



**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

**PMI MODEL P7T-0R8G18G-60-T-SFF-SMC IS A SINGLE POLE SEVEN
THROW ABSORTIVE SWITCH WITH SMA CONNECTORS AND SMC
CONTROL CONNECTORS. IT HAS A FREQUENCY RANGE OF 0.8 TO
18GHz, 4.3 DB MAXIMUN INSERTION LOSS, AND 60dB ISOLATION
MINIMUM @ 18GHz**



October 7, 2019

Designed By: PMI Engineering

**Tested and Reported By:
Alfredo Lopez**



**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

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TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

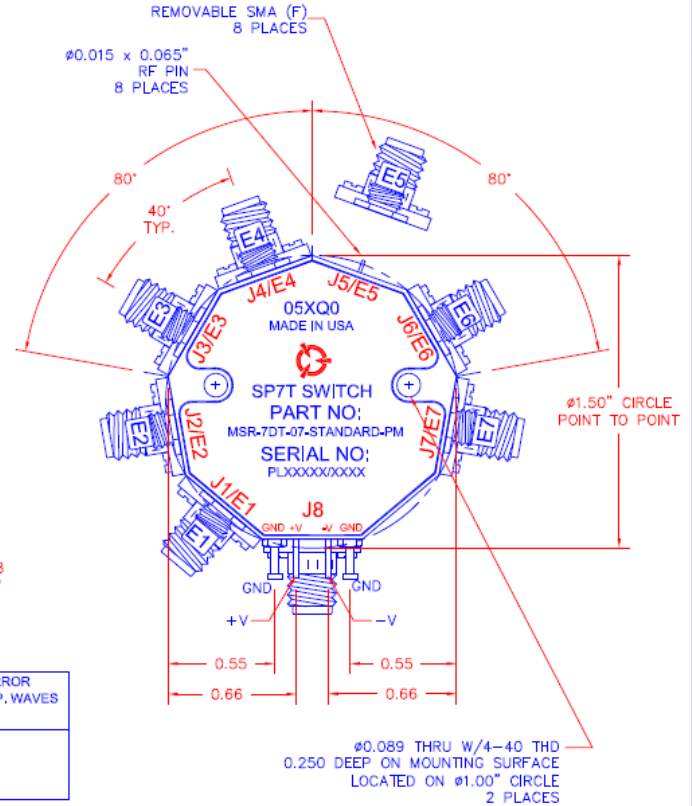
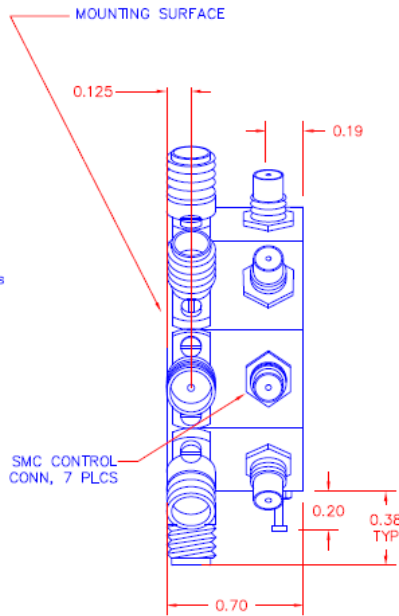
Product Feature

DESCRIPTION:

PMI MODEL P7T-0R8G18G-60-T-SFF-SMC IS A SINGLE POLE SEVEN THROW ABSORPTIVE SWITCH WITH SMA CONNECTORS AND SMC CONTROL CONNECTORS. IT HAS A FREQUENCY RANGE OF 0.8 TO 18GHz, 4.3 dB MAXIMUM INSERTION LOSS, AND 60dB ISOLATION MINIMUM @ 18GHz.

SPECIFICATIONS:

- FREQUENCY: 0.8 GHz TO 18 GHz
- INSERTION LOSS: 4.3dB MAX.
- ISOLATION: 0.8 GHz TO 18 GHz: 60dB MIN.
- VSWR: IN/OUT: 2.0:1
OUT/OFF: 2.0:1
- SPEED: RISE: 15ns MAX.
FALL: 15ns MAX.
DELAY ON: 75ns MAX.
DELAY OFF: 75ns MAX.
- INPUT POWER: (CW)+20dBm (STANDARD)
- SURVIVAL POWER: 1 WATT CW, 10 WATTS PEAK 1 us
- CONTROL: TTL LOGIC "0"=ON "1"=OFF
- POWER SUPPLY: +5V @ 350 mA MAX.
-5V @ 100 mA MAX.
- FINISH: PAINTED GRAY



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL RELEASE	1/13/12	PK

SPECIFICATIONS REQUIRED	INSERTION LOSS	VSWR	ISOLATION	SWITCHING SPEED	POWER	AVG. UNIT ERROR
	4.3 dB	(2:1/9.54dB)	60dB	75 ns	≤20dBm (STANDARD) ≤30dBm (SURVIVAL)	INCLUDING TEMP. WAVES ≤0.2 dB
PERFORMANCE VARIATION/INCONSISTENCY*	±0.5dB	±1dB	±5dB	±5ns	COMPLIANT	≤0.75dB

* CONSISTENCY/STABILITY FOR EACH DEVICE

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -40°C TO +85°C (OPERATING)
-65°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

ALL DIMENSIONS ARE IN INCHES

TOLERANCES:

X.XX ±0.020

X.XXX ±0.010

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

* Units are designed to meet environmental ratings, but not tested.
If environmental testing is required, please contact sales department.

PART NO.		DATE		PLANAR MONOLITHICS INDUSTRIES, INC.			
APPROVALS	NJA	DATE	1/13/12	7311-F GROVE ROAD FREDERICK, MARYLAND 21704 USA TEL: 301-662-6019 FAX: 301-662-1731 WEBSITE: www.pmi-rf.com EMAIL: sales@pmi-rf.com ISO 9001:2008 CERTIFIED			
DRAWN				TITLE PRODUCT FEATURE P7T-0R8G18G-60-T-SFF-SMC			
CHECKED				SIZE	FROM NO.	DWG NO.	REV.
ISSUED		A	05XQ0			27016061	A1
				SCALE	N/S	SHEET 1 OF 1	



TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

Technical specifications

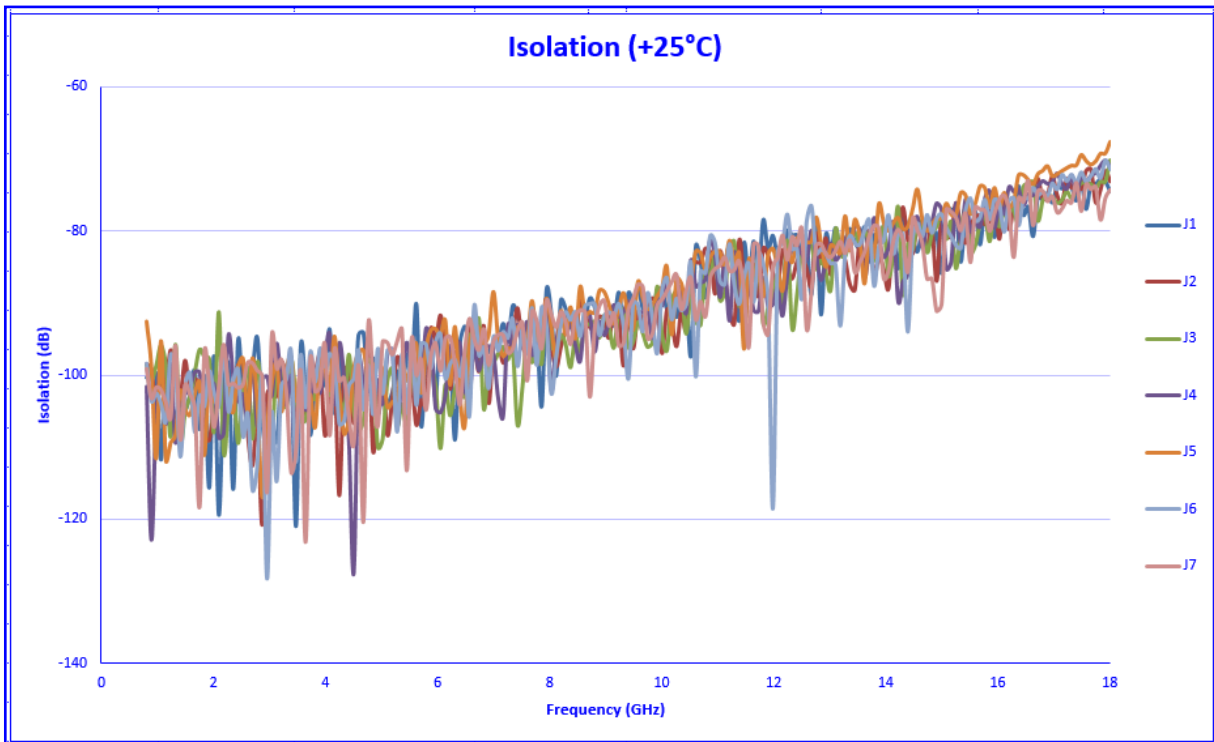
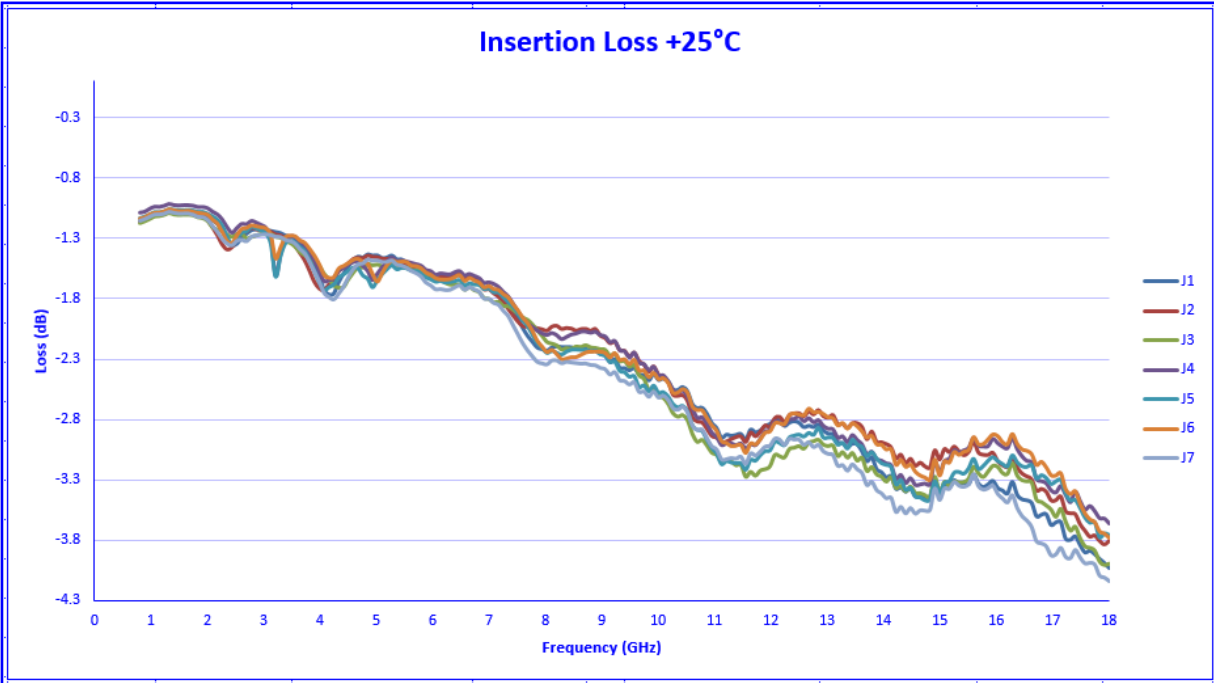
TEST ITEM NO:	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			Q A Q C
			+25°C	-40°C	+85°C	
1	Frequency Range:	0.8 GHz to 18 GHz	Tested: 0.5 to 18GHz Spec:0.8 GHz to 18 GHz	Tested: 0.5 to 18GHz Spec:0.8 GHz to 18 GHz	Tested: 0.5 to 18GHz Spec:0.8 GHz to 18 GHz	
2	Insertion Loss:	4.3 dB Max.	4.14 dB (See Graph)	4.25 dB (See Graph)	4.30 dB (See Graph)	
3	Isolation:	60 dB MIN	67.60 dB (See Graph)	67.40 dB (See Graph)	68.70 dB (See Graph)	
4	VSWR:	In/Out: 2.0:1 Out/Off 2.0:1	1.97:1 1.98:1 (See Graph)	2.0 :1 1.99:1 (See Graph)	1.96 :1 1.96:1 (See Graph)	
5	Switching Speed	Rise: 15ns Max. Fall: 15ns Max. Delay On 75ns Max. Delay Off: 75ns Max.	Rise Time: 6.60ns Fall Time: 9.10ns Delay ON: 17.20ns Delay OFF: 50.40ns	Rise Time: 6.60ns Fall Time: 9.10ns Delay ON: 17.20ns Delay OFF: 50.40ns	Rise Time: 6.60ns Fall Time: 9.10ns Delay ON: 17.20ns Delay OFF: 50.40ns	
6	Input Power	+20dBm CW (Standard) 1W CW (Survival)	Pass (See Graph)	Pass (See Graph)	Pass (See Graph)	
7	DC Supply:	+5V@350mA Max. -5V@100mA max.	+5V@ 298mA Max. -5V@ 42mA max.	+5V@ 297mA -5V@ 40mA	+5V@ 300mA. -5V@ 45mA.	
8	Control Signal:	TTL "0" → (On) TTL "1" → (Off)	PASS	PASS	PASS	
Specifications Required	Insertion Loss 4.3dB	VSWR (2:1/9.54dB)	Isolation 60dB	Switching Speed 75 ns	Power ≤20dBm (Std) ≤30dBm (Survival)	Avg Unit Error Incl. Temp. Waves ≤0.2dB
Performance Variation Inconsistency*	±0.5dB	±1dB	±5dB	±5ns	Compliant	≤0.75dB

