



**Typical Characteristics**  
**on**  
**P2T-500M18G-80-T-515-SFF-4W**

**PMI MODEL P2T-500M18G-80-T-515-SFF-4W IS AN ABSORPTIVE, SINGLE POLE, TWO THROW PIN DIODE SWITCH THAT OPERATES OVER THE 0.5 GHZ TO 18 GHZ FREQUENCY RANGE. THIS MODEL INCORPORATES A TTL COMPATIBLE DRIVER FOR EASY SYSTEM INTEGRATION.**



April 8, 2016

Designed By: PMI Engineering  
Tested By: B. Wakenight & C. Benjamins  
Reported By: J. Peacher



# Typical Characteristics on P2T-500M18G-80-T-515-SFF-4W

## Product Feature

**DESCRIPTION**

PMI MODEL P2T-500M18G-80-T-515-SFF-4W IS AN ABSORPTIVE, SINGLE POLE, TWO THROW PIN DIODE SWITCH THAT OPERATES OVER THE 0.5 GHZ TO 18 GHZ FREQUENCY RANGE. THIS MODEL INCORPORATES A TTL COMPATIBLE DRIVER FOR EASY SYSTEM INTEGRATION.

**SPECIFICATIONS**

- FREQUENCY RANGE: 0.5 TO 18 GHz
- ISOLATION: 70 dB MIN
- INSERTION LOSS: 3.5 dB TYP
- VSWR IN / OUT: 2.0:1 MAX
- OPERATING INPUT POWER: 4 WATTS CW MAX
- RF SWITCHING SPEED: 200 ns MAX
- DC VOLTAGE: +5 VDC @ 150mA  
-15 VDC @ 150mA
- CONTROL SIGNAL: TTL LOGIC  
SEE LOGIC TABLE
- CONNECTORS IN/OUT: SMA FEMALE CONNECTORS
- CONTROL CONNECTORS: SOLDER PINS
- FINISH: EPOXY PAINT BLUE
- SIZE: 1.0" X 1.0" X 0.4"

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	11/25/10	
	2	ISOLATION UPDATE	3/20/15	
A1		ECN # 15-0041	04/01/15	

**MECHANICAL OUTLINE**

LOGIC TABLE		
CTL1	CTL2	FUNCTION
0	0	*J2 & J3 ON
0	1	J1 - J2
1	0	J1 - J3
1	1	ALL OFF

\*NOT TO SPECIFIED VALUES

**ENVIRONMENTAL RATINGS**

- TEMPERATURE: -40 °C TO +85 °C (OPERATING)  
-55 °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 107

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

**PMI CONFIDENTIAL AND PROPRIETARY**

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 E-MAIL: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)  
 ISO 9001 CERTIFIED

ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
XXX ±0.020  
XXXX ±0.010

APPROVALS		DATE	TITLE	
DRAWN	<i>JCM</i>	11/25/10	PRODUCT FEATURE	
CHECKED			P2T-500M18G-80-T-515-SFF-4W	
ISSUED			SIZE: FSCM NO. 05XQ0	DWG NO. 27024522
			SCALE N:S	REV. A1
				SHEET 1 OF 1



