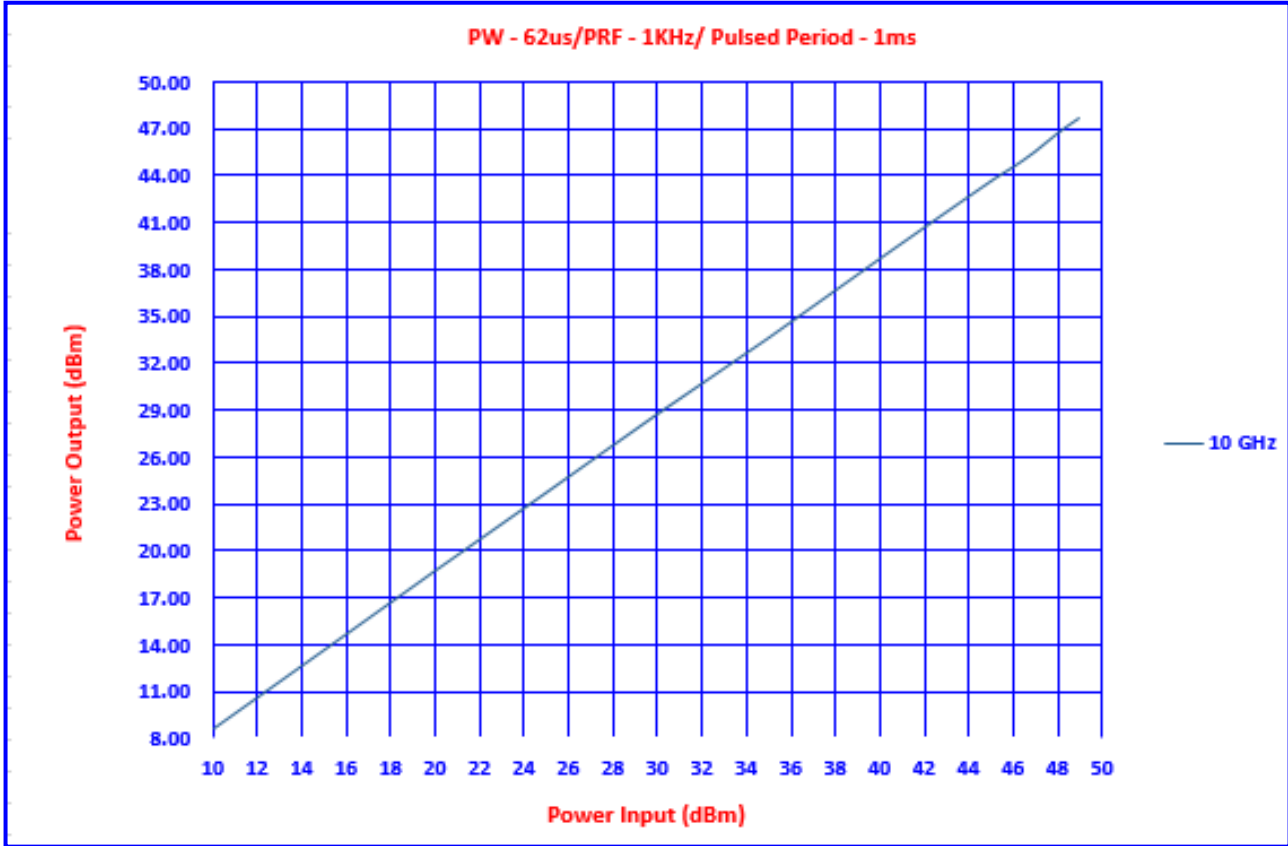


+85°C		
10GHz		
POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS
0	-0.97	0.97
1	0.01	0.99
2	1.01	0.99
3	2.01	0.99
4	3.01	0.99
5	4.01	0.99
6	5.01	0.99
7	6.01	0.99
8	7.02	0.98
9	8.01	0.99
10	9.02	0.98
11	10.02	0.98
12	11.01	0.99
13	12.02	0.98
14	13.02	0.98
15	14.02	0.98
16	15.03	0.97
17	16.04	0.96
18	17.05	0.95
19	18.08	0.92
20	19.11	0.89
25	23.60	1.40
30	28.66	1.34
35	33.64	1.36
36	34.68	1.32
37	35.72	1.28
38	36.74	1.26
39	37.76	1.24