* CONSISTENCY/STABILITY
FOR EACH DEVICE



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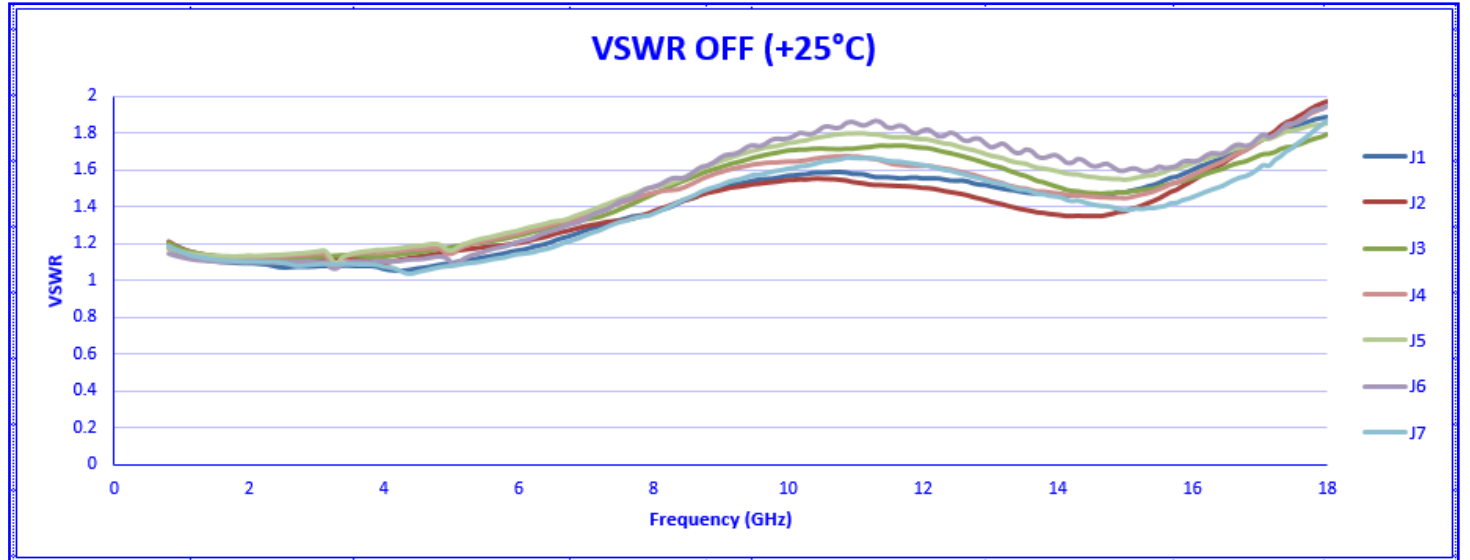
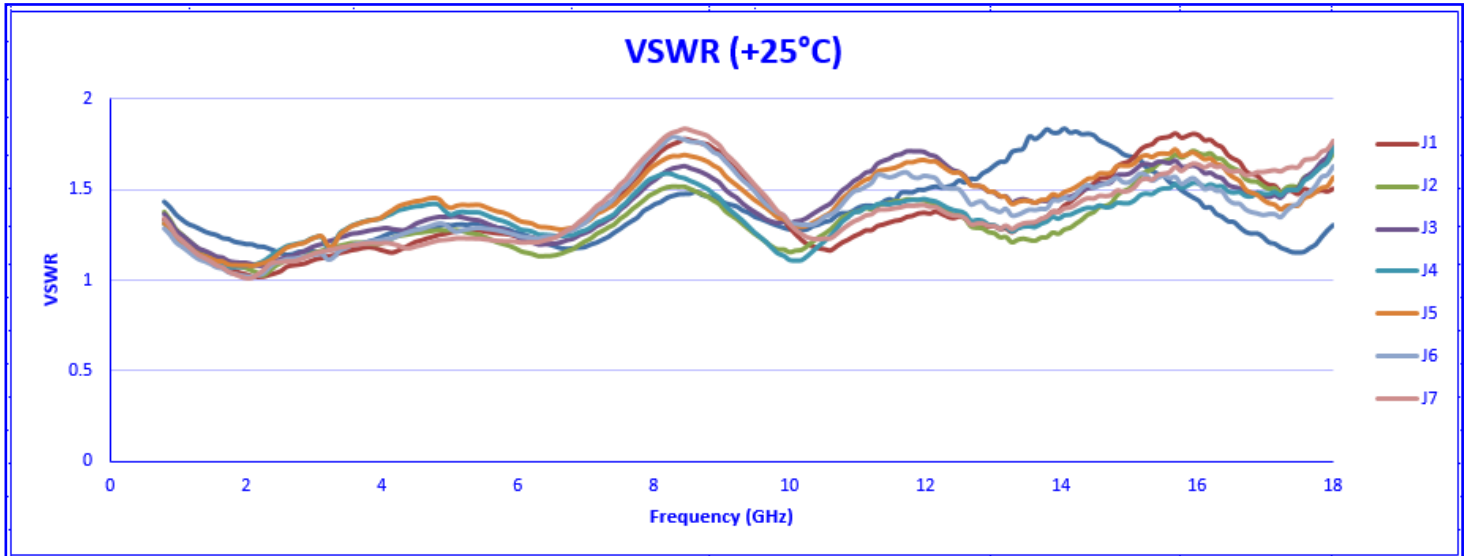
CHAPTER 1 (0.8 TO 18GHz)





**TYPICAL CHARACTERISTICS
ON
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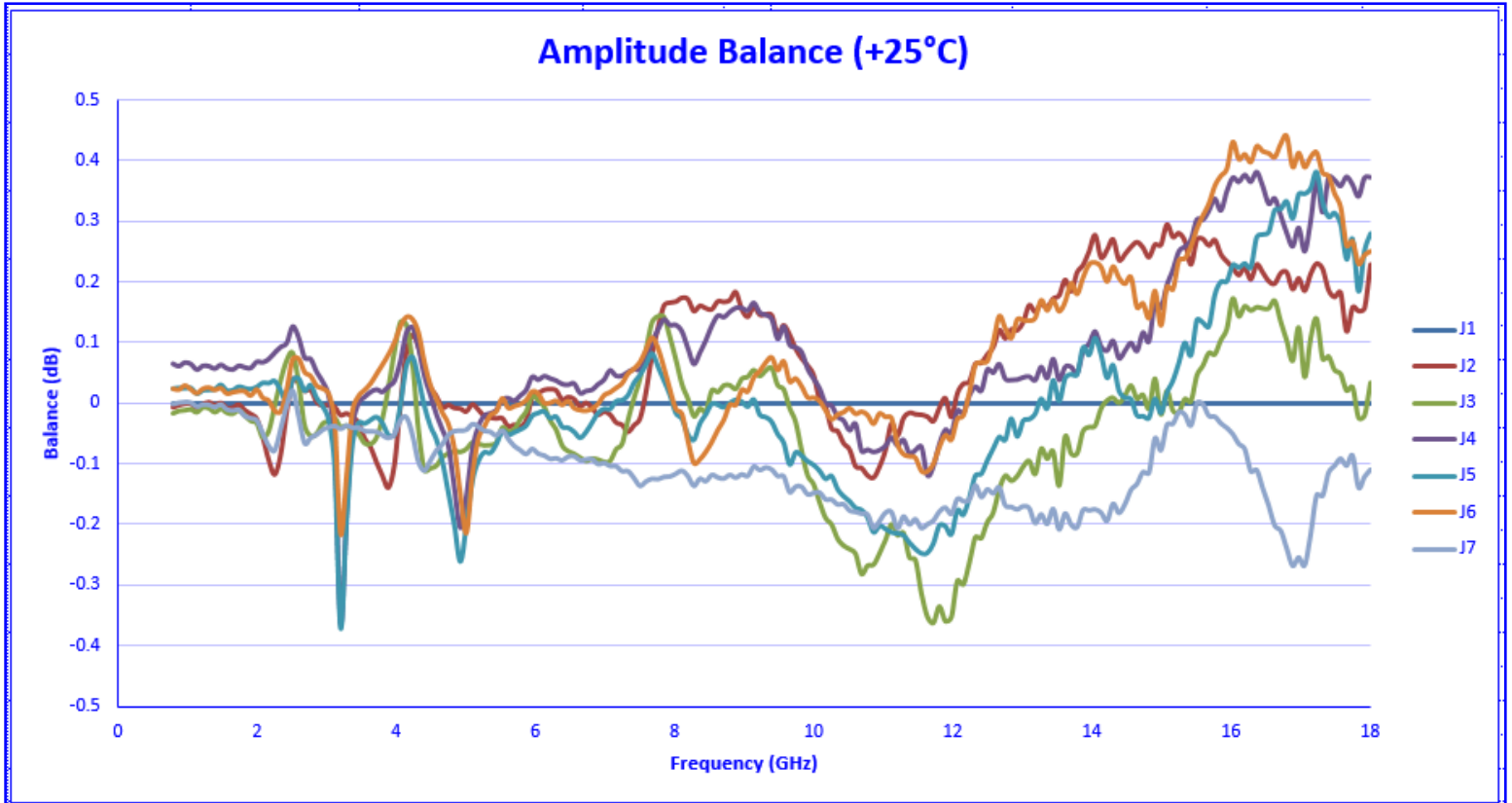
(0.8 TO 18GHz)





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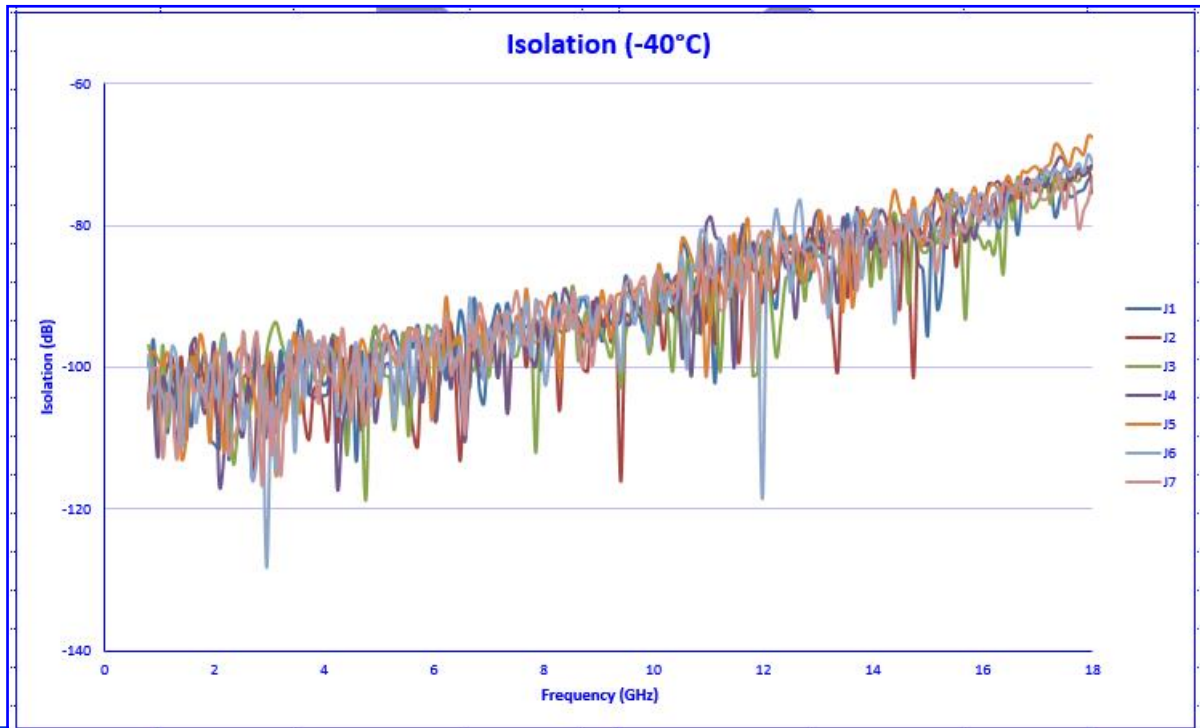
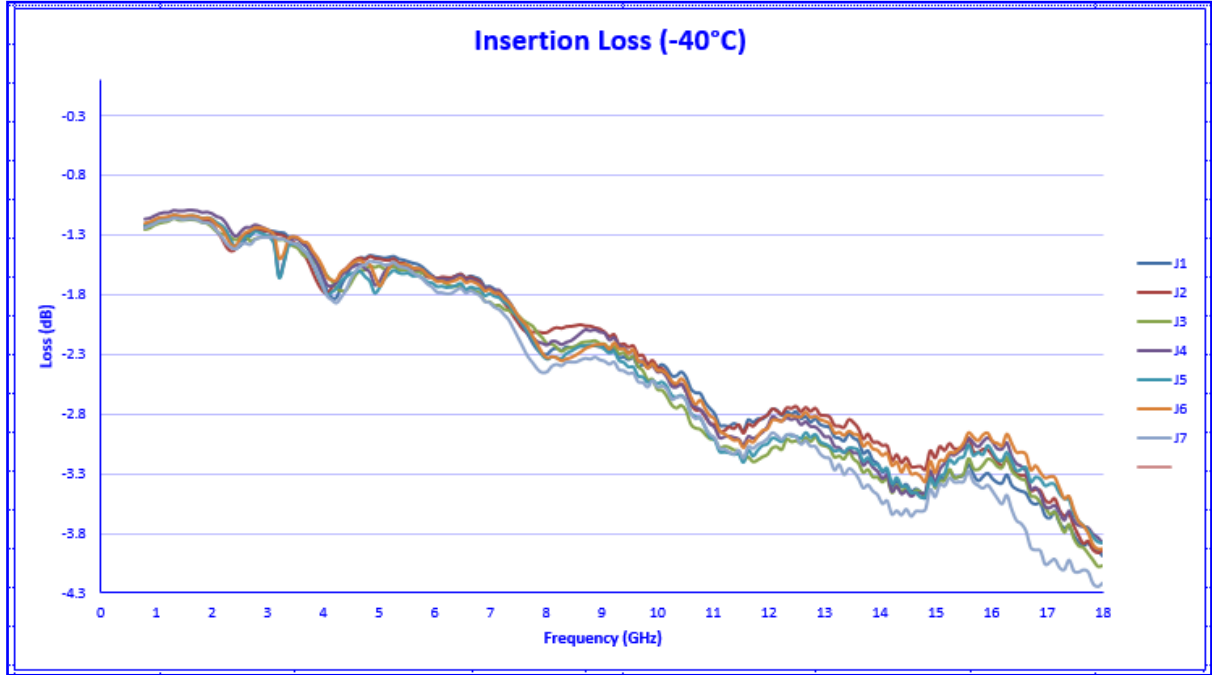
(0.8 TO 18GHz)





