



**Typical Characteristics
ON
P2T-6G18G-40-R-570-SFF-300W**

PMI MODEL P2T-6G18G-40-R-570-SFF-300W IS A REFLECTIVE 300W PEAK HIGH-POWER COLD SWITCHING SINGLE POLE DOUBLE THROW SWITCH OPERATING IN THE 6-18 GHz FREQUENCY RANGE.



November 16, 2021

Designed By:

Engineering PMI

Tested and Reported By:

Alfredo Lopez



Typical Characteristics ON P2T-6G18G-40-R-570-SFF-300W

Outline Drawing

DESCRIPTION

PMI MODEL P2T-6G18G-40-R-570-SFF-300W IS A REFLECTIVE 300W PEAK HIGH-POWER COLD SWITCHING SINGLE POLE DOUBLE THROW SWITCH OPERATING IN THE 6-18 GHz FREQUENCY RANGE.

SPECIFICATIONS

- FREQUENCY RANGE: 6-18 GHz
- POWER: 300W PEAK
- DUTY CYCLE: 20%
- INSERTION LOSS: 2.2dB MAX.
- ISOLATION: 40dB TYP. / 38dB MIN.
- PULSE WIDTH: 200 ns MAX.
- SWITCHING SPEED: 1.25 μ s MAX, (50% TTL TO 90% RF & 50% TTL TO 10% RF).
- VSWR IN/OUT: 2.0:1 MAX.
- LOAD VSWR: BETTER THAN 1.5:1
- DC VOLTAGE & CURRENT: +5V @ 300mA AND -70V @ 60mA
- CONTROL: SINGLE TTL (TTL "0" J1-J3 " LOW LOSS)
- CONNECTOR FOR RF PORT: SMA FEMALE
- CONNECTOR FOR CONTROL: 9 PIN MICRO D TYPE FEMALE, MATING WITH M83513/03A/03C (SEE CONNECTION TABLE BELOW)
- SIZE (NOT INCL. CONNECTORS): (L) 2.00" X (W) 2.00" X (H) 0.75"
- FINISH: PAINTED BLUE - NO PAINT ON MOUNTING SURFACE
- J4 CONNECTIONS

J4 PIN	CONNECT TO
1	U1 -70V
2	GROUND
3	U1 CONTROL
4	U1 +5V
5	U1 NC
6	U1 GROUND
7	U1 GROUND
8	U1 GROUND
9	U1 GROUND

ENVIRONMENTAL RATINGS

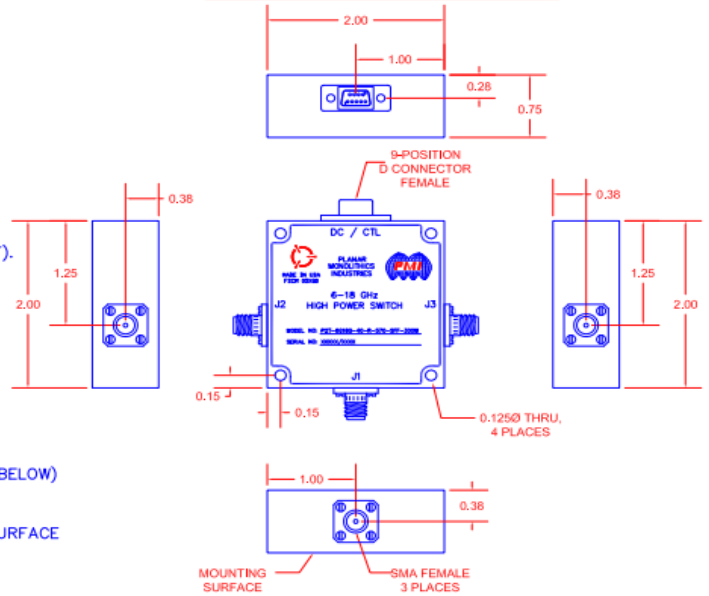
- TEMPERATURE: -40°C TO +85°C
- ENVIRONMENTAL: MIL-STD-810E
- EMI/EMC: MIL-STD-461

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

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	9/22/21	

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

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ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE	
DRAWN	SPH	6/22/21	PRODUCT FEATURE	
CHECKED			P2T-6G18G-40-R-570-SFF-300W	
ISSUED			SIZE	REV.
			A 05XQ0	A1
			DSG NO.	
			27042500	
			SCALE N: S	SHEET 1 OF 1



Typical Characteristics ON P2T-6G18G-40-R-570-SFF-300W

Technical Specifications

CONTROL: SINGLE TTL (TTL "0" J1-J3 "LOW LOSS")

J4 CONNECTIONS

PIN	CONNECT TO
1	U1 -70V
2	GROUND
3	U1 IN2, 2 (CTRL J3)
4	U1 +5V
5	U1 IN1, (CTRL J2)