## Typical Characteristics on P2T-500M18G-80-T-515-SFF-4W

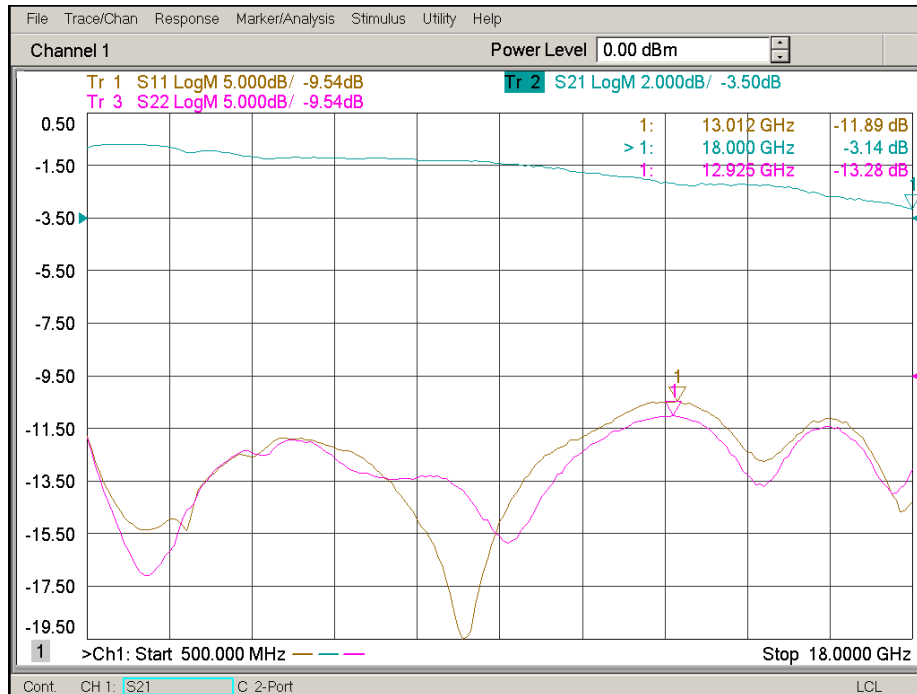
TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC	
1	Frequency Range:	0.5 to 18.0 GHz	0.5 to 18.0 GHz See Plot		
2	Isolation:	70 dB Min	75.21 dB See Plot		
3	Insertion Loss:	3.5 dB Typ	3.14 dB See Plot		
4	VSWR:	2.0 :1 Max	1.86:1 See Plot		
5	Operating Input Power:	4 Watts CW Max	Pass See Graph		
6	Switching Speed:	200 ns Max	60ns See Plots		
9	Power Supply:	+5 VDC @ 150 mA -15 VDC @ 150 mA	144mA 116mA		
8	Control:	Logic Table			Pass
		CTL1	CTL2	FUNCTION	
		0	0	*J2 & J3 ON	
		0	1	J1 – J2	
		1	0	J1 – J3	
1	1	ALL OFF			