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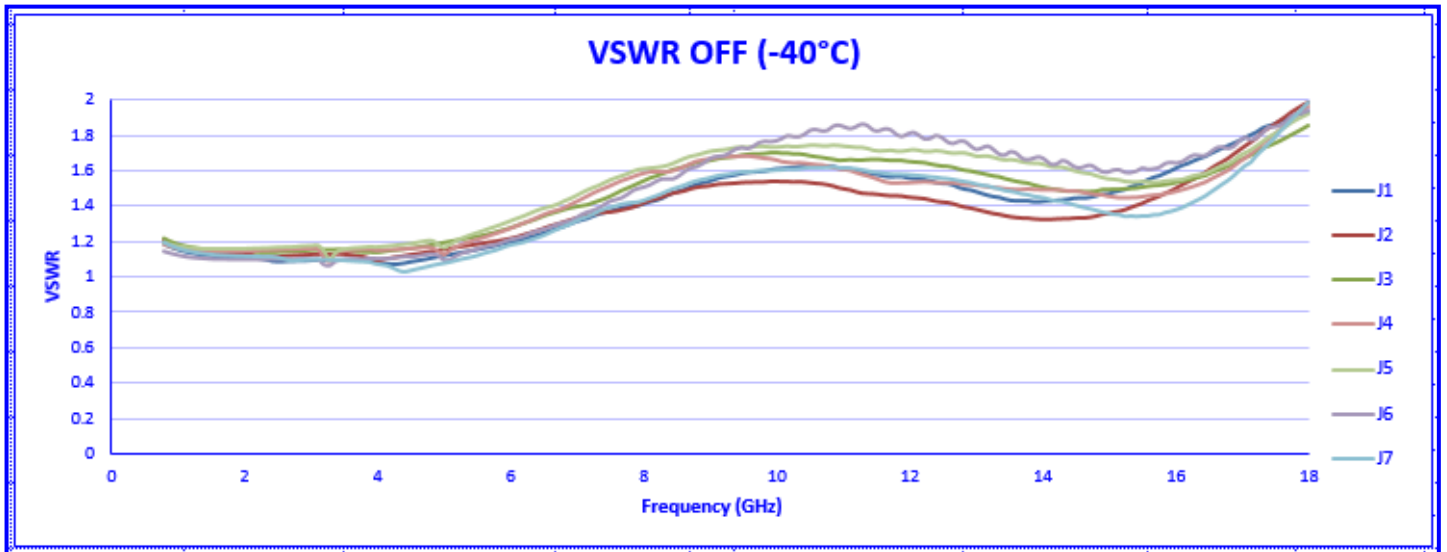
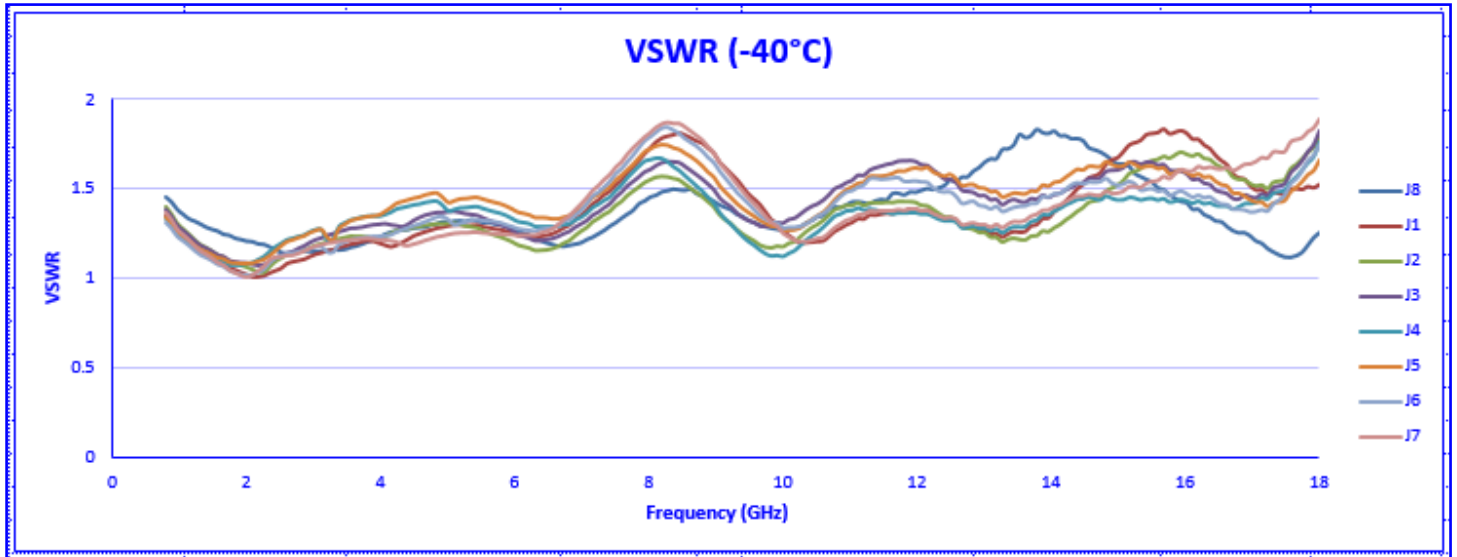
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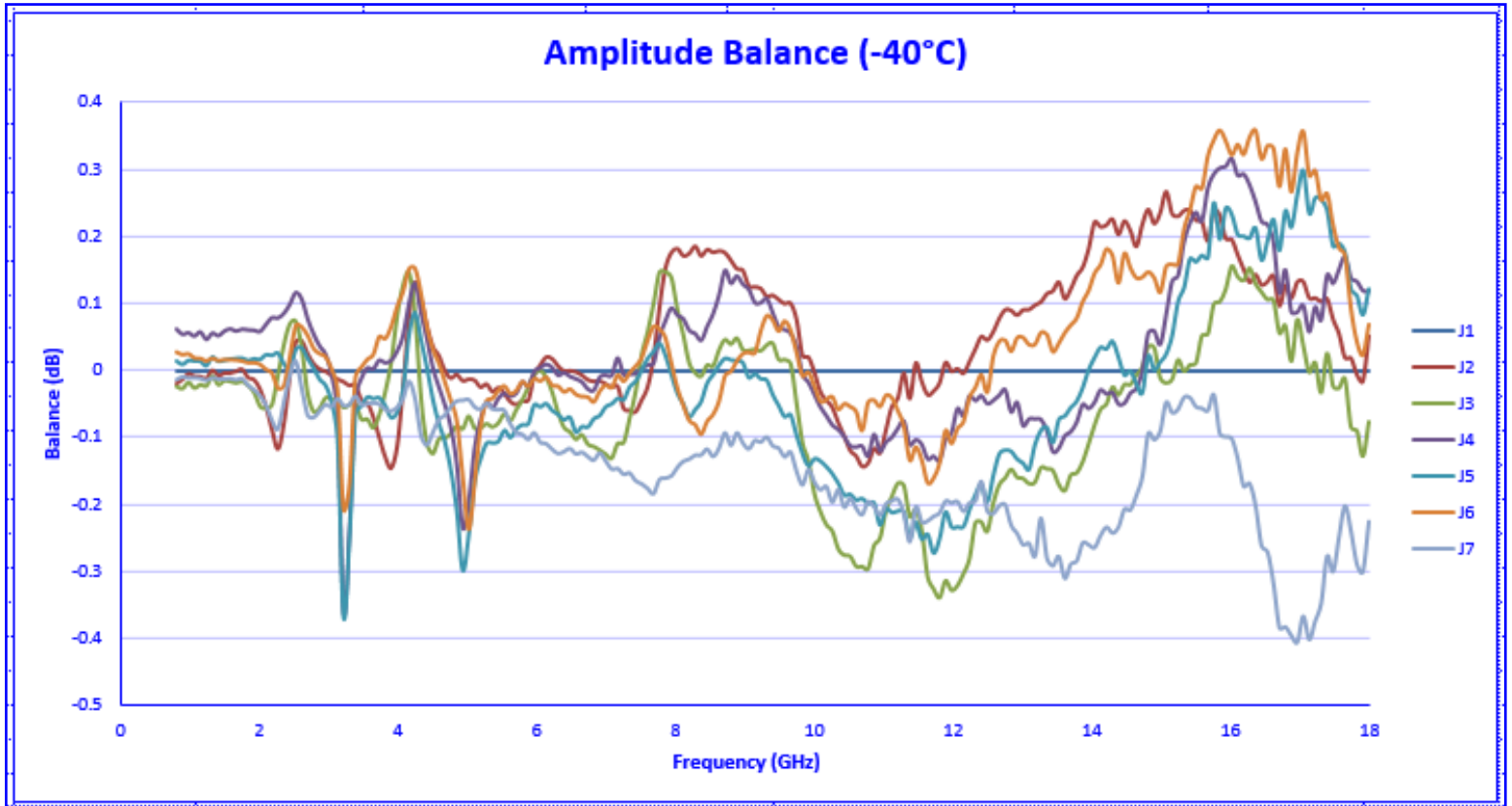
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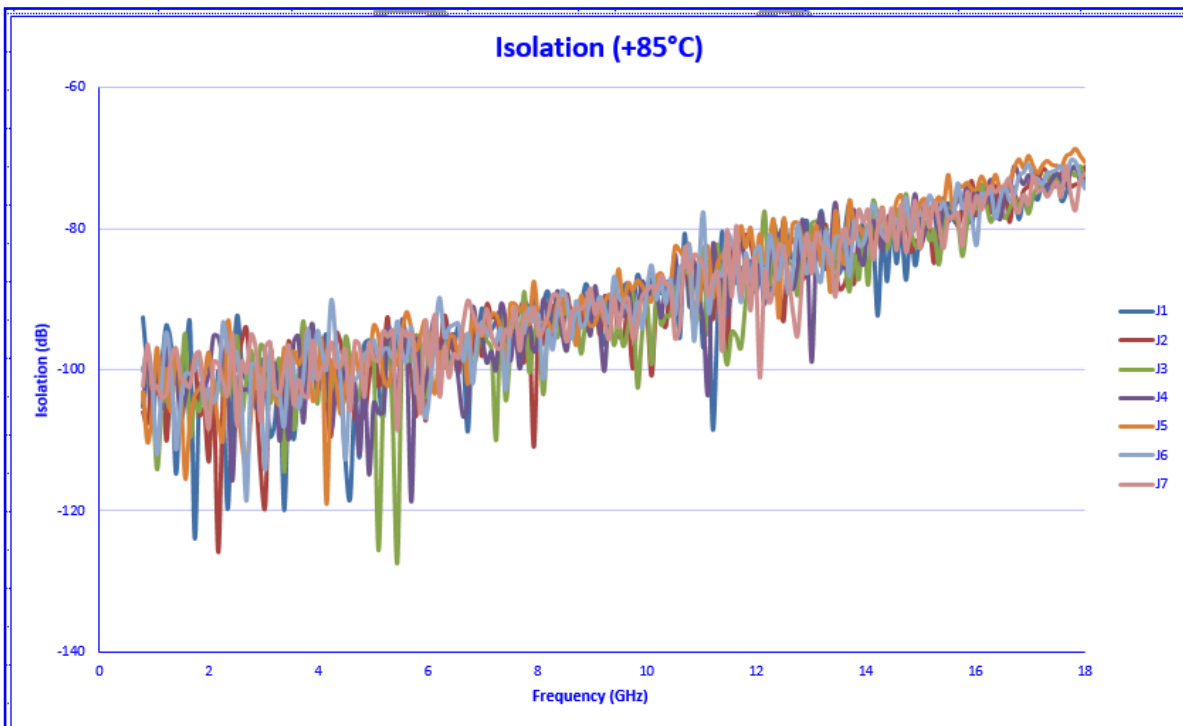
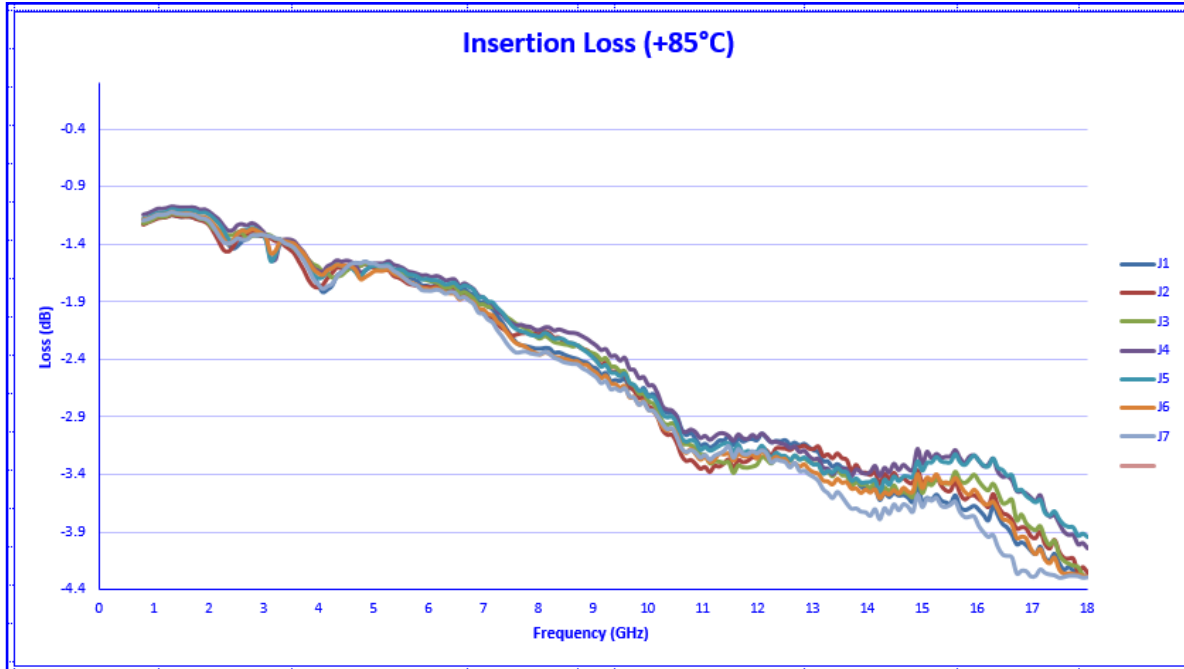
(0.8 TO 18GHz)





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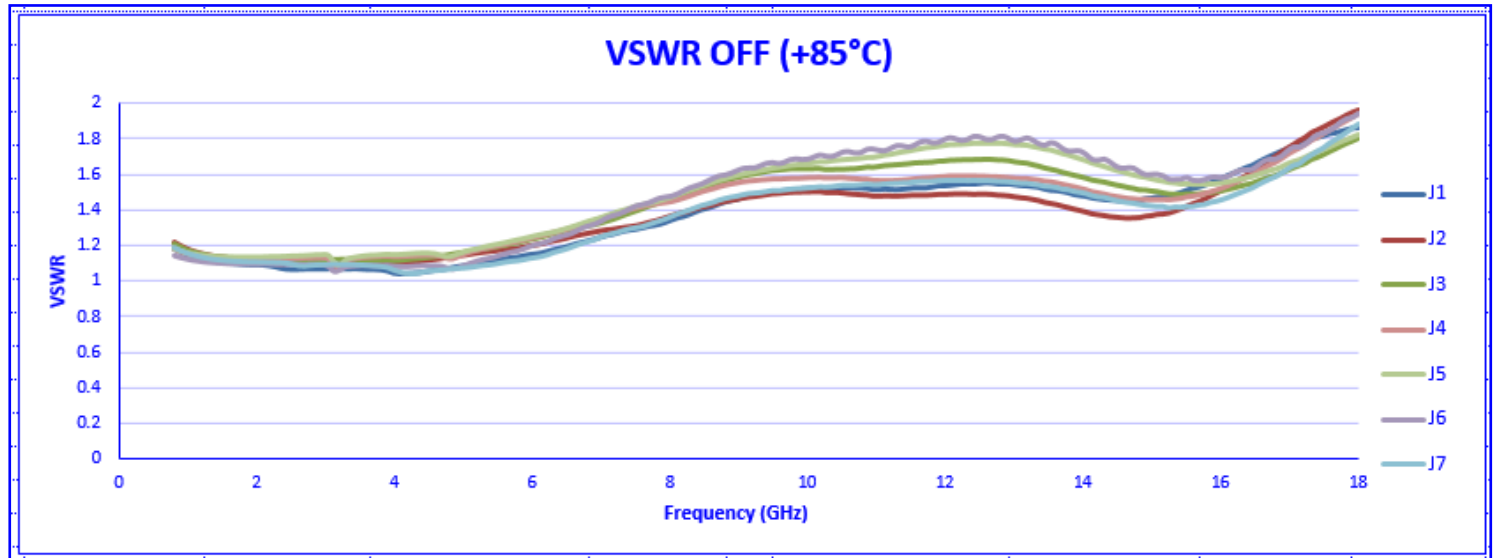
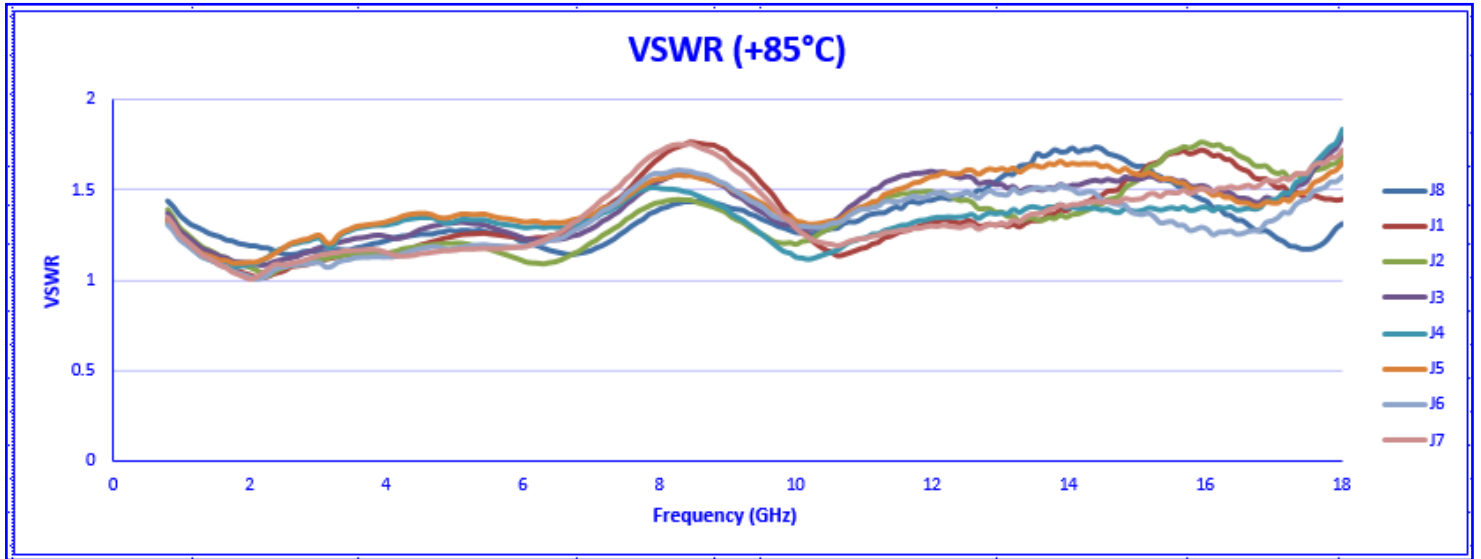
(0.8 TO 18GHz)