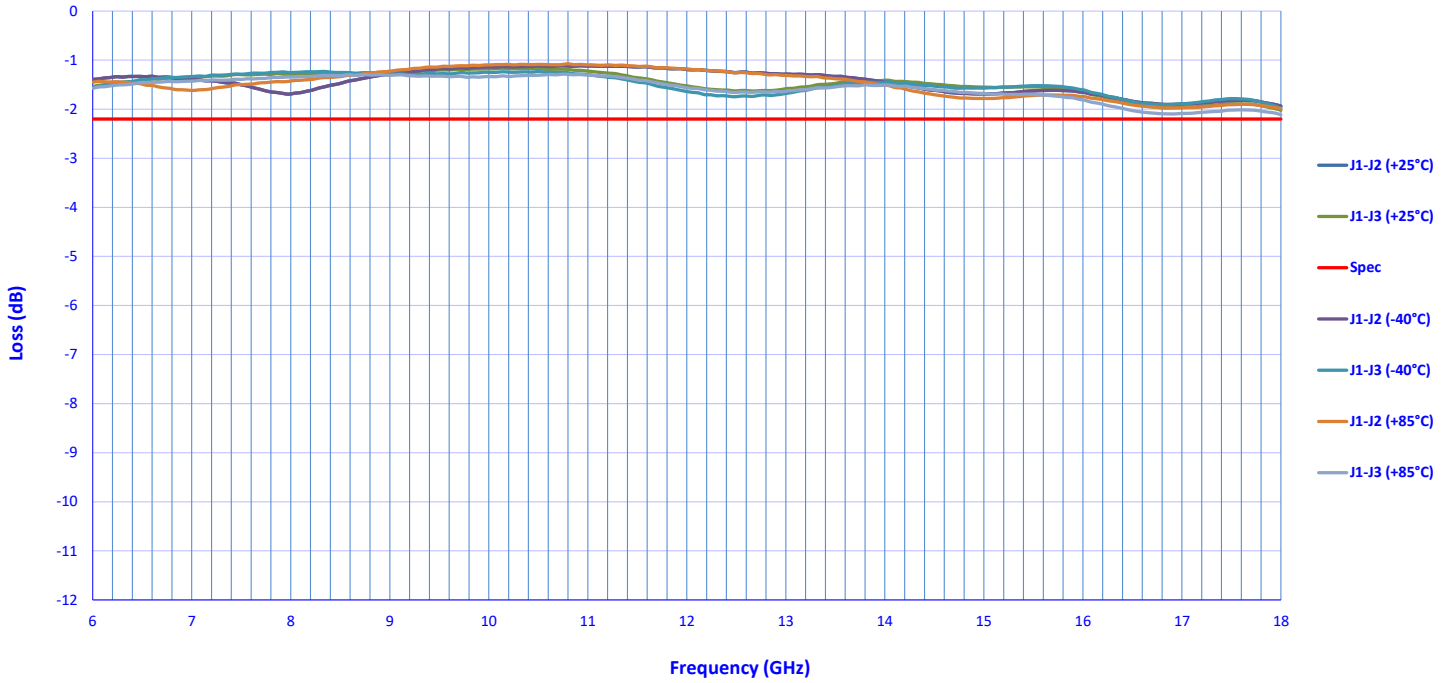
PIN	CONNECT TO
6	U1 GROUND
7	U1 GROUND
8	U1 GROUND
9	U1 GROUND

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	-40°C	+85°C	
1	Frequency Range:	6.0 to 18.0 GHz	6.0 to 18.0 GHz	6.0 to 18.0 GHz	6.0 to 18.0 GHz	
2	Power:	300W Peak (55 dBm)	Tested up to 126 Watts CW, Pass 300 Watts Peak by design	Tested up to 126 Watts CW, Pass 300 Watts Peak by design	Tested up to 126 Watts CW, Pass 300 Watts Peak by design	
3	Duty Cycle:	20%	20%	20%	20%	
4	Insertion Loss:	2.2 dB Max.	2.02 dB See Graph	1.98 dB See Graph	2.11 dB See Graph	
5	Isolation:	40dB Typ. 38dB Min.	39.2 dB See Graph	39.5 dB See Graph	39.01 dB See Graph	
6	Pulse Width:	200 ns. Max.	200 ns	200 ns	200 ns	
7	Switching Speed:	1.25 µs Max, (50% TTL to 90% RF and 50% TTL to 10% RF)	Rise Time-777.5 ns	Rise Time-777.5 ns	Rise Time-777.5 ns	
			Fall Time-185 ns	Fall Time-185 ns	Fall Time-185 ns	
			Speed ON - 1.06 µs	Speed ON - 1.06 µs	Speed ON - 1.06 µs	
			Speed OFF - 314 ns	Speed OFF - 314 ns	Speed OFF - 314 ns	
			See Plots	See Plots	See Plots	
8	VSWR in/out:	2.0:1 Max.	1.97:1 See Graph	1.96:1 See Graph	1.98:1 See Graph	
9	Load VSWR:	Better than 1.5:1	1.5:1	1.5:1	1.5:1	
10	Power Supply:	+5 VDC @ 300 mA -70 VDC @ 60 mA	+5 VDC @ 190 mA -70 VDC @ 20 mA	+5 VDC @ 175 mA -70 VDC @ 20 mA	+5 VDC @ 198 mA -70 VDC @ 20 mA	