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Pulsed Peak Power

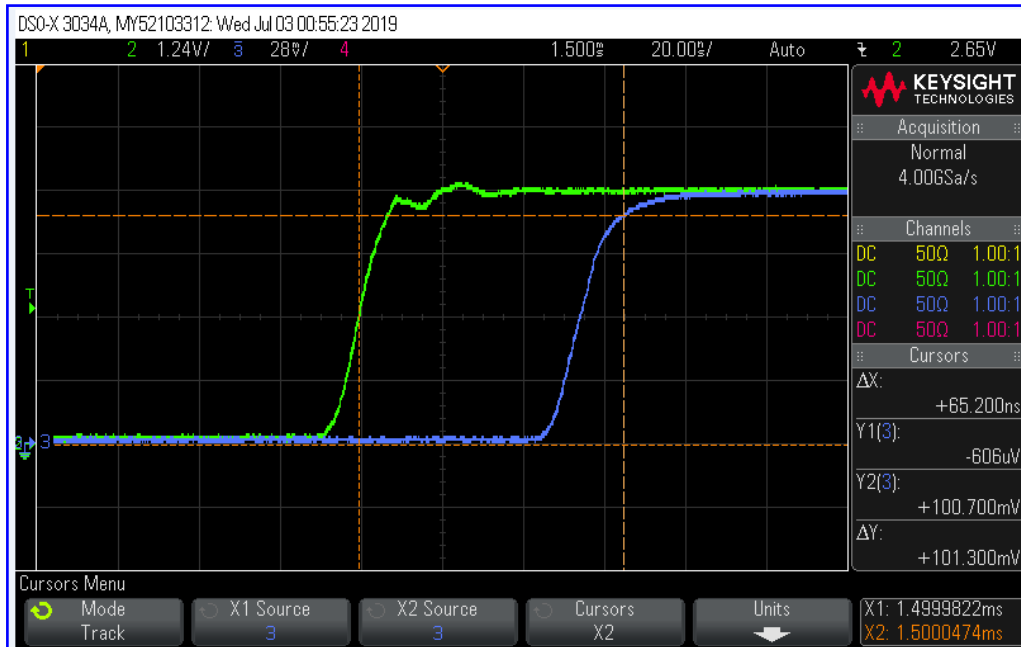


PW 62us/PRF 1KHz/ Pulsed Period 1ms		
10GHz		
POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS
10	8.60	1.40
15	13.65	1.35
20	18.70	1.30
25	23.69	1.31
30	28.70	1.30
35	33.55	1.45
40	38.60	1.40
45	43.55	1.45
46	44.45	1.55
47	45.44	1.56
48	46.60	1.40
49	47.60	1.40
		75W

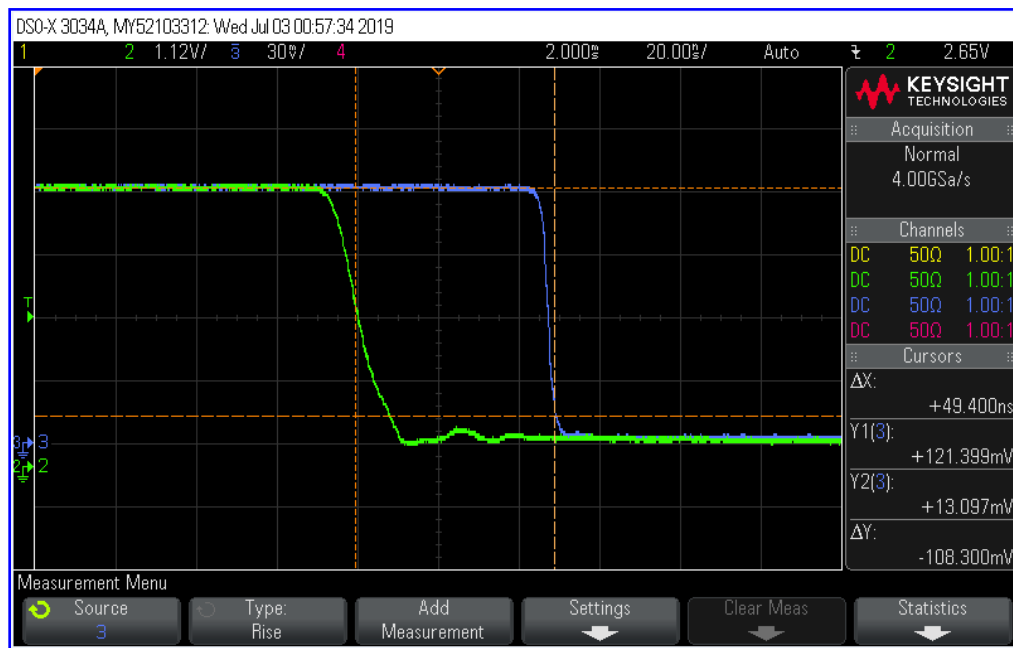


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Switching Speed ON (65.20ns) 20us per Div.