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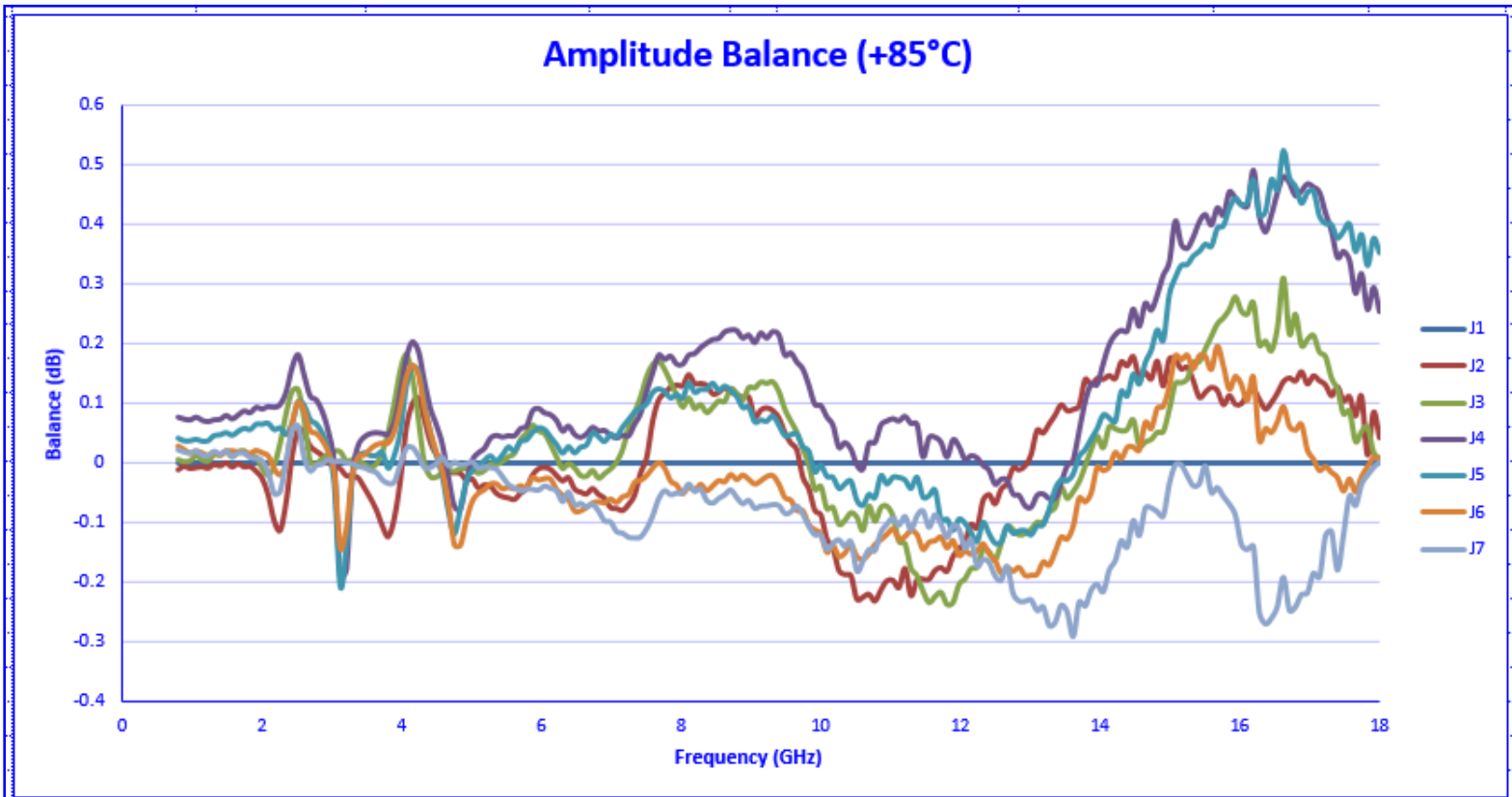
(0.8 TO 18GHz)





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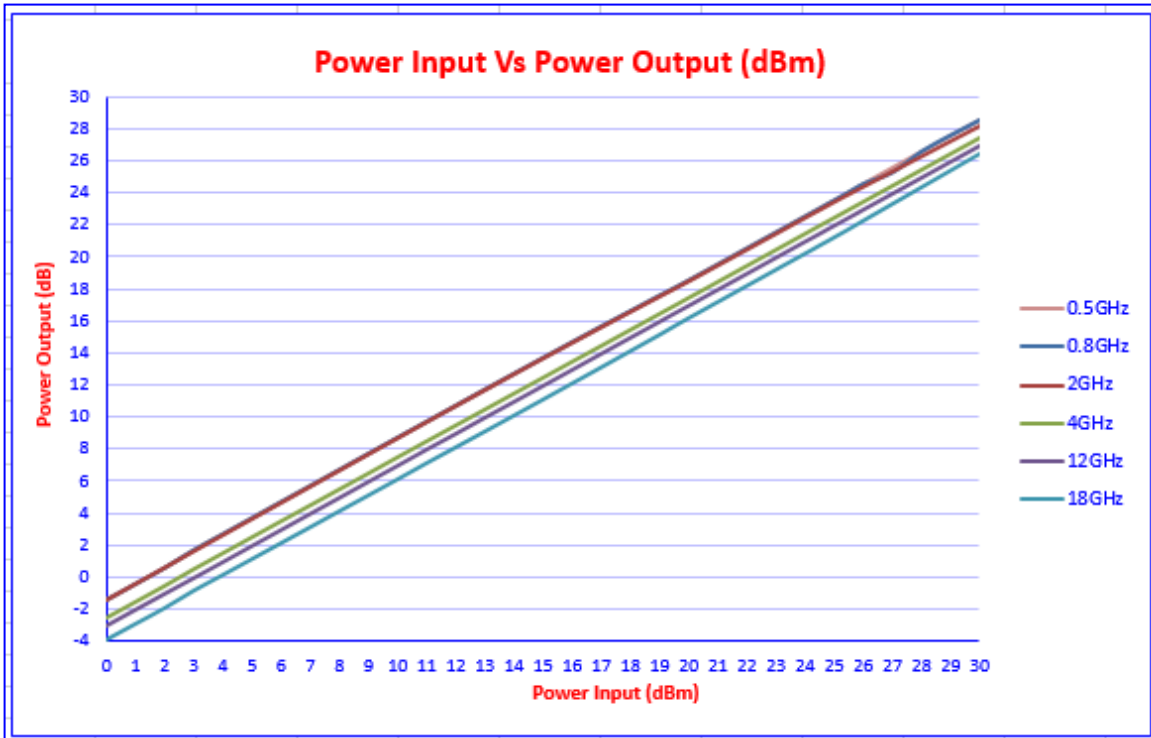
(0.8 TO 18GHz)





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(0.8 TO 18GHz)



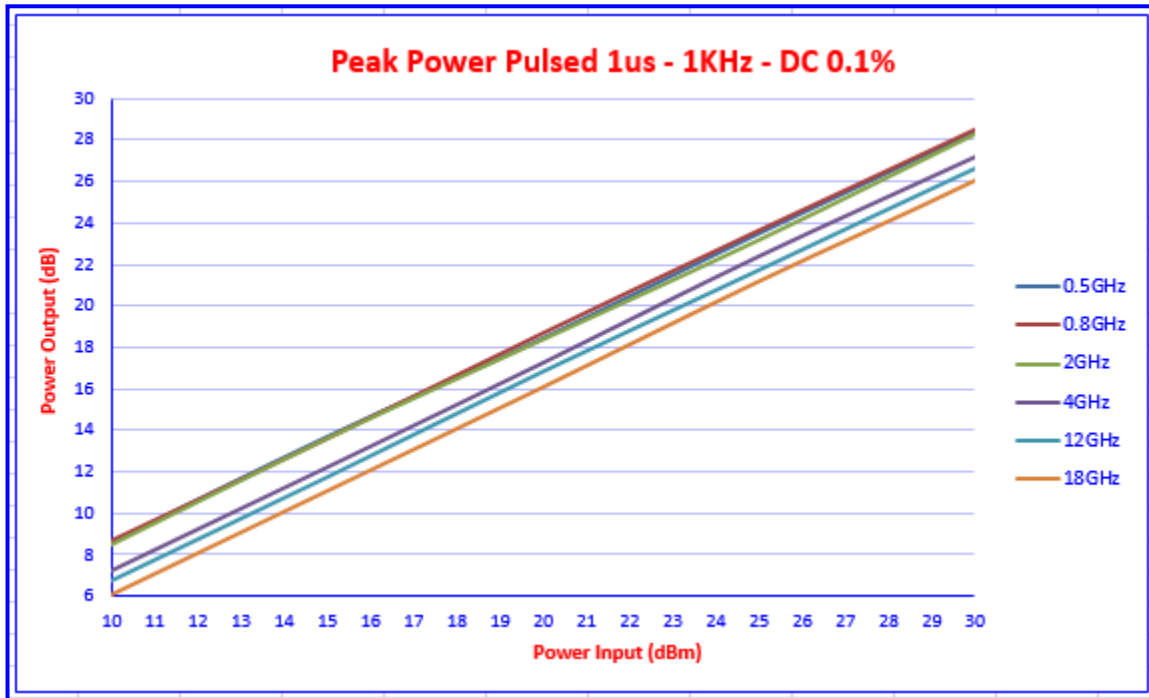
High Power Test Dat

0.5GHz			0.8GHz			2GHz			4GHz			12GHz			18GHz		
POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS
0	-1.4903	1.4903	0	-1.4011	1.4011	0	-1.3841	1.3841	0	-2.5625	2.5625	0	-3.1099	3.1099	0	-3.9241	3.9241
1	-0.4897	1.4897	1	-0.4015	1.4015	1	-0.3798	1.3798	1	-1.5662	2.5662	1	-2.1107	3.1107	1	-2.9375	3.9375
2	0.5115	1.4885	2	0.5978	1.4022	2	0.6318	1.3682	2	-0.572	2.572	2	-1.1119	3.1119	2	-1.9474	3.9474
3	1.6249	1.3751	3	1.7049	1.2951	3	1.6564	1.3436	3	0.4698	2.5302	3	-0.1306	3.1306	3	-0.8594	3.8594
4	2.6262	1.3738	4	2.7042	1.2958	4	2.6658	1.3342	4	1.4655	2.5345	4	0.8705	3.1295	4	0.1273	3.8727
5	3.6288	1.3712	5	3.7054	1.2946	5	3.6748	1.3252	5	2.4627	2.5373	5	1.8728	3.1272	5	1.1188	3.8812
6	4.6313	1.3687	6	4.7084	1.2916	6	4.6827	1.3173	6	3.4597	2.5403	6	2.8767	3.1233	6	2.114	3.886
7	5.6341	1.3659	7	5.7106	1.2894	7	5.6926	1.3074	7	4.4545	2.5455	7	3.8799	3.1201	7	3.1111	3.8889
8	6.6364	1.3636	8	6.7092	1.2908	8	6.7015	1.2985	8	5.4514	2.5486	8	4.8825	3.1175	8	4.1077	3.8923
9	7.6554	1.3446	9	7.7217	1.2783	9	7.7179	1.2821	9	6.447	2.553	9	5.8858	3.1142	9	5.1039	3.8961
10	8.6421	1.3579	10	8.7168	1.2832	10	8.722	1.278	10	7.4487	2.5513	10	6.8878	3.1122	10	6.1006	3.8994
11	9.6451	1.3549	11	9.7144	1.2856	11	9.7269	1.2731	11	8.4438	2.5562	11	7.9046	3.0954	11	7.1144	3.8856
12	10.646	1.354	12	10.713	1.287	12	10.731	1.269	12	9.4357	2.5643	12	8.8878	3.1122	12	8.1059	3.8941
13	11.652	1.348	13	11.712	1.288	13	11.729	1.271	13	10.428	2.572	13	9.8902	3.1098	13	9.0937	3.9063
14	12.645	1.355	14	12.707	1.293	14	12.721	1.279	14	11.419	2.581	14	10.881	3.119	14	10.095	3.905
15	13.638	1.362	15	13.695	1.305	15	13.708	1.292	15	12.411	2.589	15	11.88	3.12	15	11.097	3.903
16	14.613	1.387	16	14.672	1.328	16	14.682	1.318	16	13.408	2.592	16	12.883	3.117	16	12.105	3.895
17	15.589	1.411	17	15.65	1.35	17	15.653	1.347	17	14.398	2.602	17	13.886	3.114	17	13.113	3.887
18	16.557	1.443	18	16.614	1.386	18	16.619	1.381	18	15.392	2.608	18	14.887	3.113	18	14.123	3.877
19	17.502	1.498	19	17.573	1.427	19	17.576	1.424	19	16.39	2.61	19	15.89	3.11	19	15.139	3.861
20	18.508	1.492	20	18.513	1.487	20	18.518	1.482	20	17.386	2.614	20	16.889	3.111	20	16.185	3.815
25	23.520	1.480	25	23.50	1.500	25	23.47	1.53	25	22.382	2.618	25	21.888	3.112	25	21.231	3.769
26	24.550	1.450	26	24.52	1.480	26	24.42	1.5805	26	23.378	2.622	26	22.887	3.113	26	22.277	3.723
27	25.560	1.440	27	25.23	1.770	27	25.37	1.631	27	24.374	2.626	27	23.886	3.114	27	23.323	3.677
28	26.570	1.430	28	26.54	1.460	28	26.32	1.6815	28	25.37	2.63	28	24.885	3.115	28	24.369	3.631
29	27.580	1.420	29	27.55	1.450	29	27.27	1.732	29	26.366	2.634	29	25.884	3.116	29	25.415	3.585
30	28.550	1.450	30	28.50	1.500	30	28.22	1.7825	30	27.362	2.638	30	26.883	3.117	30	26.461	3.539



TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

(0.8 TO 18GHz)



Peak Power Test Data.

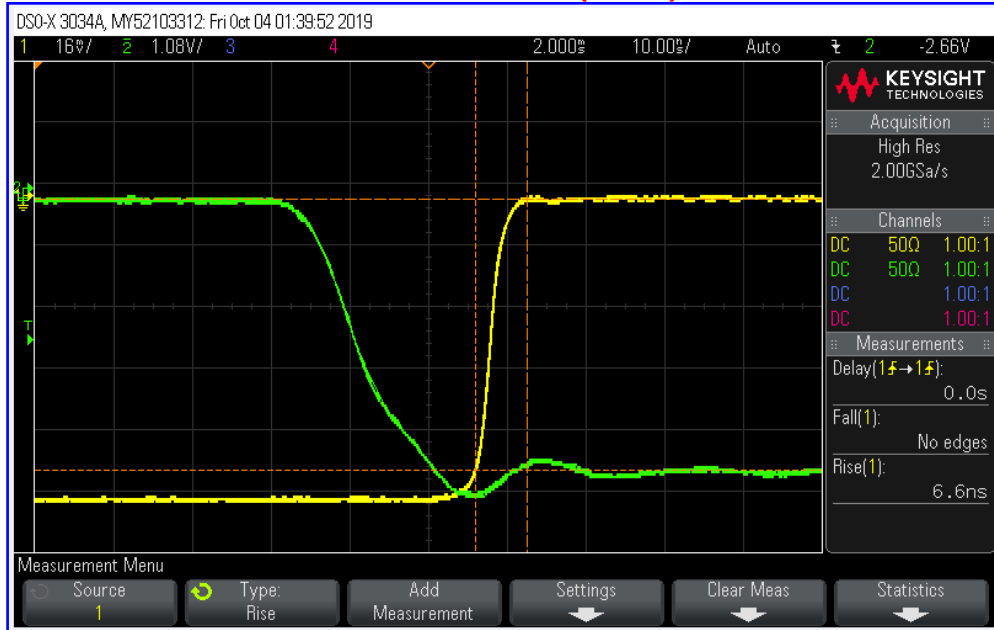
PEAK POWER PULSED 1us - 1KHz - DC 0.1%																	
0.5GHz			0.8GHz			2GHz			4GHz			12GHz			18GHz		
POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS	POWER IN	POWER OUT	LOSS
10	8.60	1.40	10	8.70	1.30	10	8.50	1.50	10	7.20	2.80	10	6.70	3.30	10	6.10	3.90
15	13.70	1.30	15	13.62	1.38	15	13.62	1.38	15	12.20	2.80	15	11.70	3.30	15	11.10	3.90
20	18.45	1.55	20	18.70	1.30	20	18.40	1.60	20	17.25	2.75	20	16.80	3.20	20	16.10	3.90
25	23.50	1.50	25	23.65	1.35	25	23.20	1.80	25	22.40	2.60	25	21.70	3.30	25	21.20	3.80
30	28.40	1.60	30	28.50	1.50	30	28.30	1.70	30	27.20	2.80	30	26.60	3.40	30	26.05	3.95
35	33.40	1.60	35	33.55	1.45	35	33.35	1.65	35	32.10	2.90	35	31.30	3.70	35	31.30	3.70
36	34.40	1.60	36	34.50	1.50	36	34.22	1.78	36	33.18	2.82	36	32.20	3.80	36	32.00	4.00
37	35.35	1.65	37	35.45	1.55	37	35.25	1.75	37	34.15	2.85	37	33.30	3.70	37	33.00	4.00
38	36.36	1.64	38	36.50	1.50	38	36.20	1.80	38	35.18	2.82	38	34.40	3.60	38	34.00	4.00
39	37.30	1.70	39	37.50	1.50	39	37.10	1.90	39	36.25	2.75	39	35.30	3.70	39	34.80	4.20
40	38.30	1.70	40	38.50	1.50	40	38.15	1.85	40	37.30	2.70	40	36.28	3.72	40	35.90	4.10