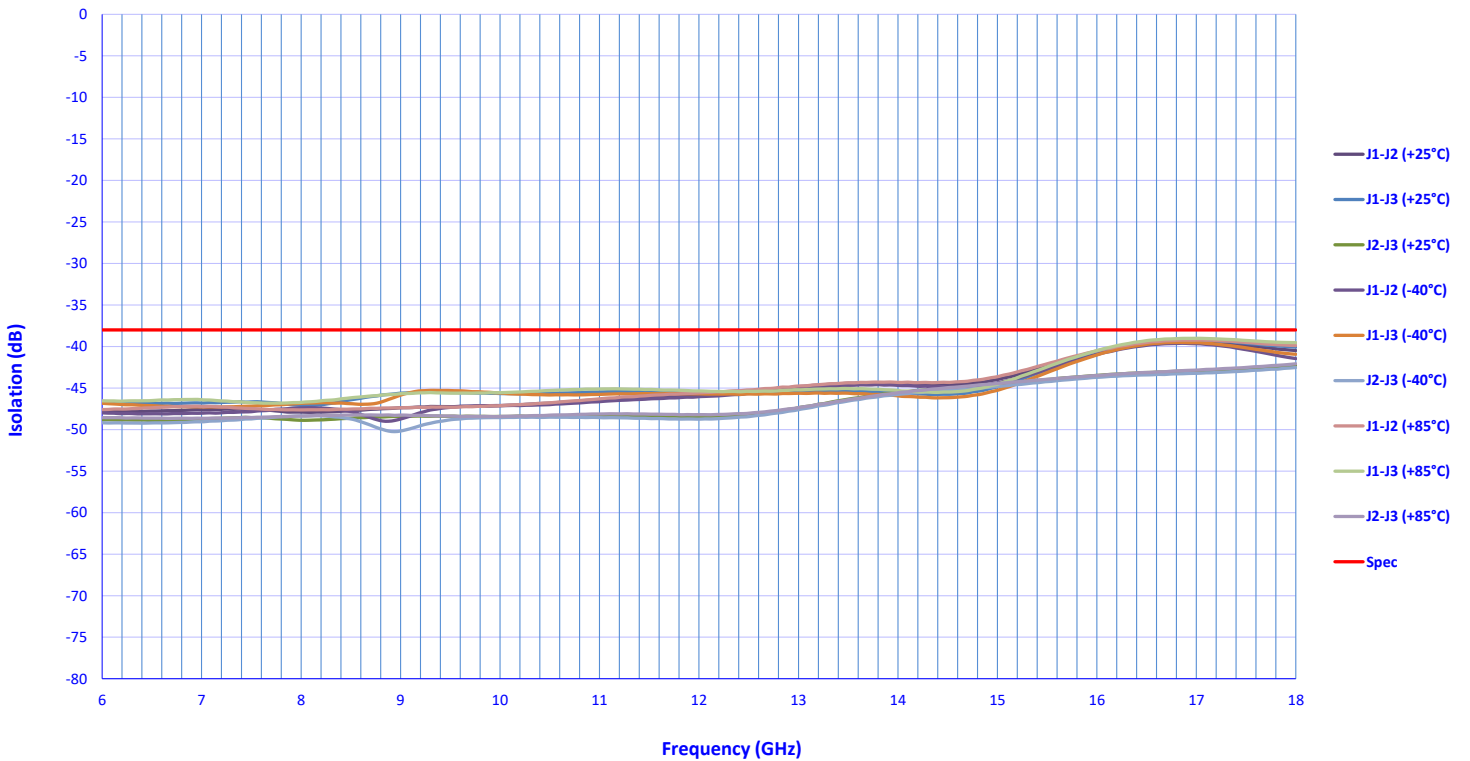


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Insertion Loss



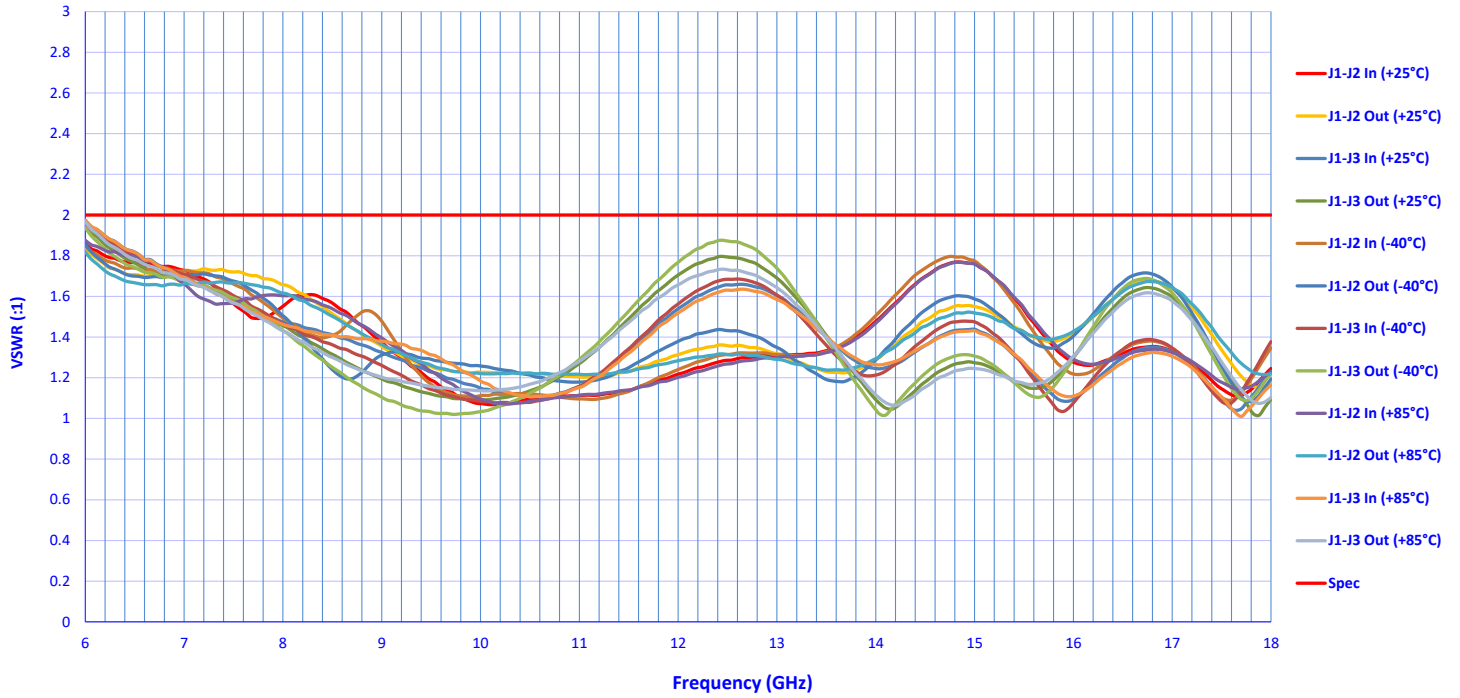
Isolation



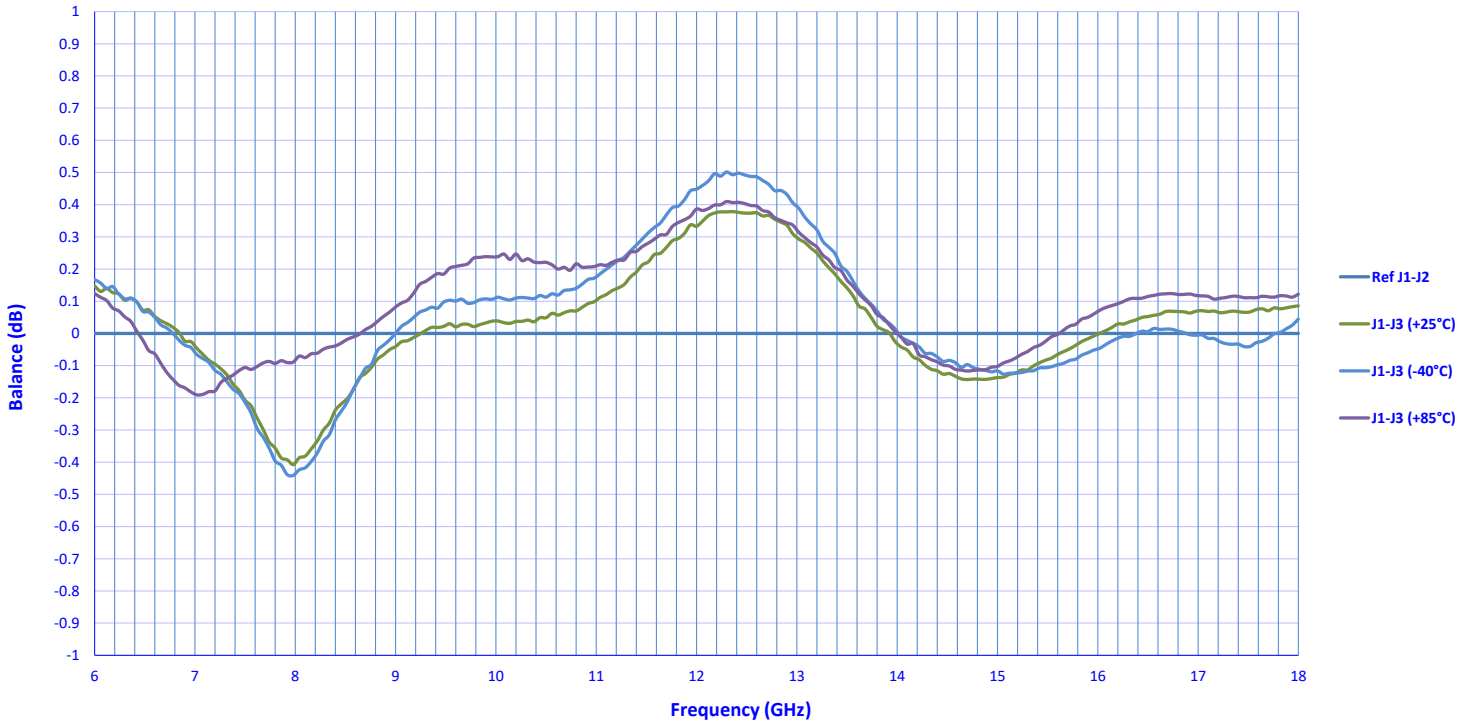