Switching Speed OFF (49.00ns) 20us per Div.

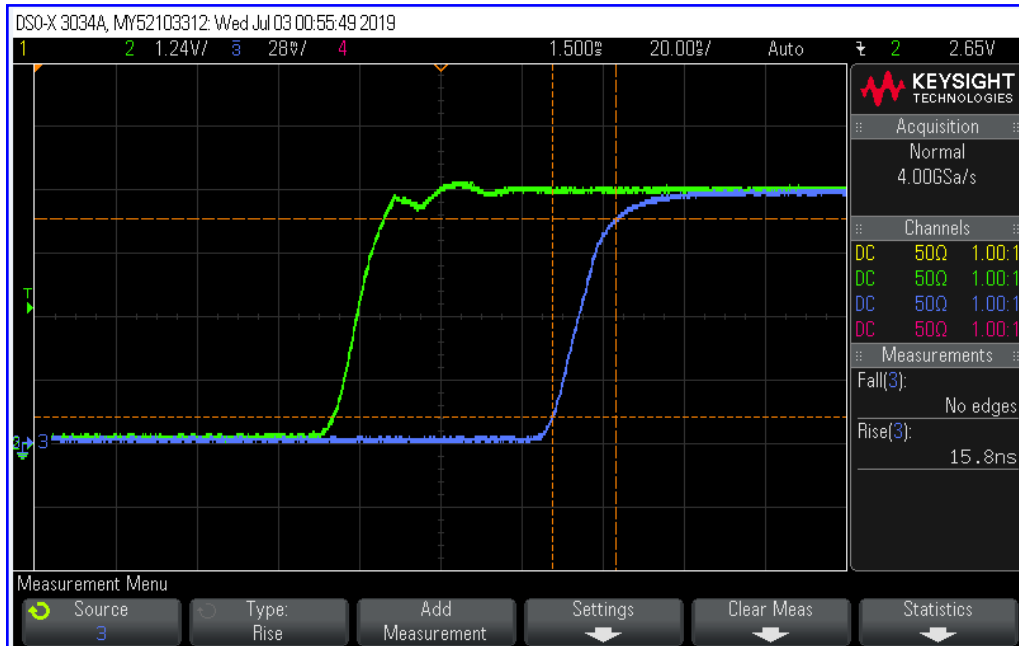


Signal Green = TTL
Signal Blue = RF

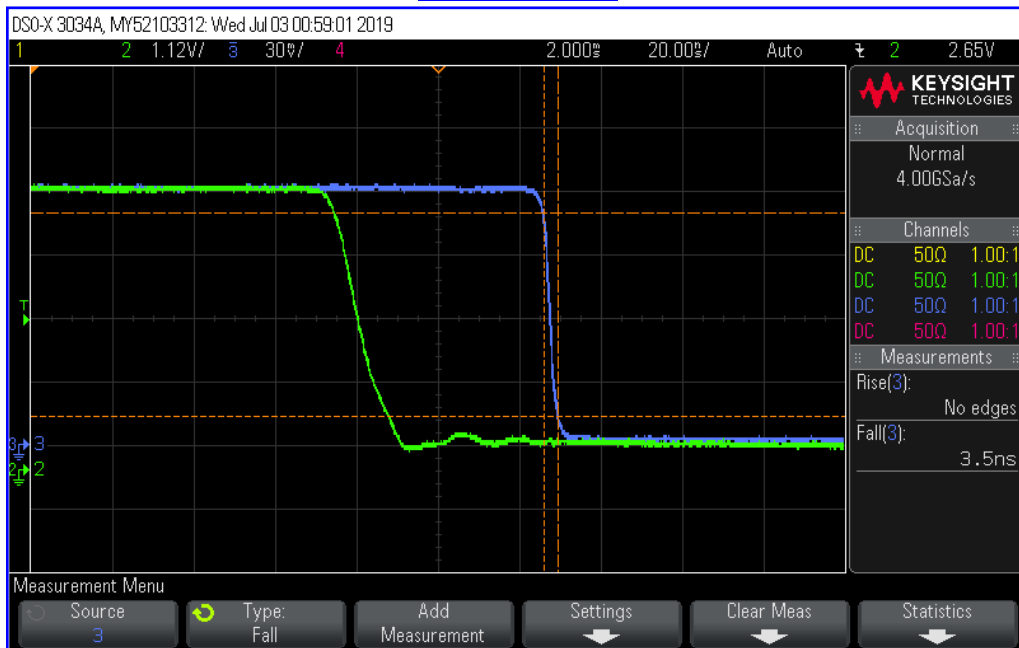


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Rise Time (18.8ns)
20us per Div.



