



Typical Characteristics
on
P1T-500M18G-80-R-SFF-SW21841A

PMI MODEL P1T-500M18G-80-R-SFF-SW21841A IS A REFLECTIVE, HIGH SPEED, SINGLE POLE SINGLE THROW SWITCH OPERATING OVER THE FREQUENCY RANGE OF 500 MHz TO 18 GHz AND MEETING THE FOLLOWING SPECIFICATIONS.



March 25, 2017
Designed by: PMI Engineering
Reported by: H. Gonzales



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DESCRIPTION

PMI MODEL P1T-500M18G-80-R-SFF-SW21841A IS A REFLECTIVE, HIGH SPEED, SINGLE POLE SINGLE THROW SWITCH OPERATING OVER THE FREQUENCY RANGE OF 500 MHz TO 18 GHz AND MEETING THE FOLLOWING SPECIFICATIONS.

SPECIFICATIONS

- FREQUENCY RANGE: _____ 500 MHz TO 18 GHz
- ISOLATION: _____ 45dB MIN (0.5 to 1.0GHz)
70dB MIN (1.0 to 2.0GHz)
85dB MIN (2.0 to 12.4GHz)
80dB MIN (12.4 to 18.0GHz)
- INSERTION LOSS: _____ 1.0dB MAX (0.5 to 2.0GHz)
1.2dB MAX (2.0 to 4.0GHz)
1.5dB MAX (4.0 to 8.0GHz)
2.0dB MAX (8.0 to 12.4GHz)
2.5dB MAX (12.4 to 18.0GHz)
- VSWR IN / OUT: _____ 1.4:1 Max (0.5 to 4.0GHz) "On Position"
1.6:1 Max (4.0 to 8.0GHz) "On Position"
1.9:1 Max (8.0 to 18.0GHz) "On Position"
- INPUT POWER: _____ 2W Average, 10W Peak @ 1usec PW
- RISE / FALL TIME: _____ 2 ns MAX
(10% TO 90% RF & 90% TO 10% RF)
- DELAY ON / OFF: _____ 20 ns MAX
(50% TO 10% / 90% RF)
- DC VOLTAGE: _____ +15VDC, 100mA
-15VDC, 45mA
- CONTROL SIGNAL: _____ TTL COMPATIBLE
"0" = ISOLATION
"1" = INSERTION LOSS
- CONTROL CONNECTOR: _____ SMC MALE
- CONNECTORS IN/OUT: _____ SMA(F)
- SIZE: _____ (L) 1.97" X (W) 0.792" X (H) 0.53"
- FINISH: _____ PAINTED BLUE

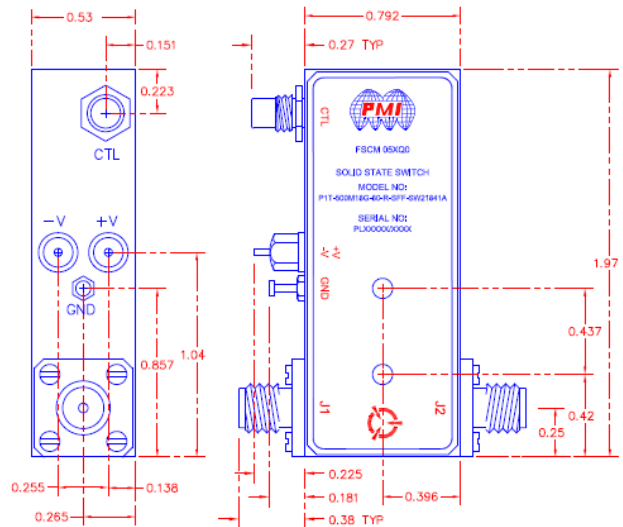
ENVIRONMENTAL RATINGS

- TEMPERATURE: _____ -55°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 107

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

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	01/26/16	
	A1	ECN # 16-0206	12/16/16	
	B1	ECN # 17-0053	09/28/17	
	B2	ECN # 23-0038	1/23/23	

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.

7311-F GROVE ROAD
FREDERICK, MARYLAND 21704 USA
TEL: 301-662-5019 FAX: 301-662-1731
WEBSITE: www.pmi-rf.com
E-MAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED



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

APPROVALS		DATE	TITLE		
DRAWN: <i>B. Thomas</i>		01/26/16	PRODUCT FEATURE		
CHECKED:			P1T-500M18G-80-R-SFF-SW21841A		
ISSUED:			SIE: A	FSCM NO: 05XQ0	DWG NO: 27029121
			SCALE: N:S		REV: B2
			SHEET 1 OF 1		