10 WATTS

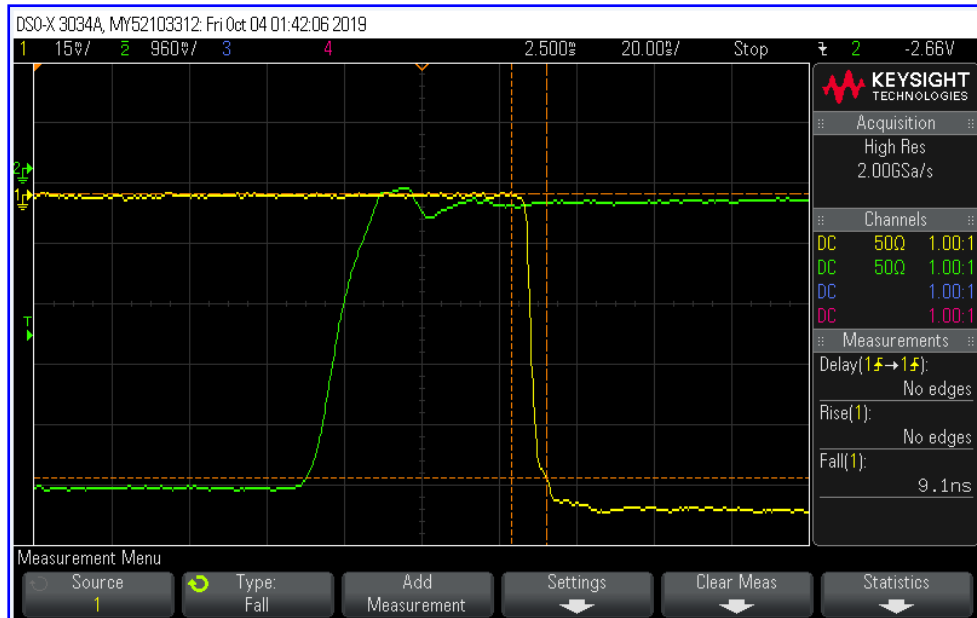


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(0.8 TO 18GHz)
Rise Time 10 ns per Div.
Measured value (6.6ns)



Fall Time 20ns per Div.
Measured value (9.1ns)

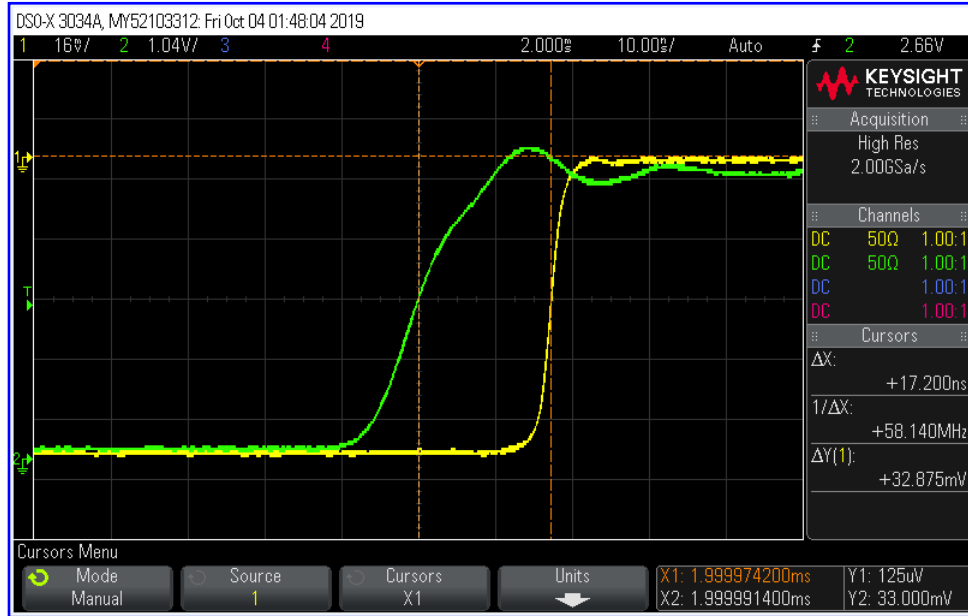


Green trace: TTL signal
Yellow trace: RF signal

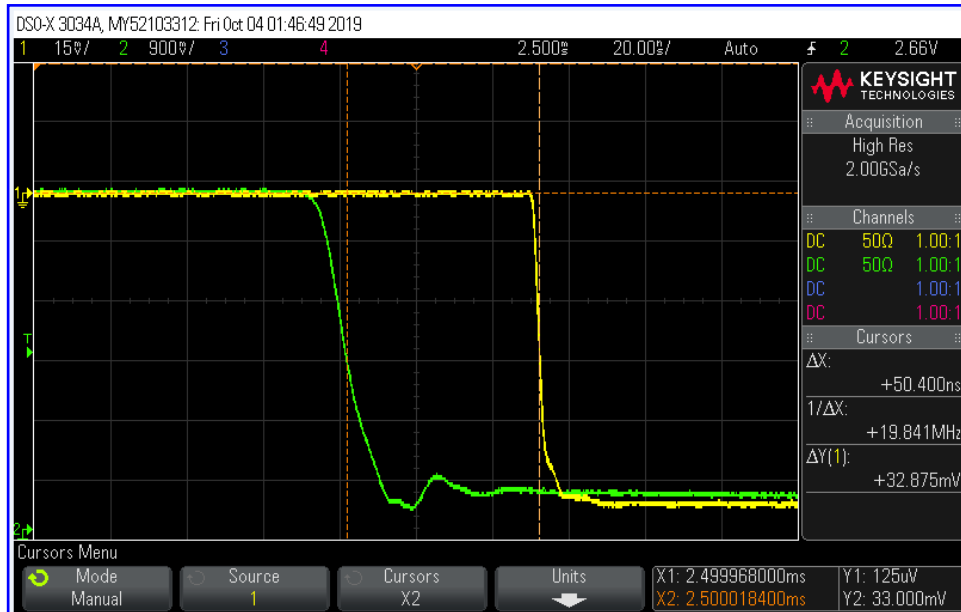


TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

(0.8 TO 18GHz)
Delay ON 10 ns per Div.
Measured value (17.20ns)



Delay OFF 20 ns per Div.
Measured value (50.40ns)

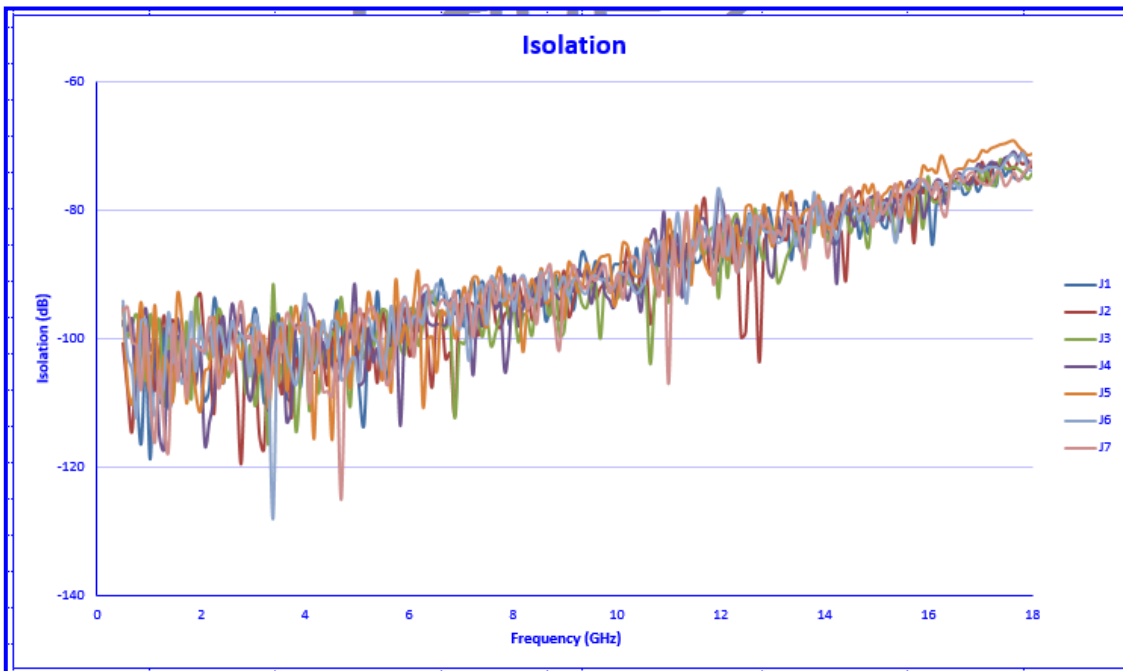
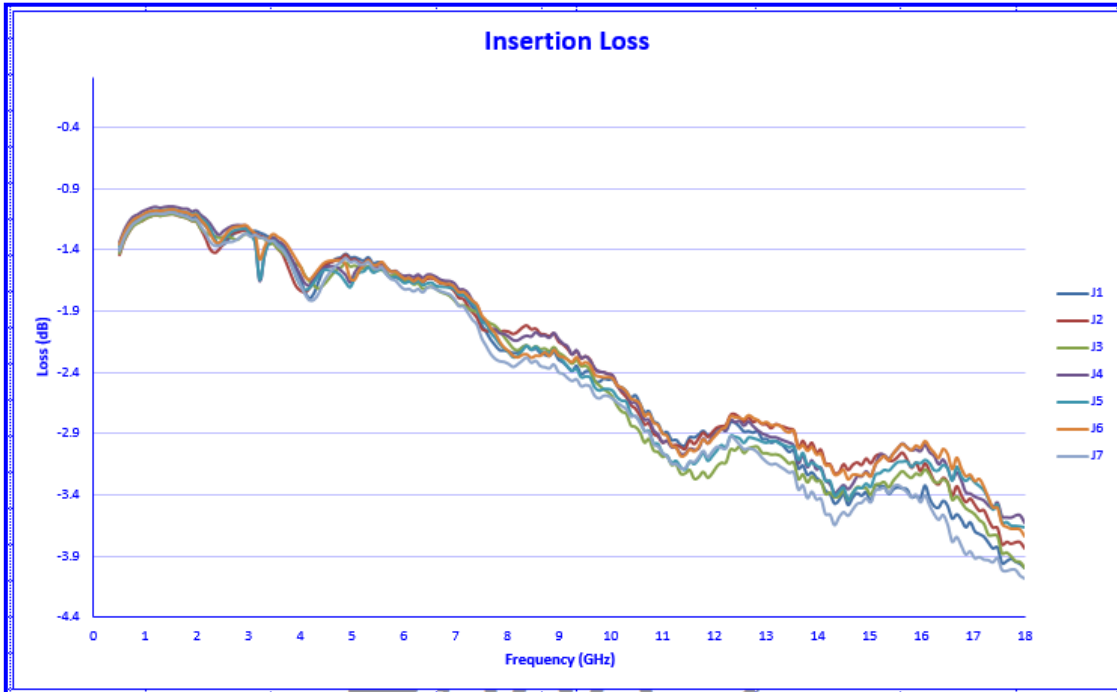


Green trace: TTL signal
Yellow trace: RF signal



TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

CHAPTER 2 (0.5 TO 18GHz) +25 °C

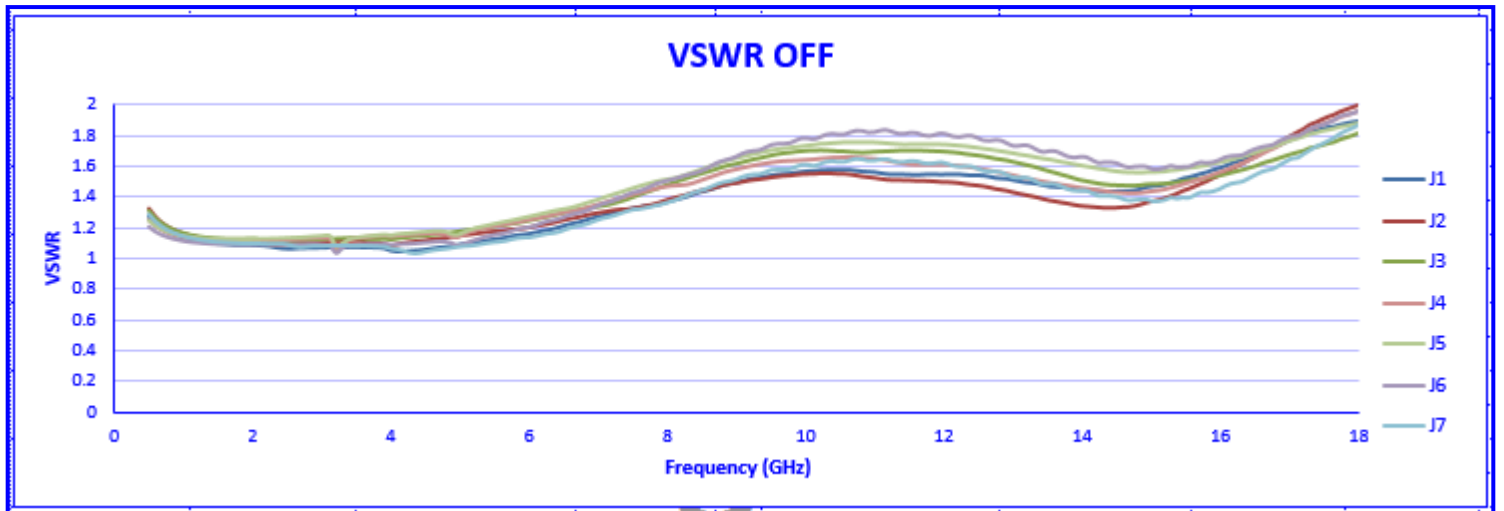
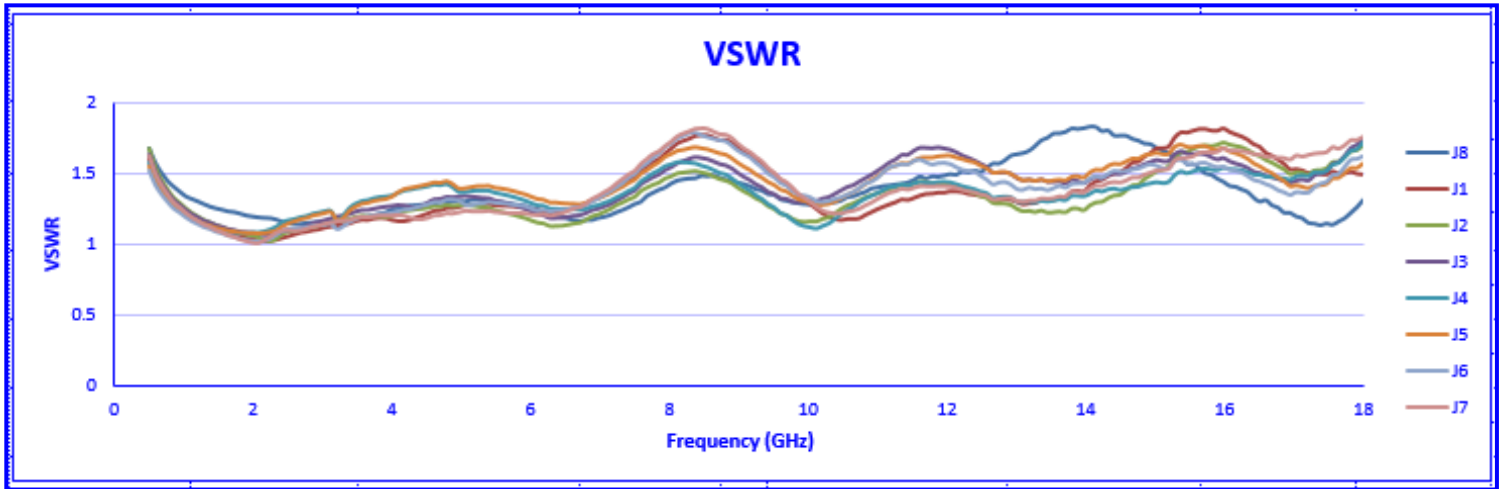