\* NOT TO SPECIFIED VALUES

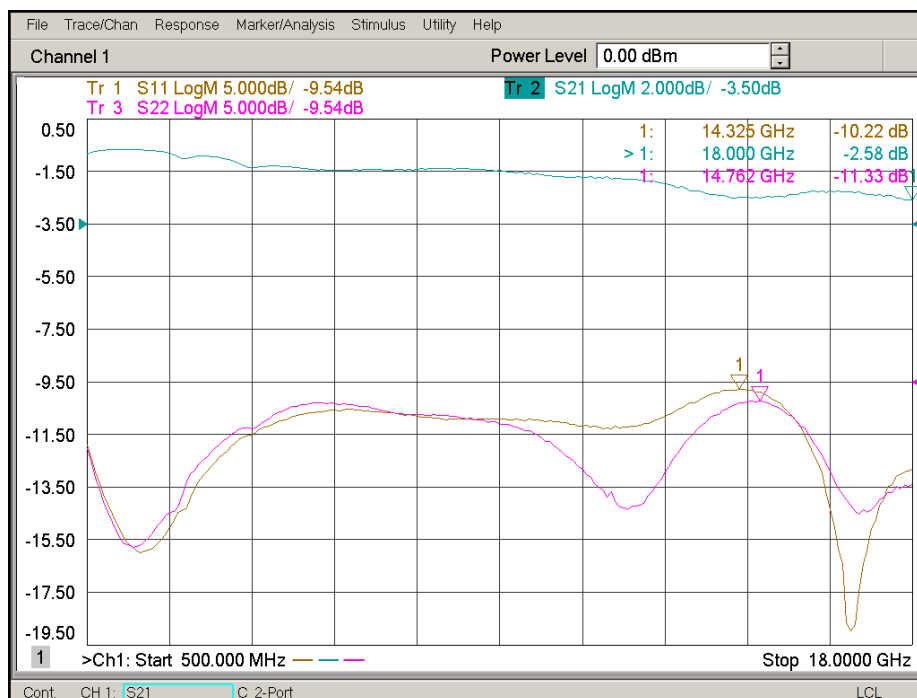


# Typical Characteristics on P2T-500M18G-80-T-515-SFF-4W

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



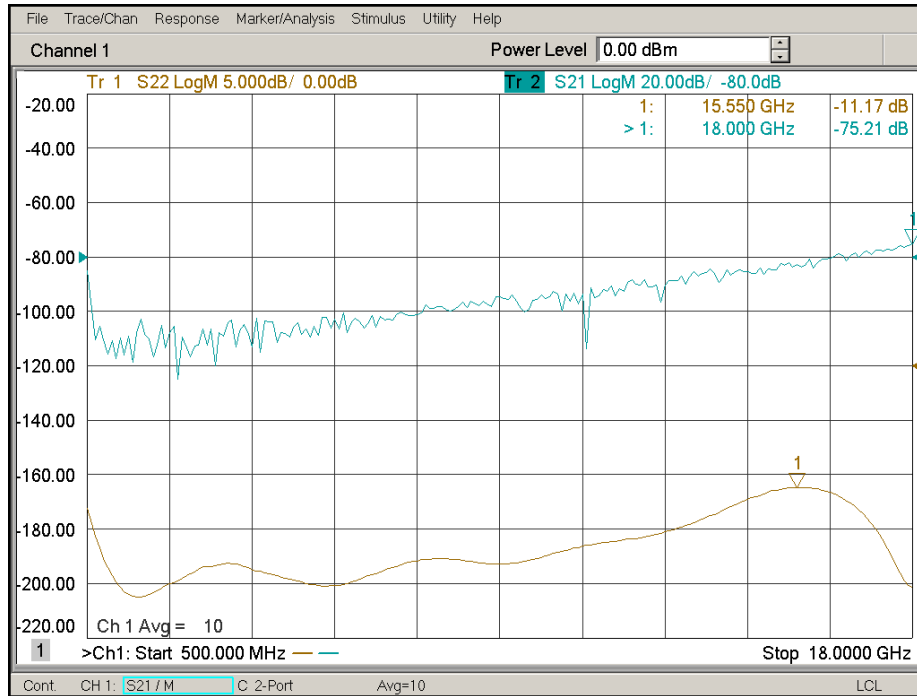
## (J1-J3) Insertion Loss and Return Loss