Typical Characteristics ON P2T-6G18G-40-R-570-SFF-300W

VSWR



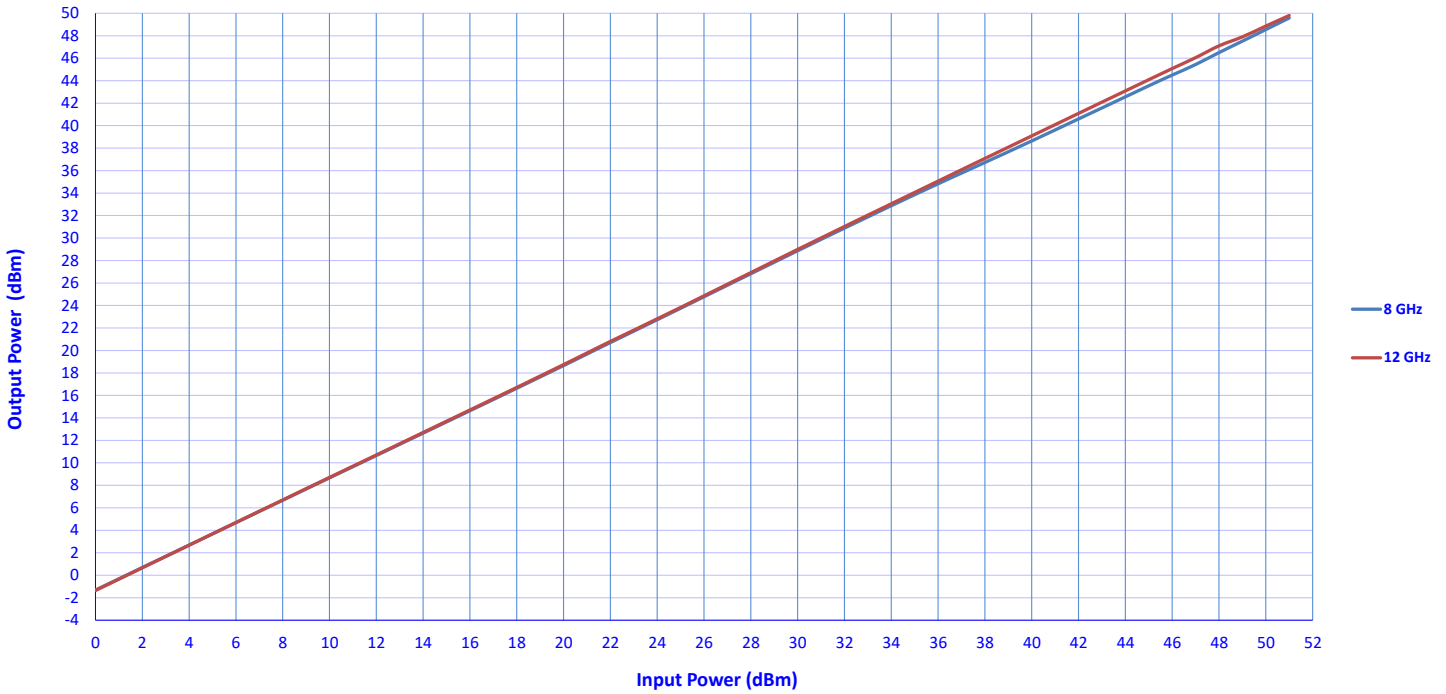
Amplitude Balance





Typical Characteristics ON P2T-6G18G-40-R-570-SFF-300W

High Power Test Graph (CW)