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(0.5 TO 18GHz)

+25 °C



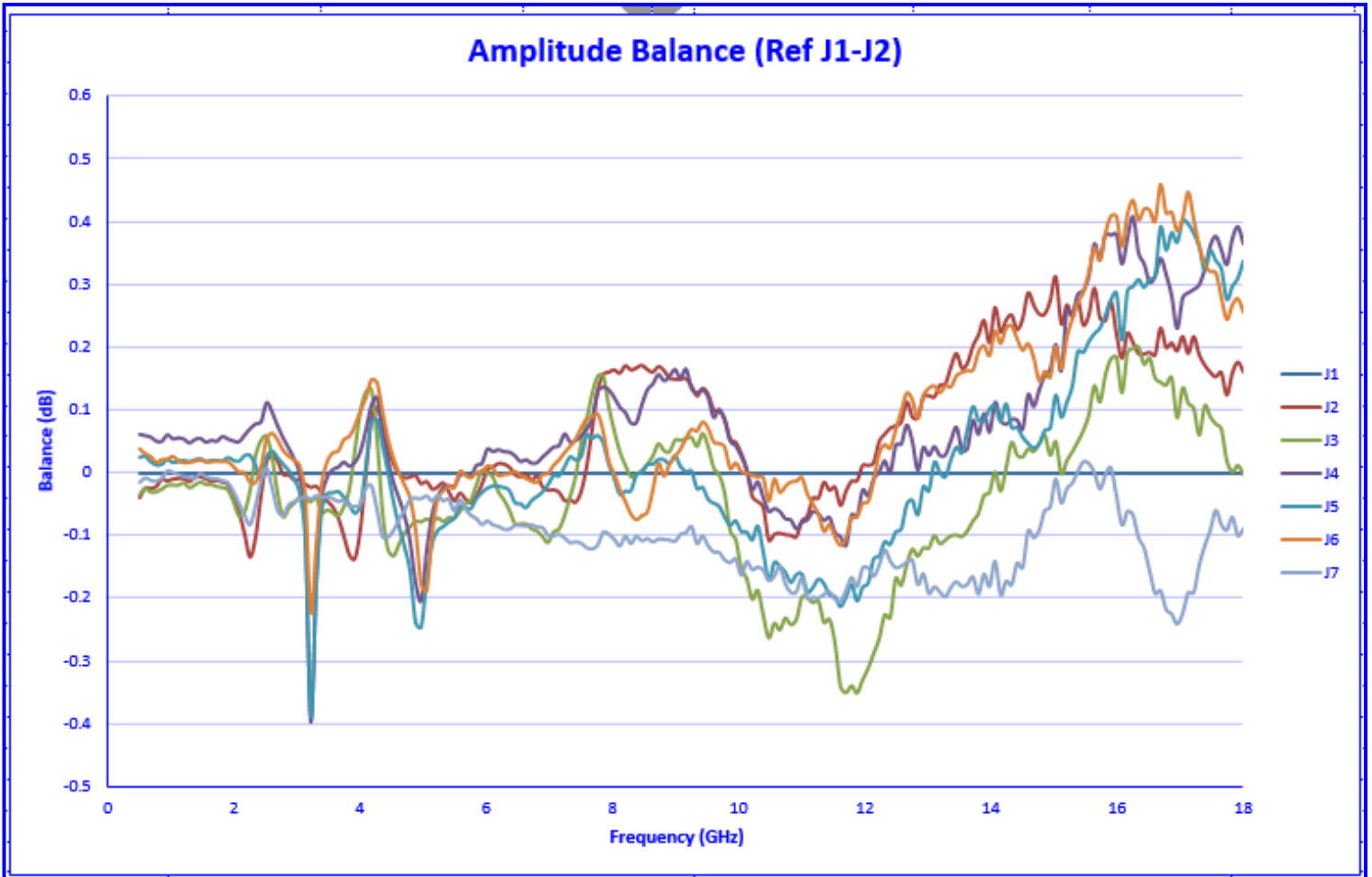


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(0.5 TO 18GHz)

+25 °C

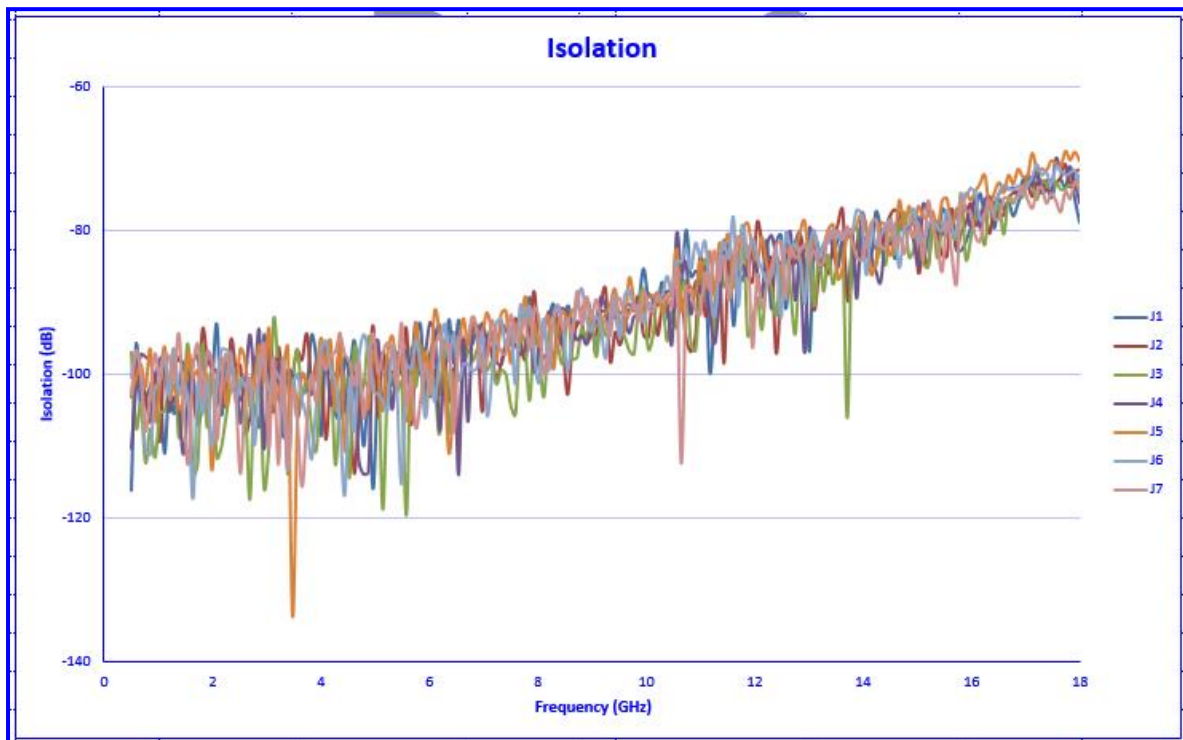
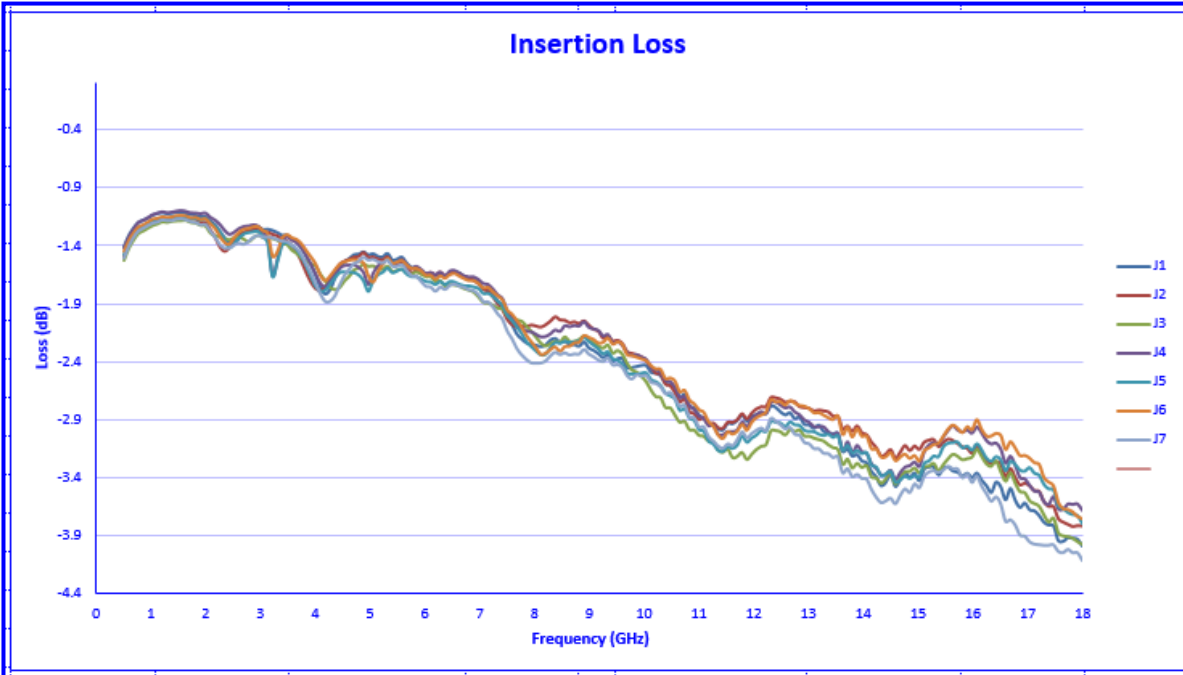
Amplitude Balance (Ref J1-J2)





**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

**(0.5 TO 18GHz)
-40 °C**

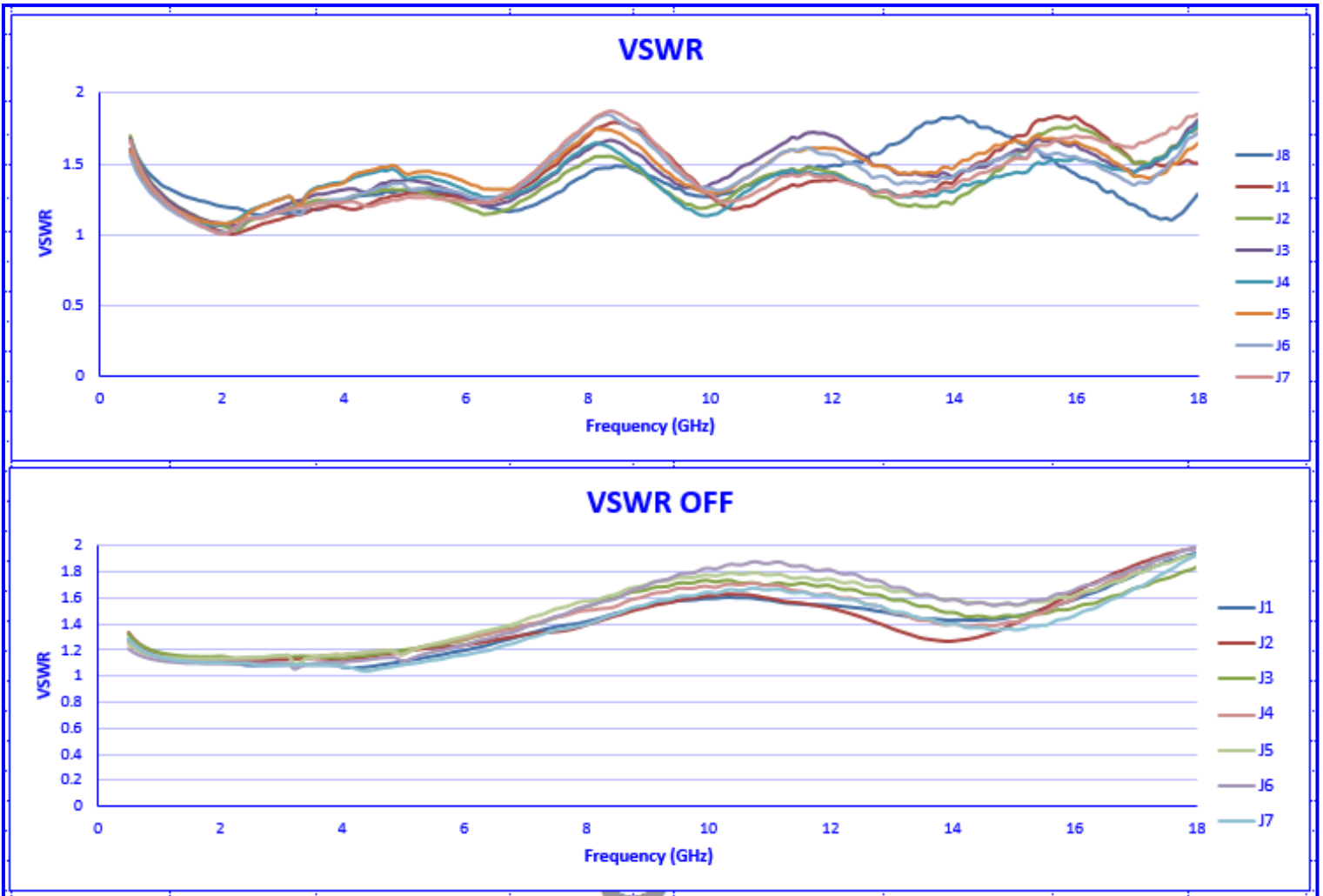




**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

(0.5 TO 18GHz)