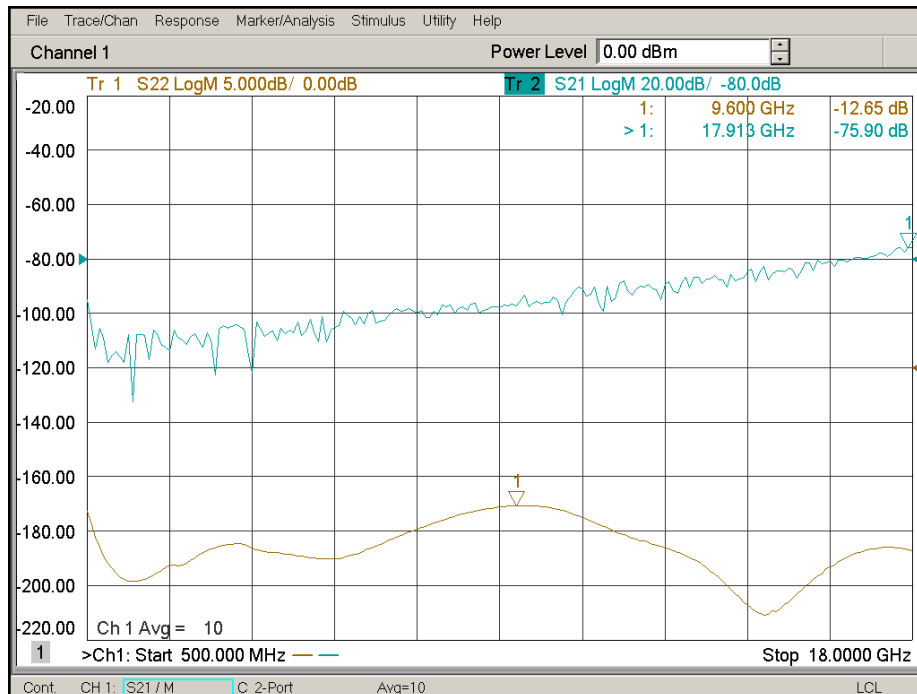


# Typical Characteristics on P2T-500M18G-80-T-515-SFF-4W

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



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

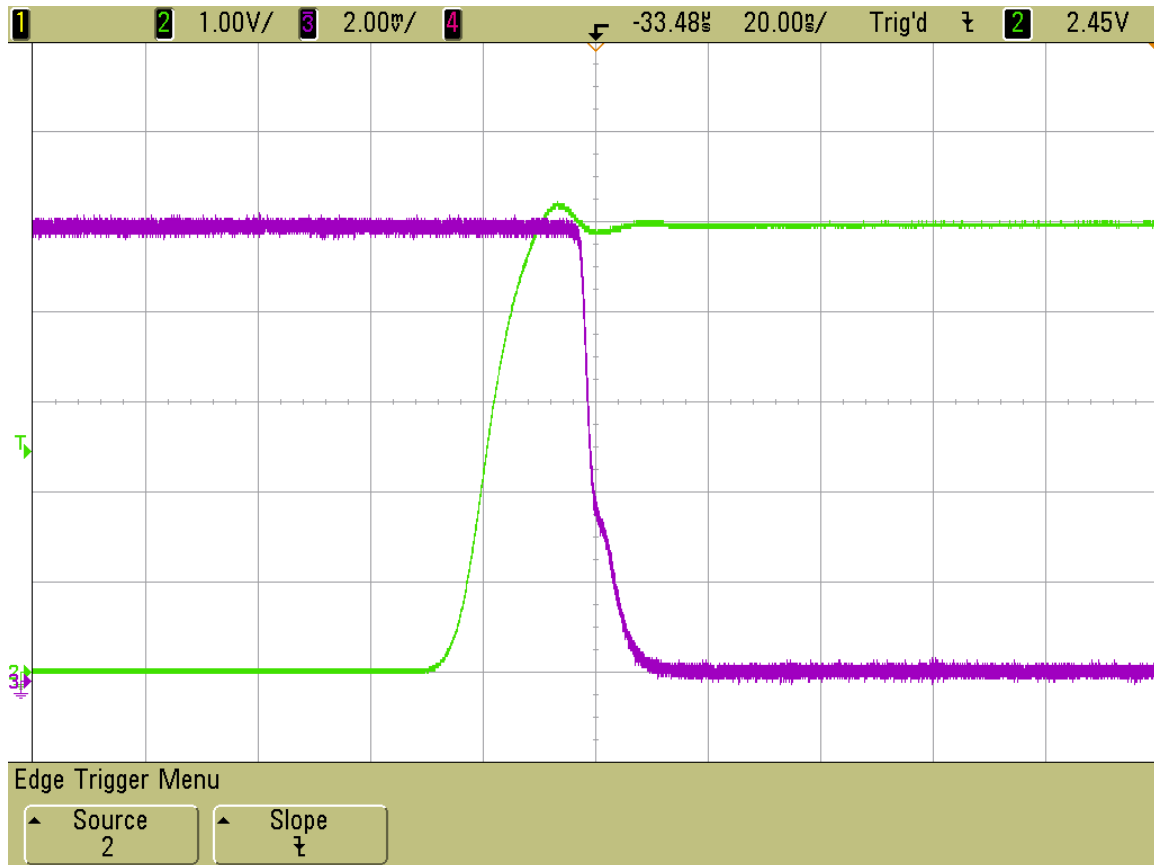




**Typical Characteristics**  
on  
**P2T-500M18G-80-T-515-SFF-4W**

Switching Speed

OFF Delay



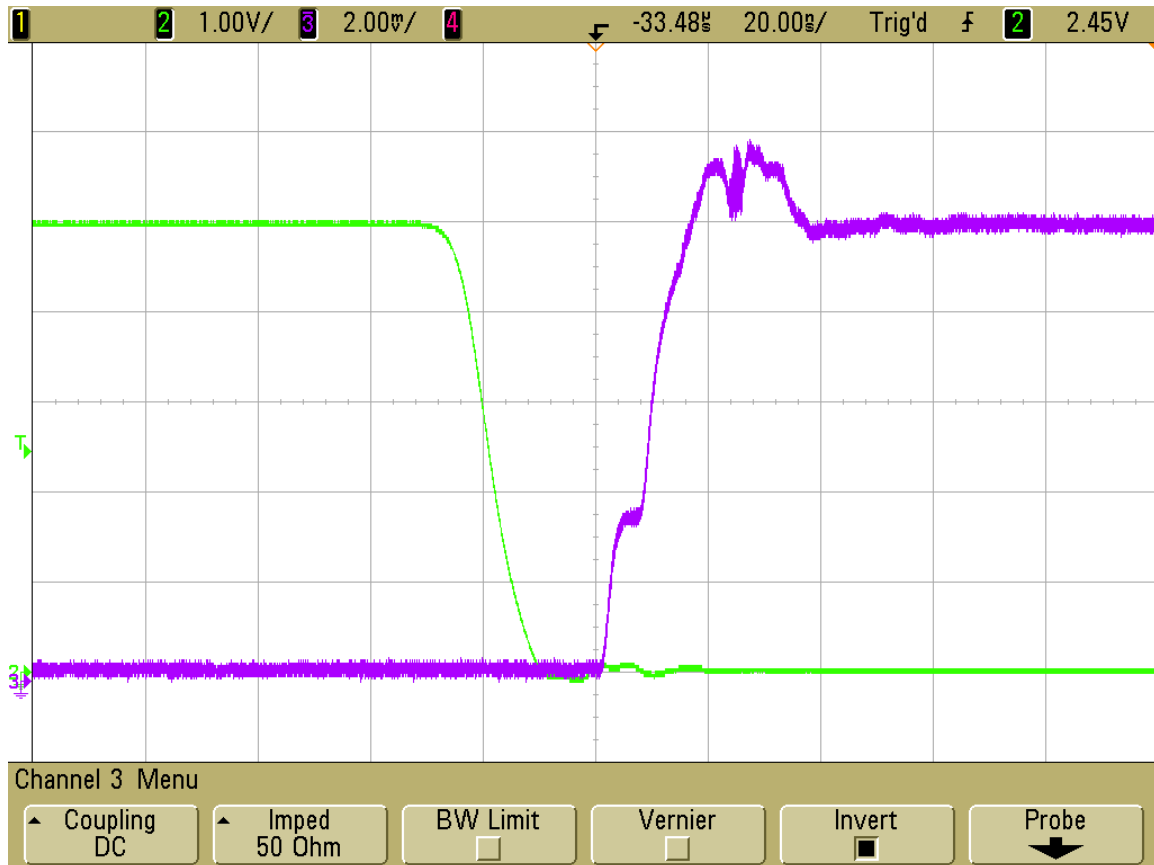
Green Trace: TTL Signal  
Magenta Trace: RF Signal