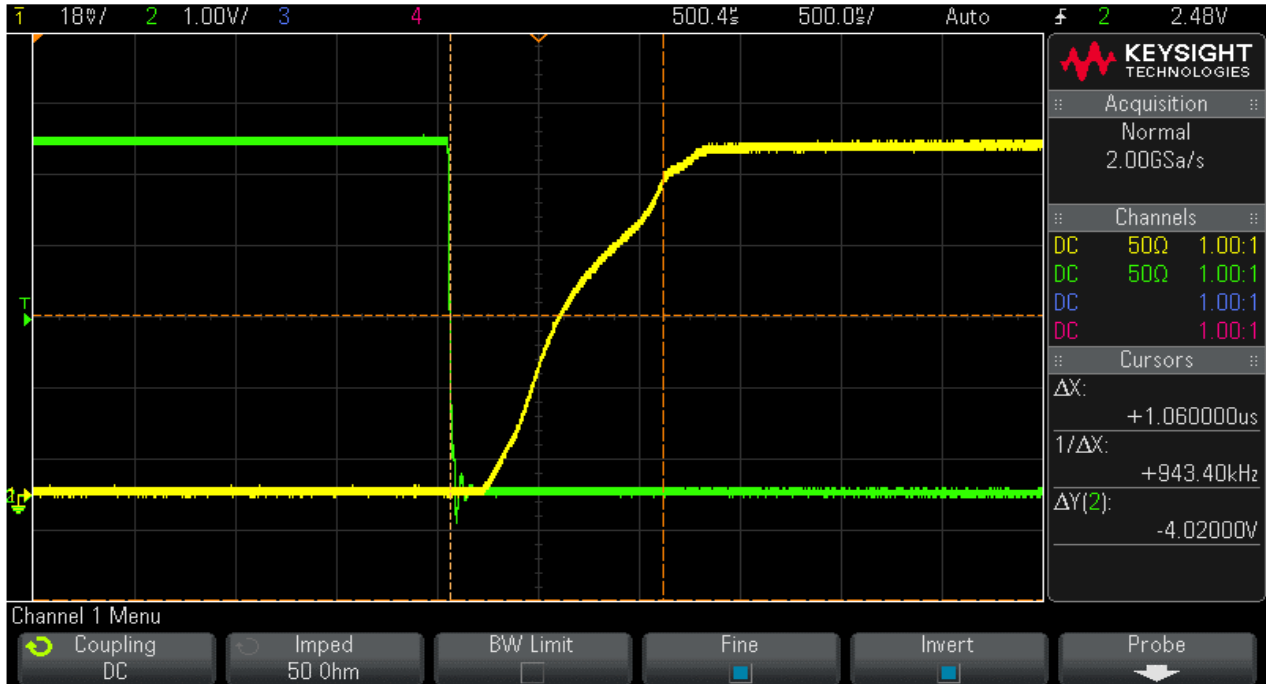


High Power Test Data (CW)								Power Input (Watts)
8 GHz				12 GHz				
Power In (dBm)	Power Out (dBm)	Loss	Compression (dBm)	Power In (dBm)	Power Out (dBm)	Loss	Compression (dBm)	
0	-1.318	1.318	0.000	0	-1.355	1.355	0.000	
1	-0.319	1.319	0.001	1	-0.349	1.349	0.006	
2	0.686	1.314	0.004	2	0.662	1.338	0.017	
3	1.683	1.317	0.001	3	1.668	1.332	0.023	
4	2.681	1.319	0.001	4	2.676	1.324	0.031	
5	3.682	1.318	0.000	5	3.684	1.316	0.039	
6	4.680	1.320	0.002	6	4.691	1.309	0.046	
7	5.679	1.321	0.003	7	5.696	1.304	0.051	
8	6.676	1.324	0.006	8	6.696	1.304	0.051	
9	7.676	1.324	0.006	9	7.704	1.296	0.059	
10	8.668	1.332	0.014	10	8.707	1.293	0.062	
11	9.662	1.338	0.020	11	9.702	1.298	0.057	
12	10.653	1.347	0.029	12	10.702	1.298	0.057	
13	11.654	1.346	0.028	13	11.701	1.299	0.056	
14	12.645	1.355	0.037	14	12.705	1.295	0.060	
15	13.645	1.355	0.037	15	13.705	1.295	0.060	0.03
16	14.639	1.361	0.043	16	14.704	1.296	0.059	0.04