-40 °C

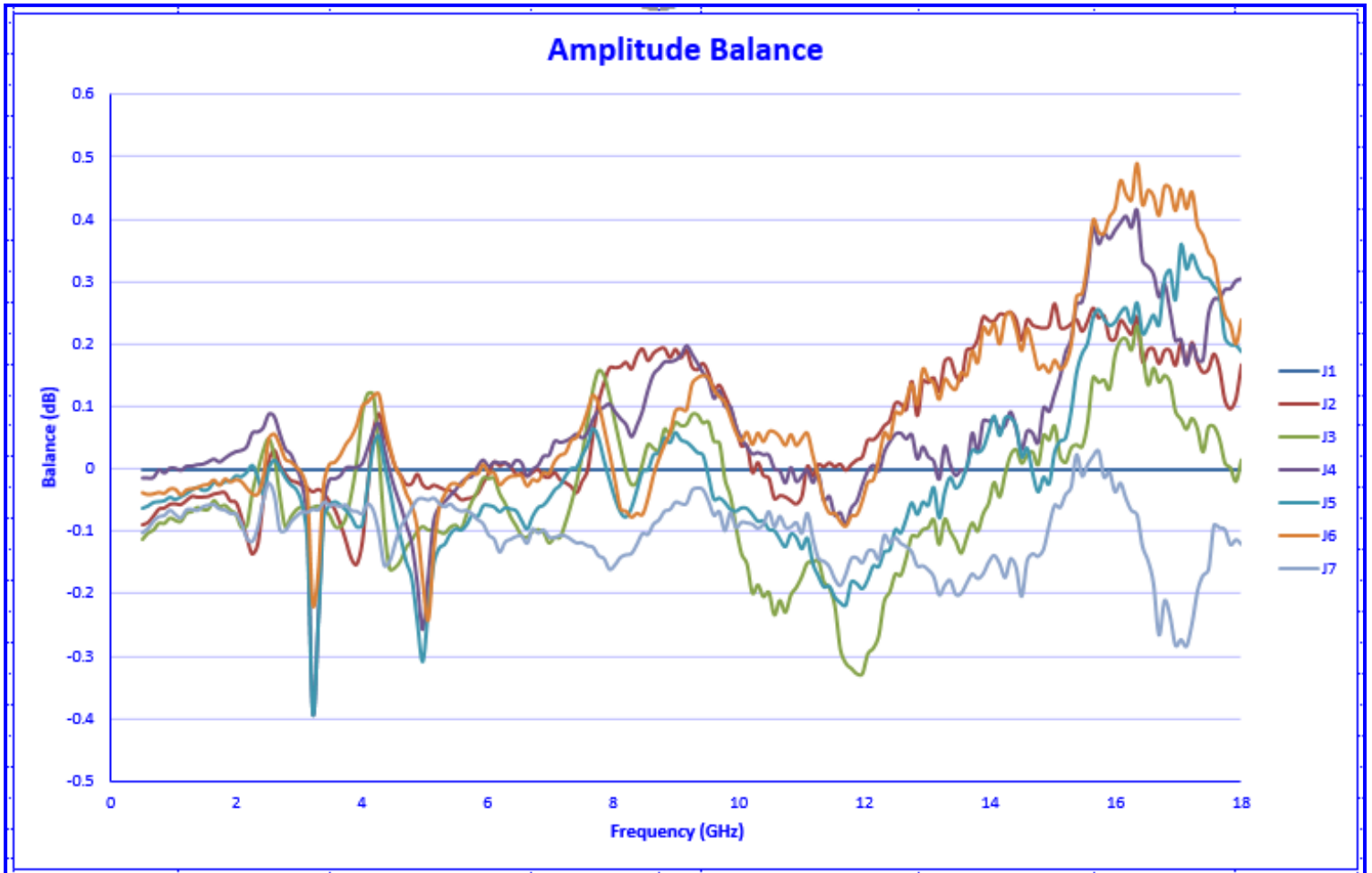




**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

(0.5 TO 18GHz)

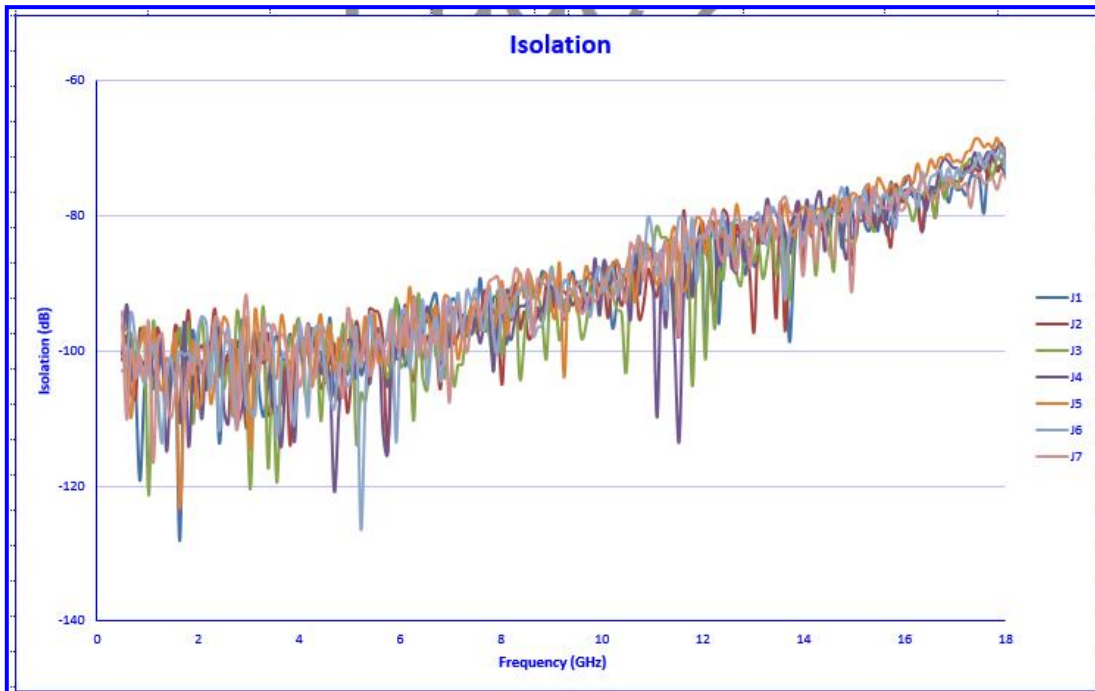
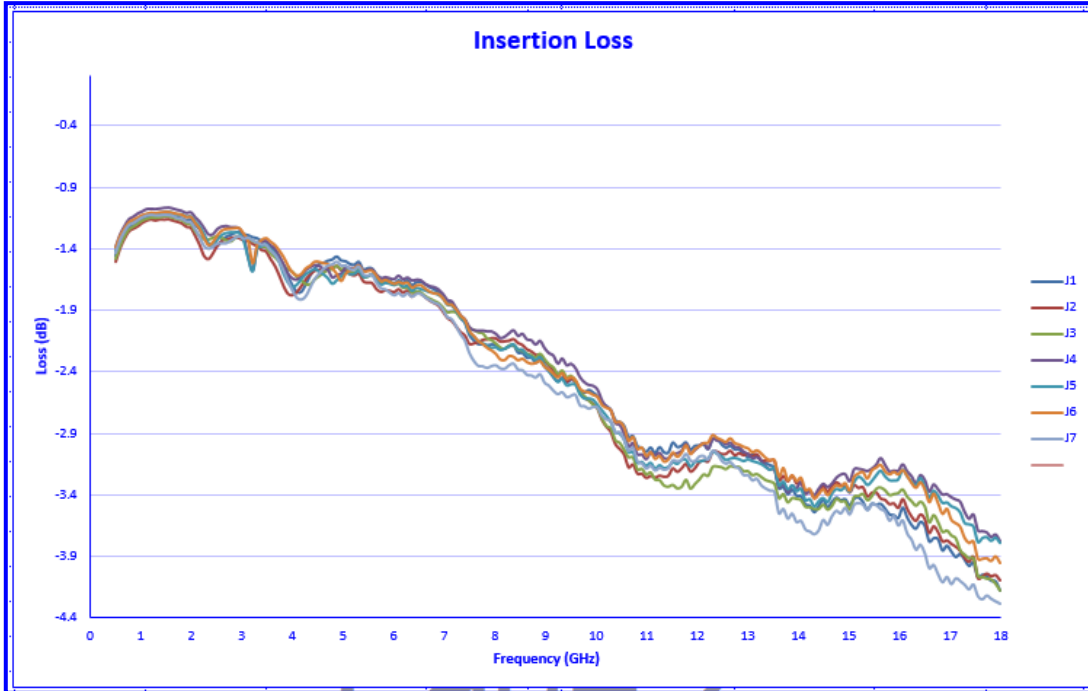
-40 °C





TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

(0.5 TO 18GHz)
+85 °C

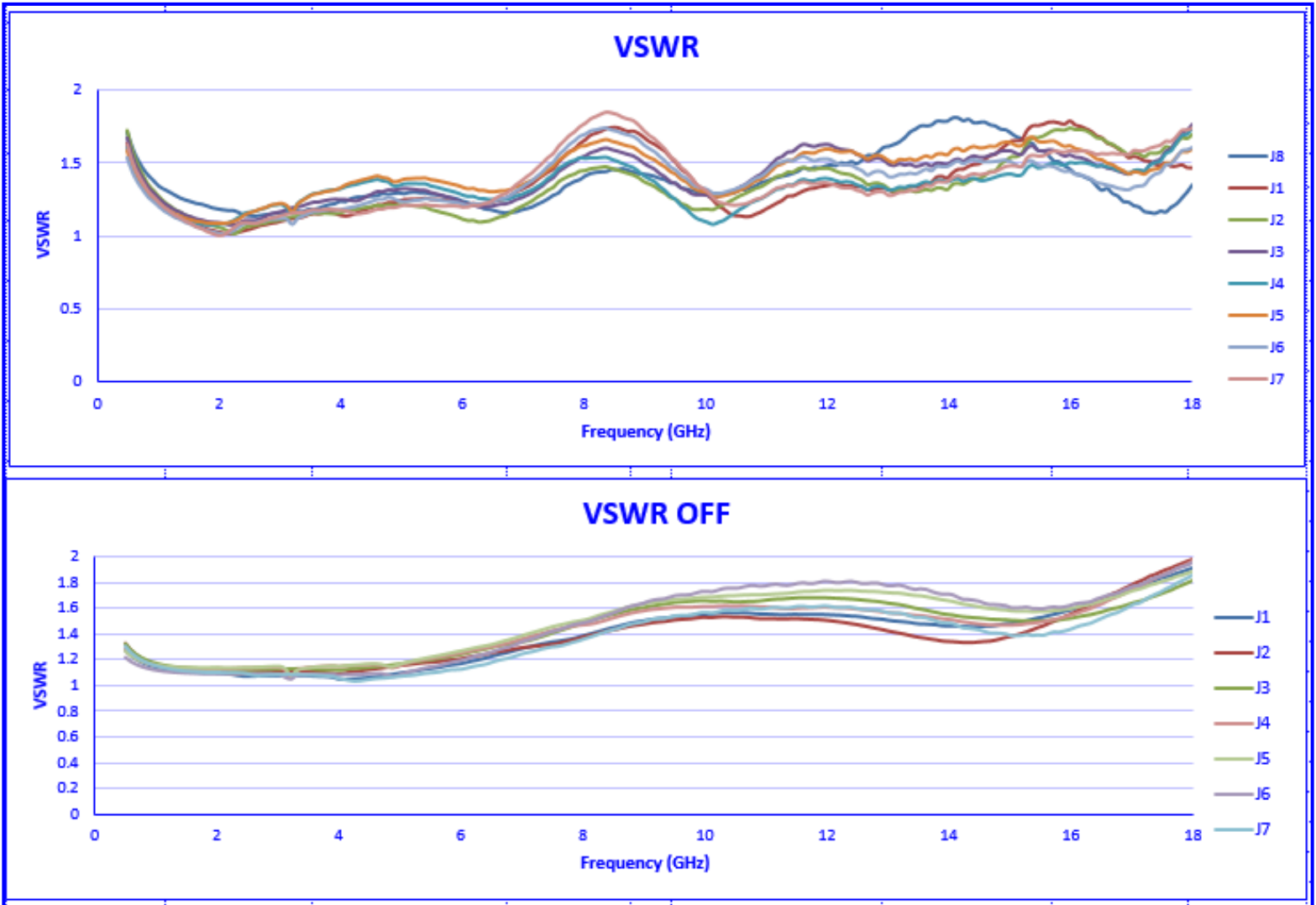




**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

(0.5 TO 18GHz)

+85 °C

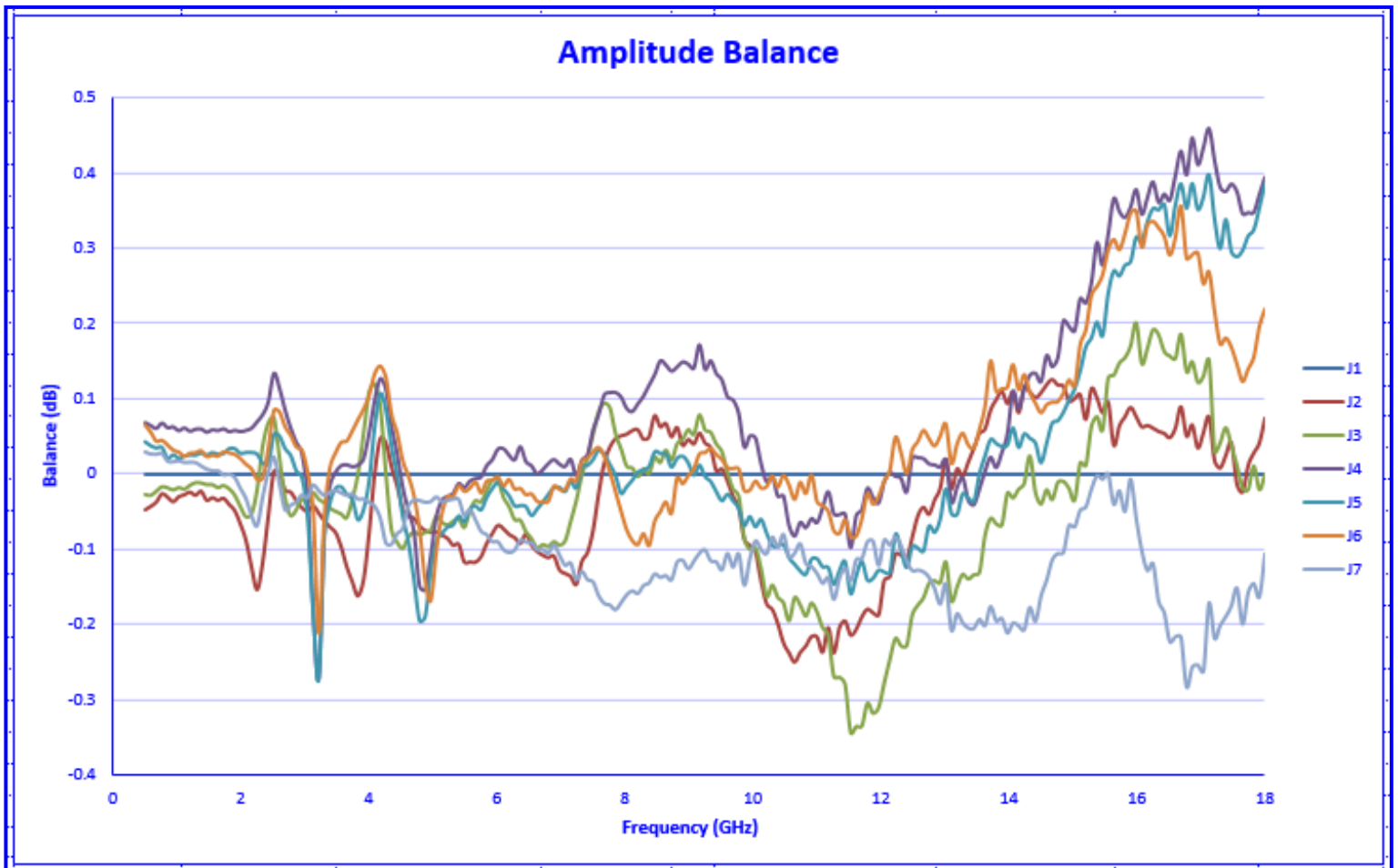




**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

(0.5 TO 18GHz)