**Typical Characteristics**  
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**P2T-500M18G-80-T-515-SFF-4W**

Switching Speed

ON Delay



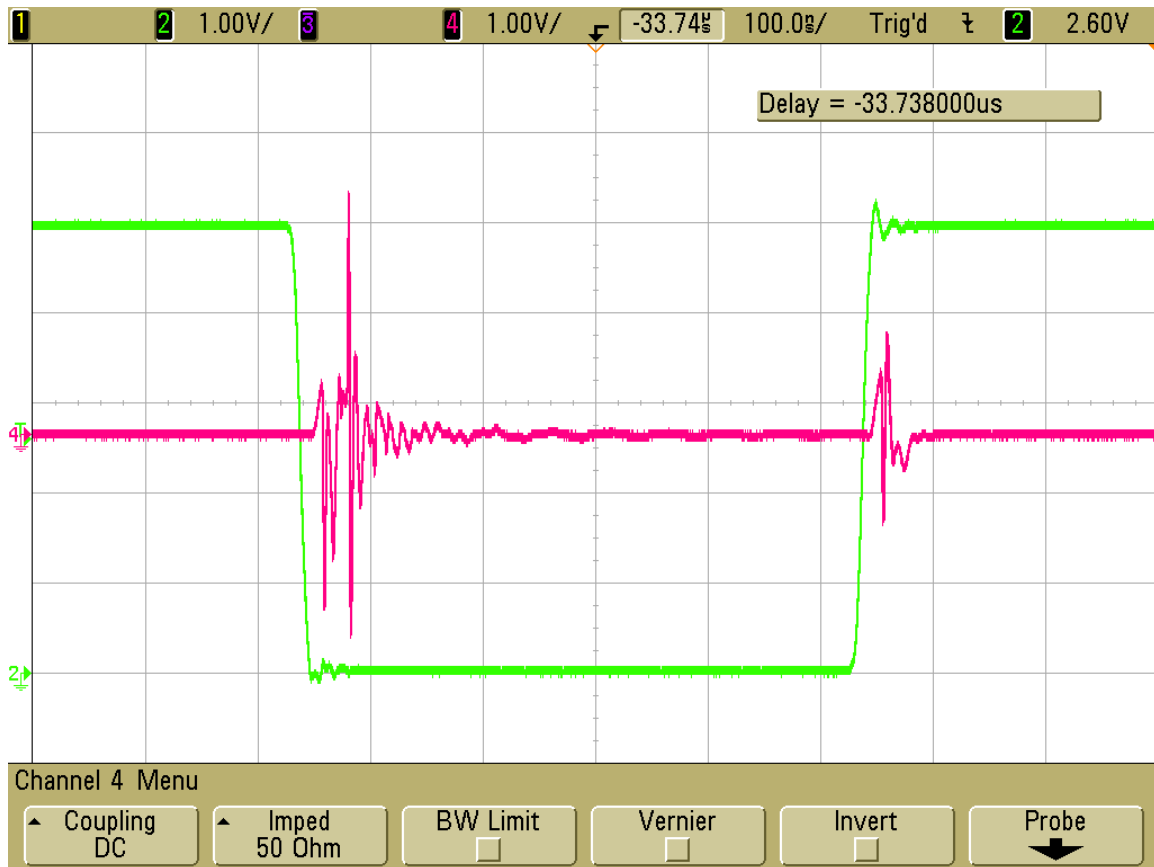
Green Trace: TTL Signal  
Magenta Trace: RF Signal



# Typical Characteristics on P2T-500M18G-80-T-515-SFF-4W

## Video Transients

100ns per Div.