17	15.637	1.363	0.045	17	15.707	1.293	0.062	0.05
18	16.638	1.362	0.044	18	16.713	1.287	0.068	0.06
19	17.645	1.355	0.037	19	17.727	1.273	0.082	0.08
20	18.656	1.344	0.026	20	18.744	1.256	0.099	0.10
21	19.679	1.321	0.003	21	19.776	1.224	0.131	0.13
22	20.704	1.296	0.022	22	20.806	1.194	0.161	0.16
25	23.750	1.250	0.068	25	23.830	1.170	0.185	0.32
30	28.870	1.130	0.188	30	28.990	1.010	0.345	1.00
35	33.860	1.140	0.178	35	34.060	0.940	0.415	3.16
40	38.640	1.360	0.042	40	39.090	0.910	0.445	10.0
45	43.550	1.450	0.132	45	44.090	0.910	0.445	31.6
46	44.500	1.500	0.182	46	45.080	0.920	0.435	39.8
47	45.440	1.560	0.242	47	46.050	0.950	0.405	50.1
48	46.500	1.500	0.182	48	47.100	0.900	0.455	63.1
49	47.520	1.480	0.162	49	47.900	1.100	0.255	79.4
50	48.550	1.450	0.132	50	48.860	1.140	0.215	100
51	49.580	1.420	0.102	51	49.800	1.200	0.155	126

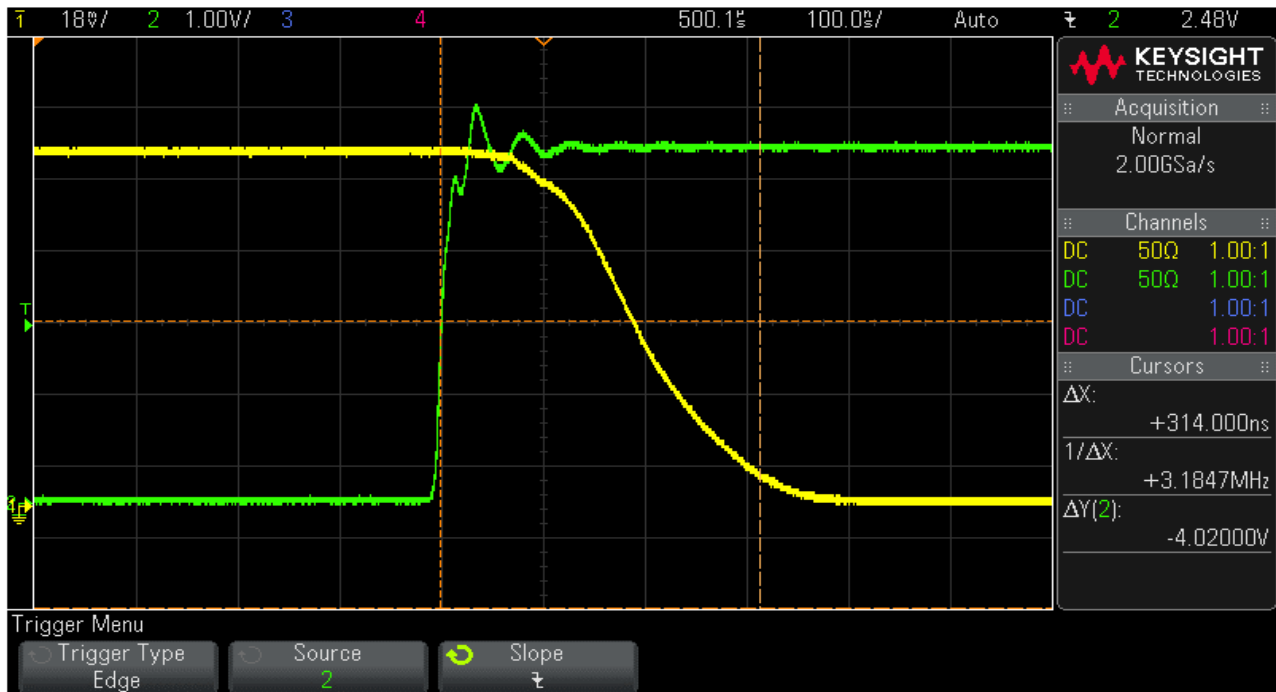


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Switching Speed ON
500 ns Per Div.
Measured value (1.06 μ s)