Fall Time (3.5ns)
20us per Div.

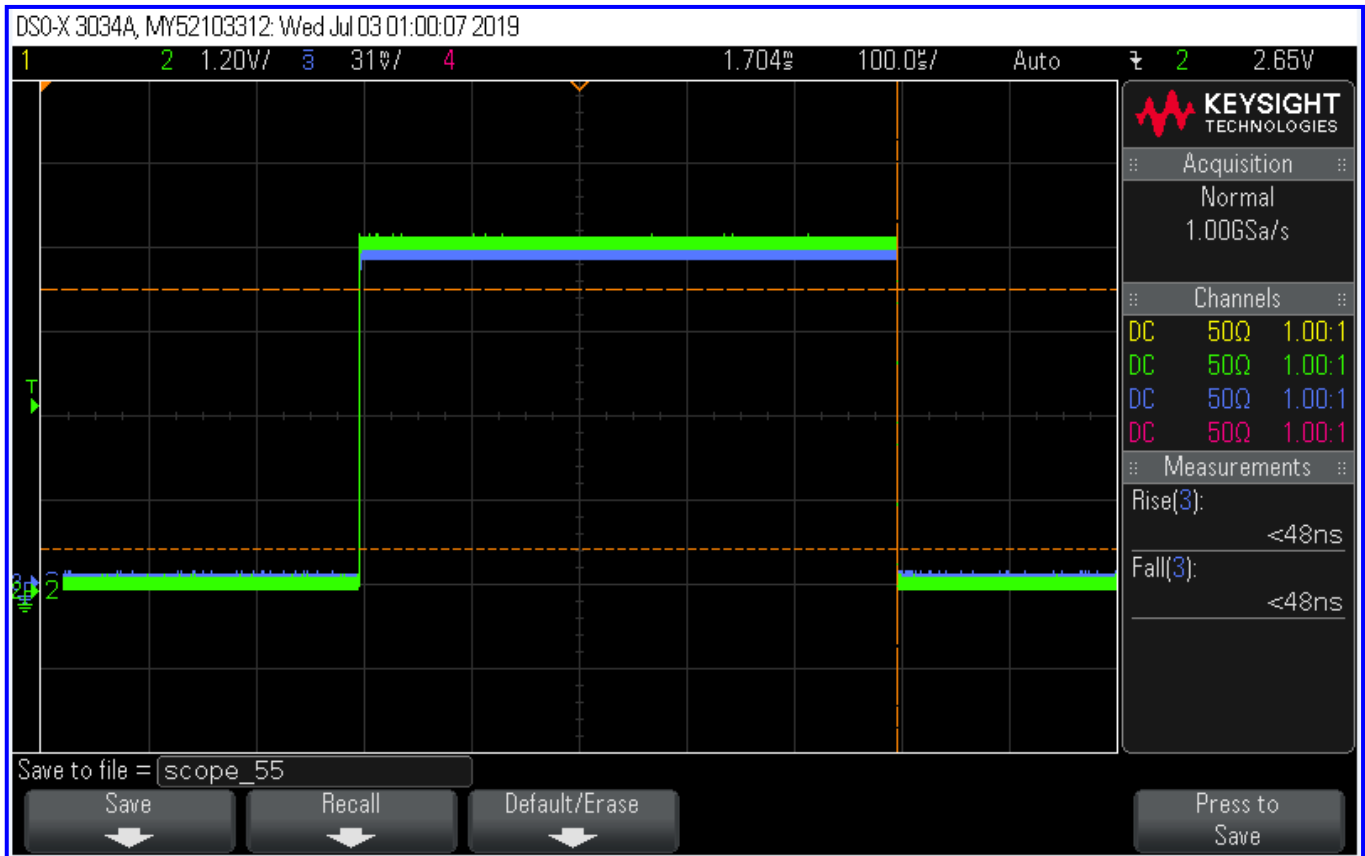


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Signal Blue = RF



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Full Pulse
100us per Div.



Signal Green = TTL
Signal Blue = RF