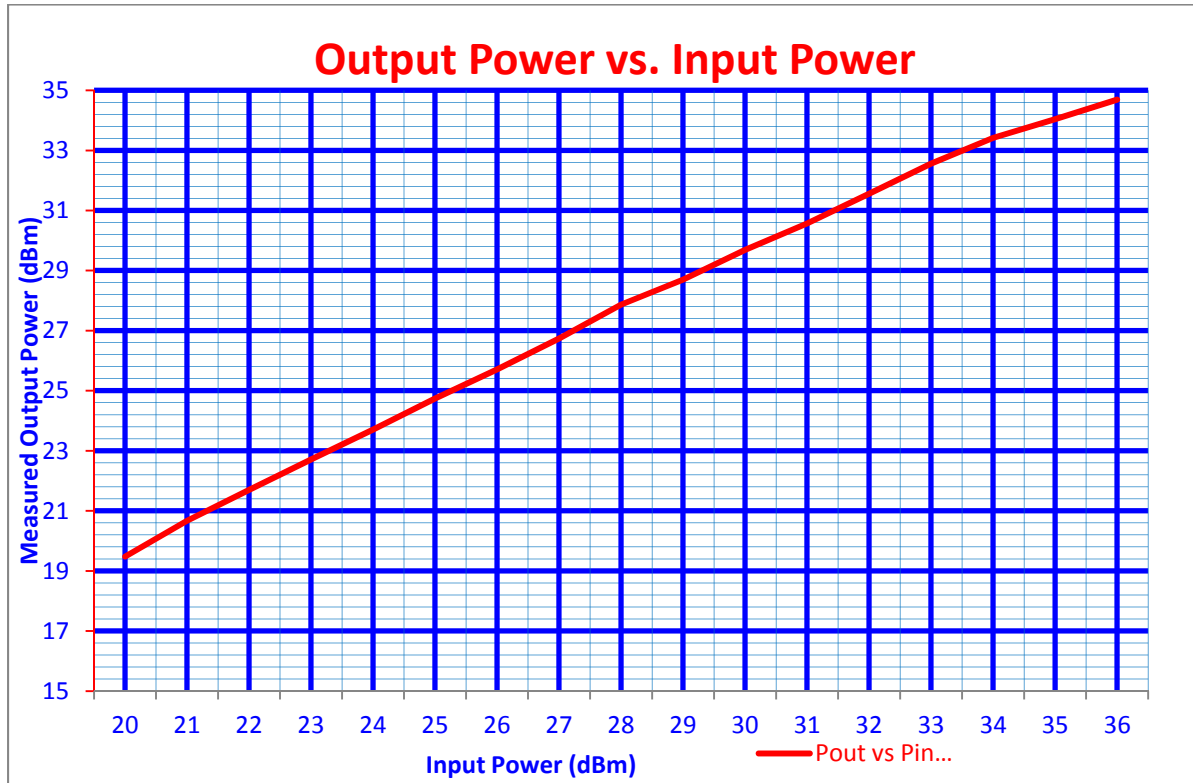
Green Trace: TTL Signal

Magenta Trace: Video Transients





## Typical Characteristics on P2T-500M18G-80-T-515-SFF-4W



Input Power to Switch (dBm)	Input Power to Switch (W)	Output Power of Switch (dBm)	Output Power of Switch (W)
20	0.100	19.48	0.089
21	0.126	20.67	0.117
22	0.158	21.7	0.148
23	0.200	22.71	0.187
24	0.251	23.71	0.235
25	0.316	24.74	0.298
26	0.398	25.71	0.372
27	0.501	26.74	0.472
28	0.631	27.87	0.612
29	0.794	28.7	0.741
30	1.000	29.69	0.931
31	1.259	30.57	1.140
32	1.585	31.56	1.432
33	1.995	32.56	1.803
34	2.512	33.42	2.198
35	3.162	34.04	2.535
36	3.981	34.69	2.944