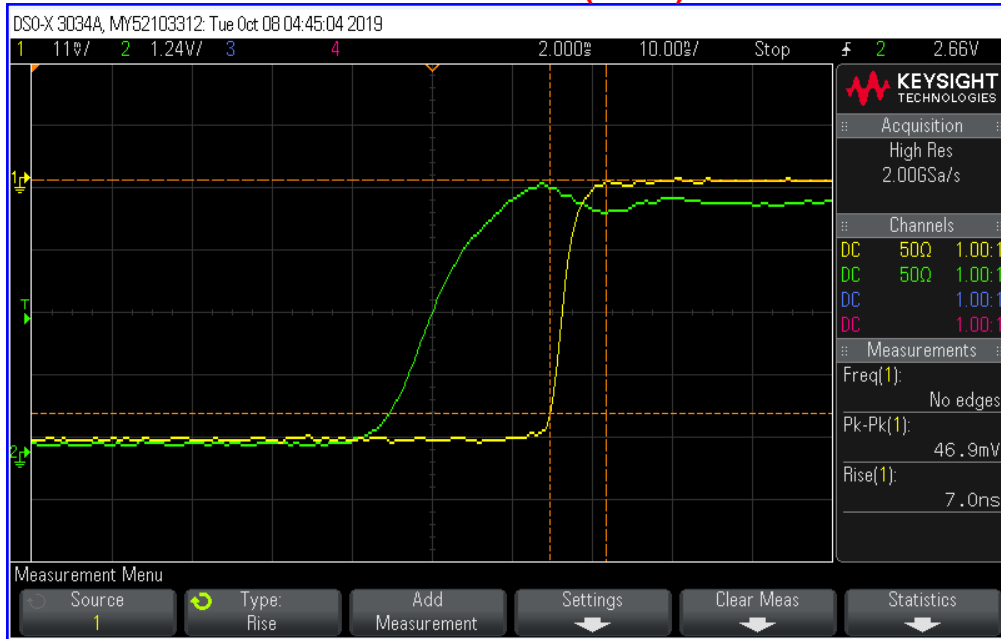
+85 °C



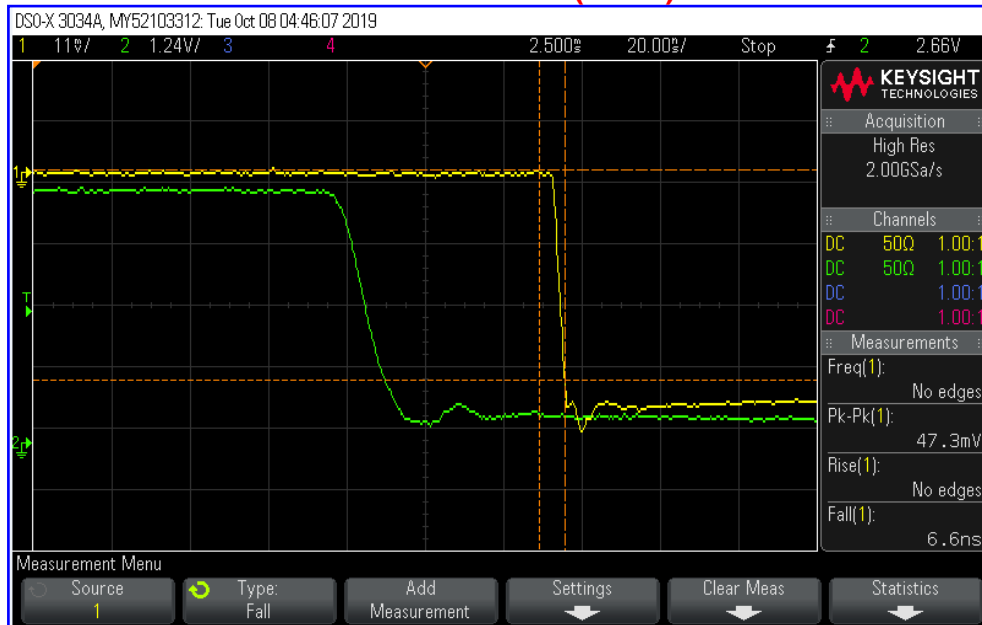


TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

(0.5 TO 18GHz)
Rise Time 10 ns per Div.
Measured value (7.0ns)



Fall Time 20ns per Div.
Measured value (6.6ns)

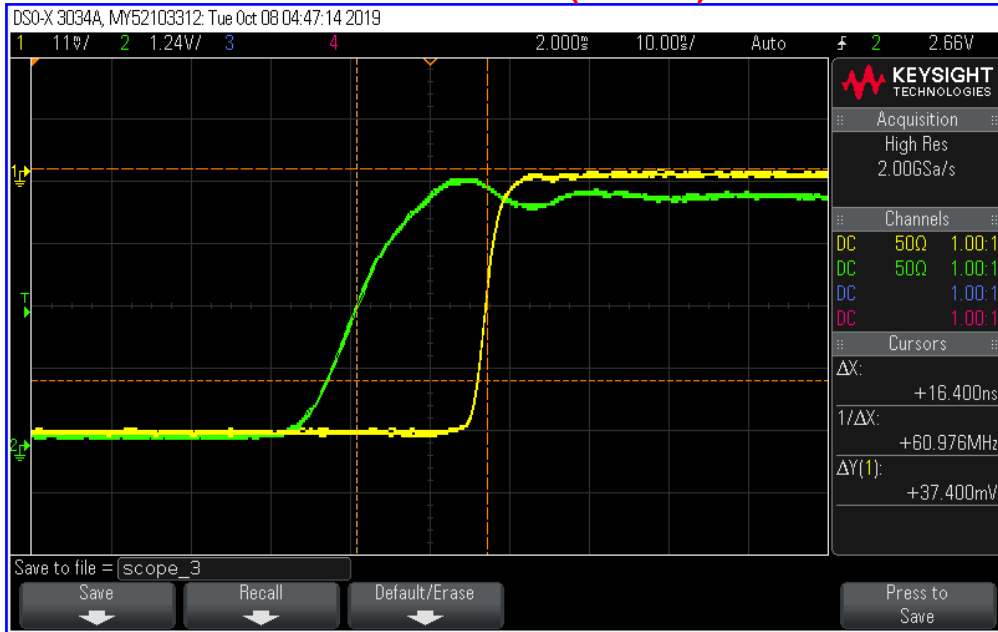


Green trace: TTL signal
Yellow trace: RF signal

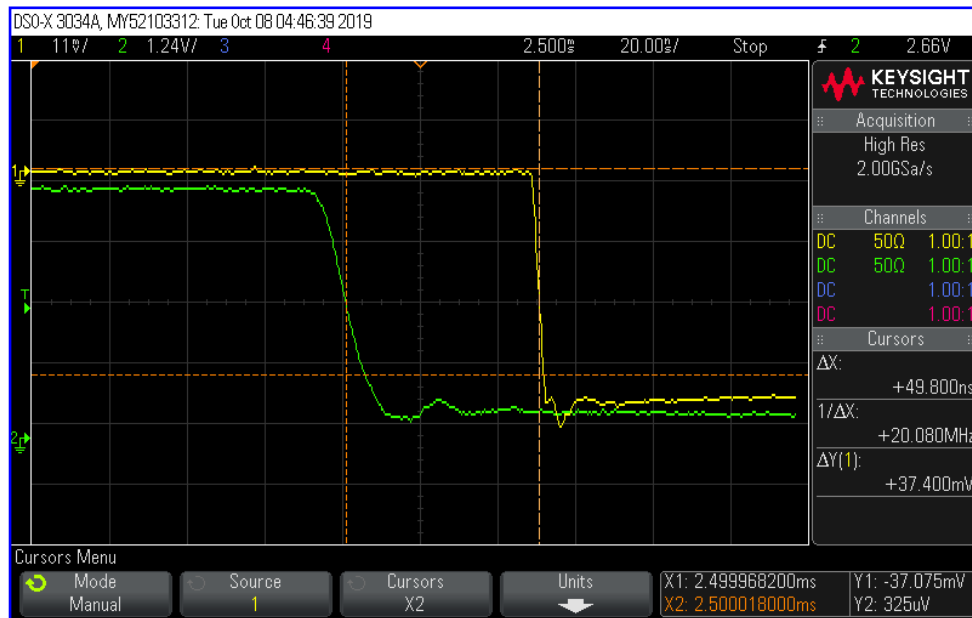


TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

(0.5 TO 18GHz)
Delay ON 10 ns per Div.
Measured value (16.40ns)



Delay OFF 20 ns per Div.
Measured value (49.80ns)

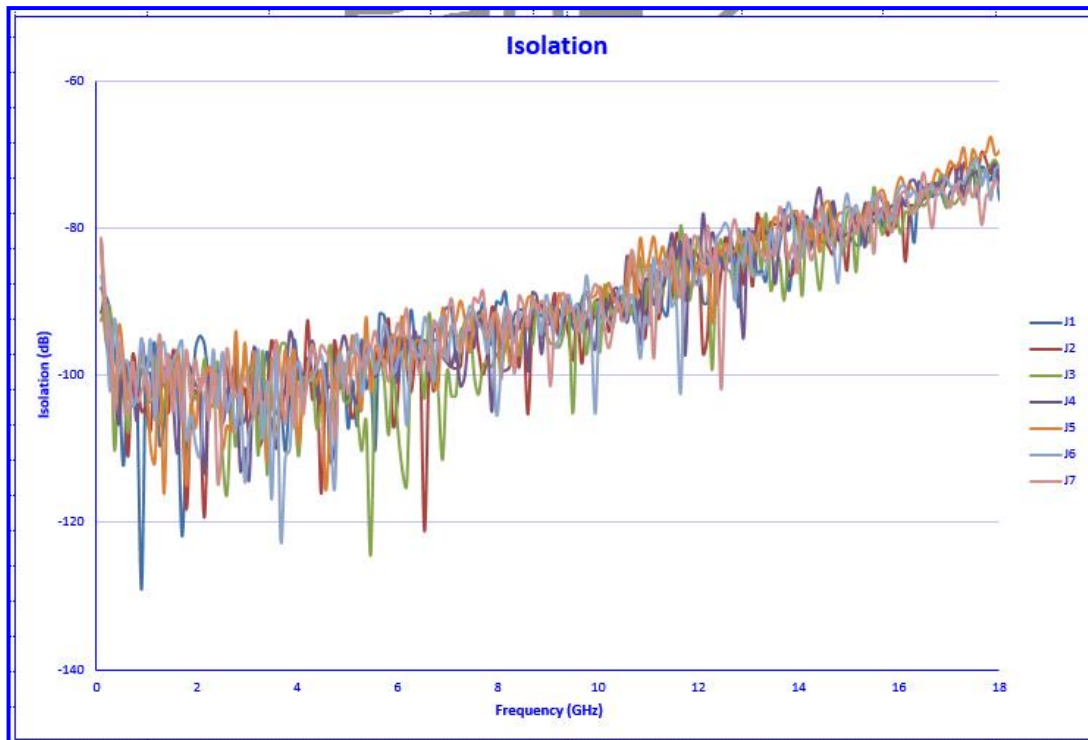
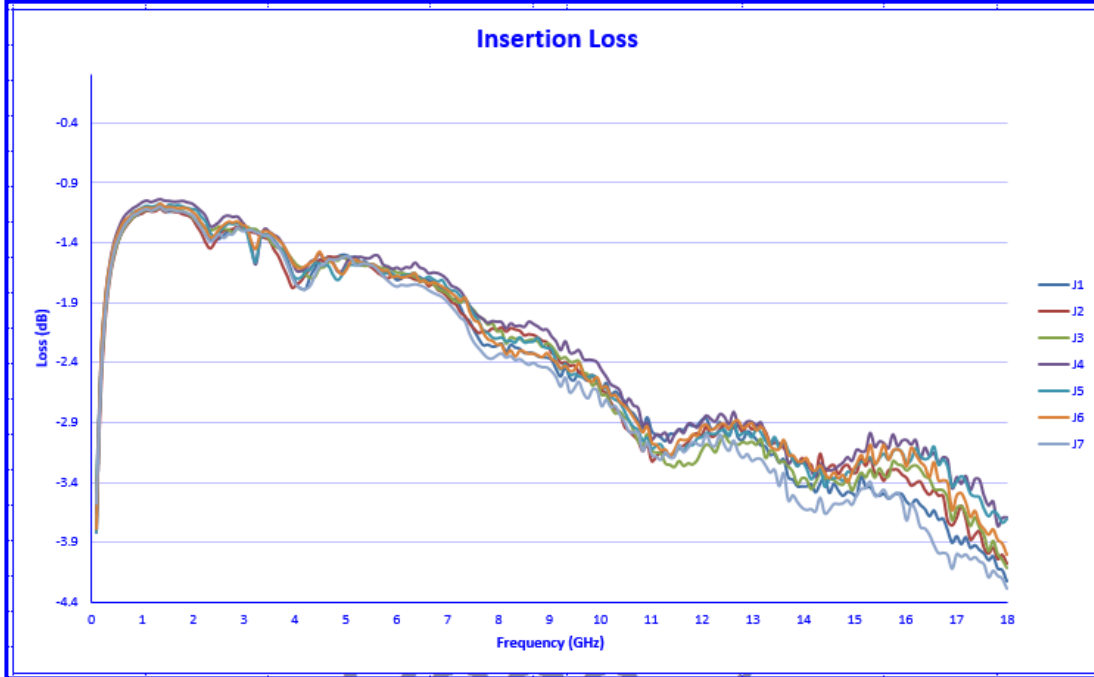


Green trace: TTL signal
Yellow trace: RF signal



TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

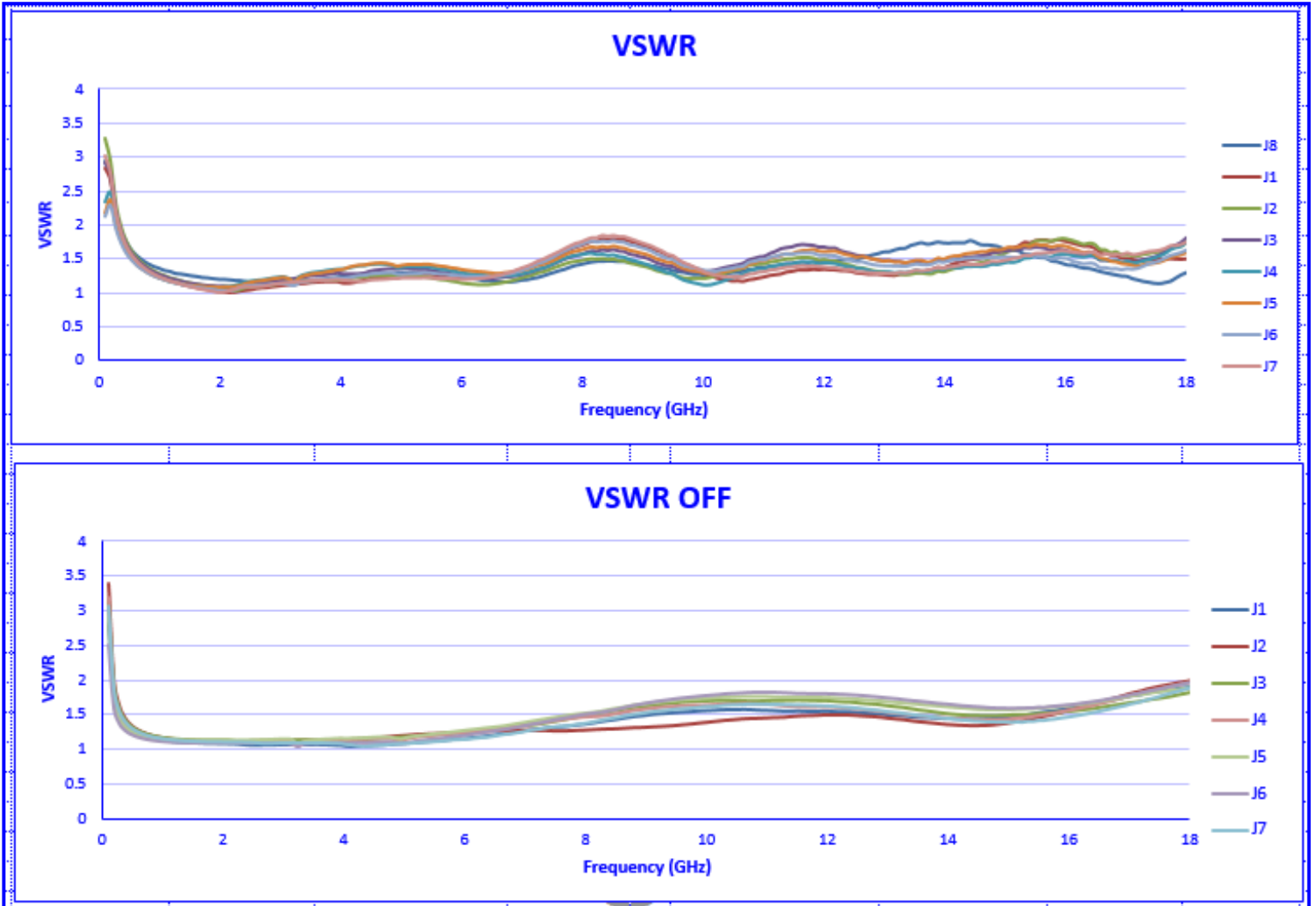
CHAPTER 3 (0.1 TO 18GHz)





TYPICAL CHARACTERISTICS ON P7T-0R8G18G-60-T-SFF-SMC

(0.1 TO 18GHz)





**TYPICAL CHARACTERISTICS
ON
P7T-0R8G18G-60-T-SFF-SMC**

(0.1 TO 18GHz)