Switching Speed OFF
100 ns Per Div.
Measured value (314 ns)

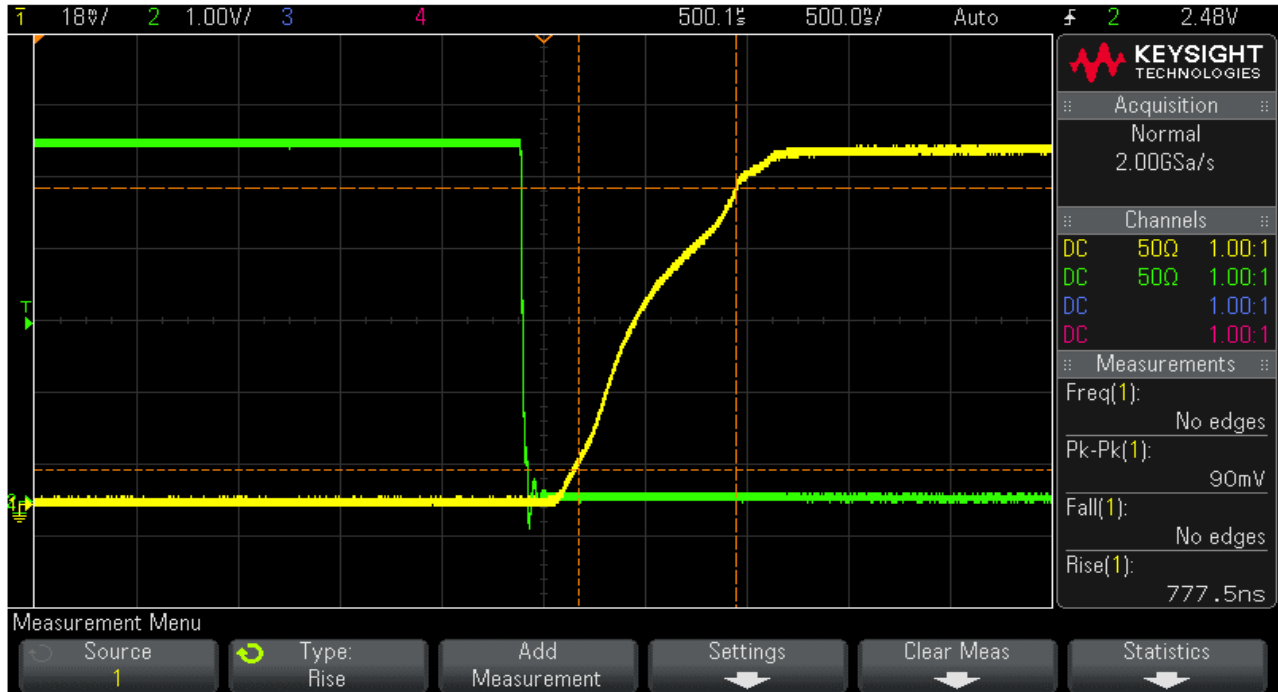


Green Trace = TTL Signal
Yellow Trace = RF Signal

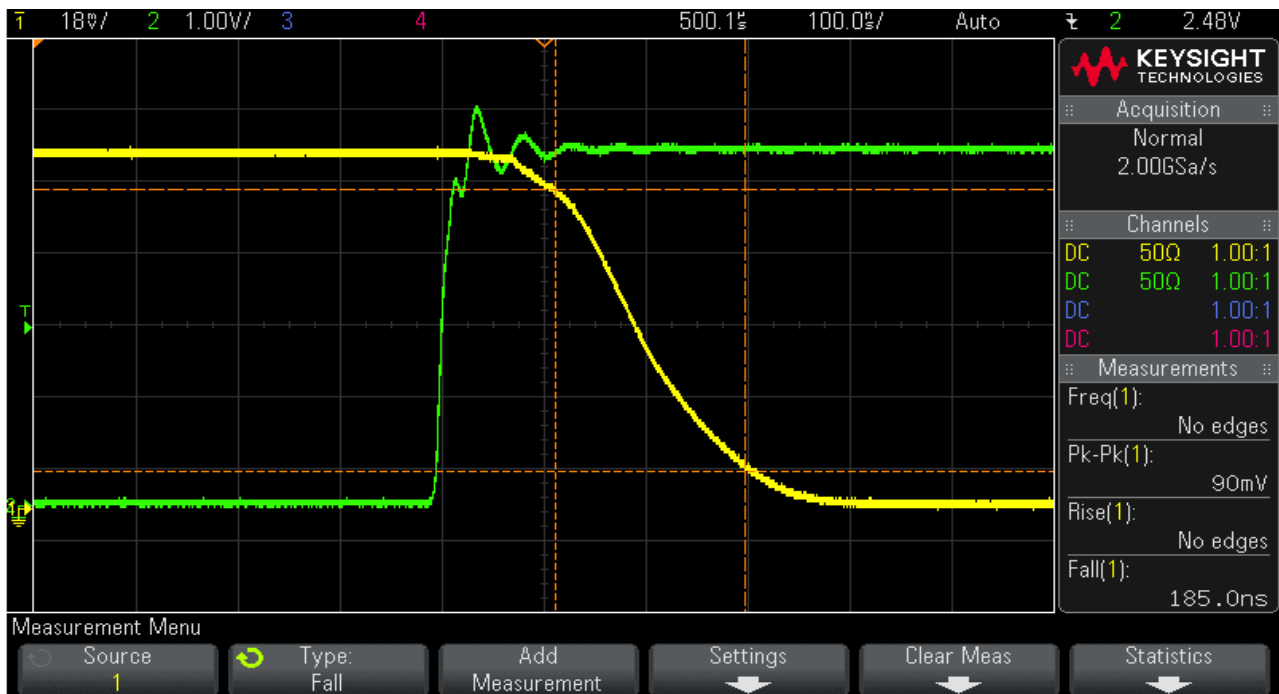


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Rise Time
500 ns Per Div.
Measured value (777.5 ns)



Fall Time
100 ns Per Div.
Measured value (185 ns)

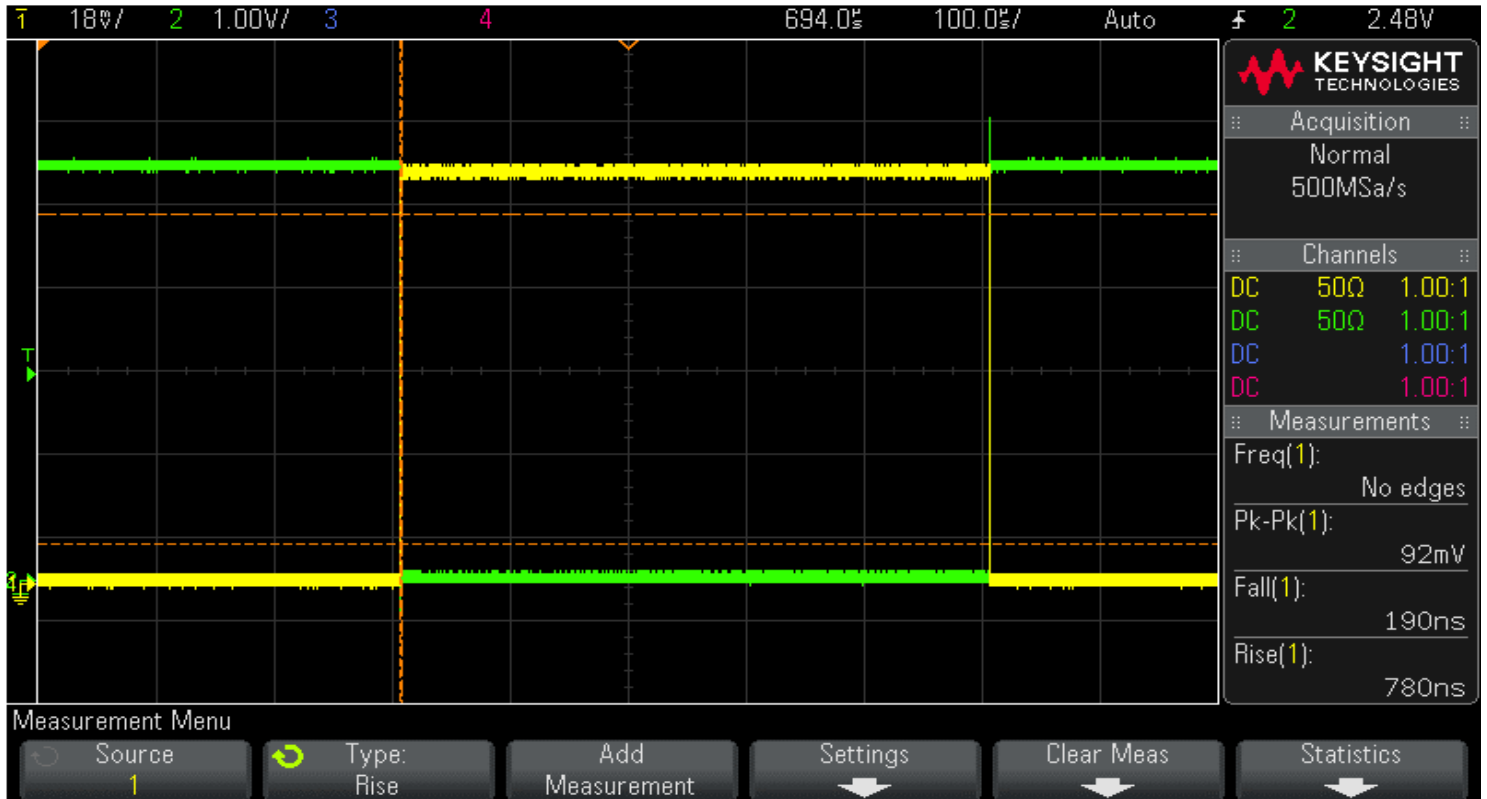


Green Trace = TTL Signal
Yellow Trace = RF Signal



Typical Characteristics ON P2T-6G18G-40-R-570-SFF-300W

Full Pulse
200 μ s Per Div.



Green Trace = TTL Signal
Yellow Trace = RF Signal



Typical Characteristics ON P2T-6G18G-40-R-570-SFF-300W

Output Video Transients
100 ns Per Div.



Output Video Transients
500 ns Per Div.



Green Trace = TTL Signal
Yellow Trace = Video signal