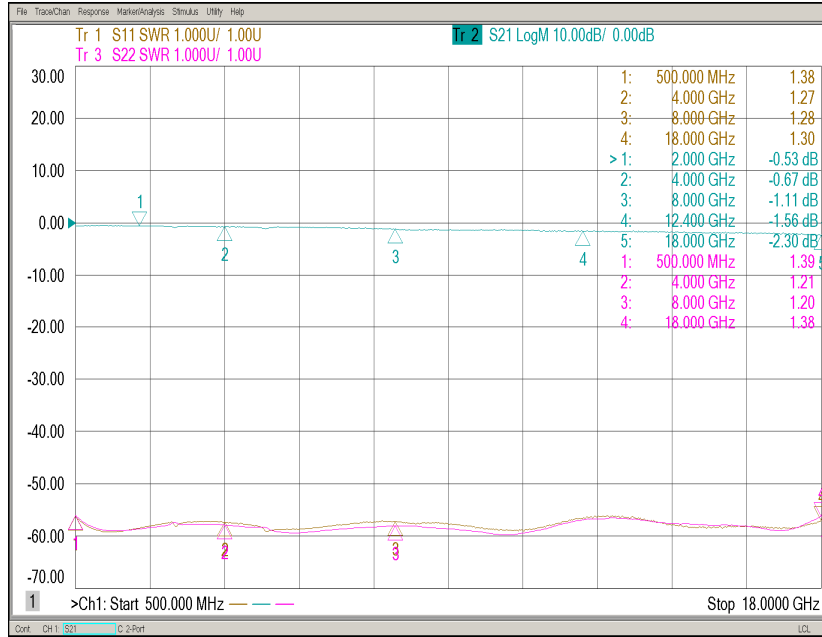
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TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range	0.5 TO 18.0 GHz	0.5 TO 18.0 GHz	
2	Isolation	45 dB Min (0.5 to 1.0 GHz) 70 dB Min (1.0 to 2.0 GHz) 85 dB Min (2.0 to 12.4 GHz) 80 dB Min (12.4 to 18.0 GHz)	1.0 GHz -106.13dB 2.0 GHz -107.97dB 12.4 GHz -94.19dB 18.0 GHz -98.33dB (See Plot)	
3	Insertion Loss	1.0 dB Max (0.5 to 2.0 GHz) 1.2 dB Max (2.0 to 4.0 GHz) 1.5 dB Max (4.0 to 8.0 GHz) 2.0 dB Max (8.0 to 12.4 GHz) 2.5 dB Max (12.4 to 18.0 GHz)	2.0 GHz -0.53dB 4.0 GHz -0.67dB 8.0 GHz -1.11dB 12.4 GHz -1.56dB 18.0 GHz -2.30dB (See Plot)	
4	VSWR IN/OUT "On Position"	1.4:1 Max (0.5 to 4.0 GHz) 1.6:1 Max (4.0 to 8.0 GHz) 1.9:1 Max (8.0 to 18.0 GHz)	Input VSWR 4.0 GHz 1.27:1 8.0 GHz 1.28:1 18.0 GHz 1.30:1 Output VSWR 4.0 GHz 1.21:1 8.0 GHz 1.20:1 18.0 GHz 1.38:1 (See Plot)	
5	Input Power	2W Average 10W Peak @ 1 µsec PW	Pass	
6	Rise / Fall Time (10% to 90% RF & 90% to 10% RF)	2 ns Max	2ns See Plot	
7	Delay On / Off (50% to 10% / 90% RF)	20 ns Max	19.6ns See Plot	
8	DC Supply	+15VDC @ 100 mA Typ -15VDC @ 45 mA Typ	42mA 29mA	
9	Control Signal	TTL COMPATIBLE 0 "ISOLATION" 1 "INSERTION LOSS"	Pass	

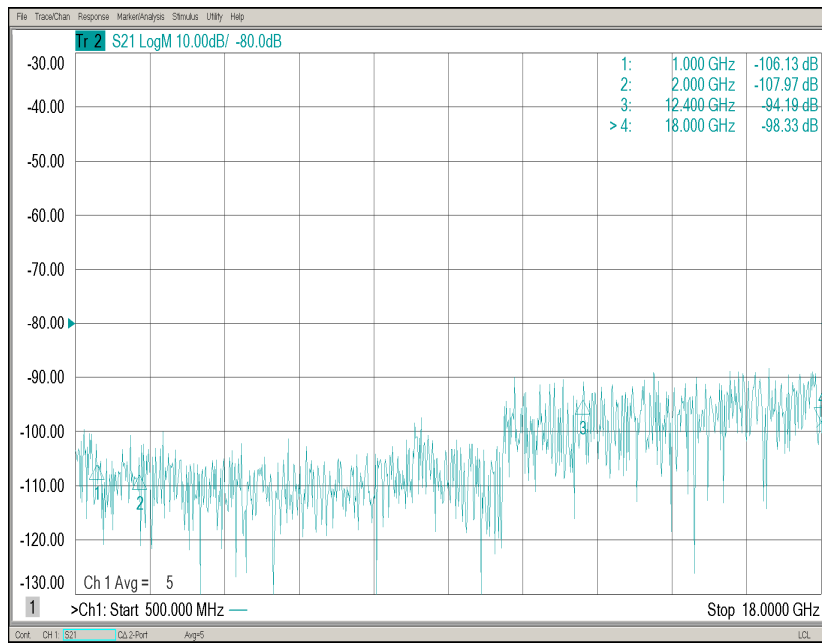


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(J1 – J2) Insertion Loss and Return Loss



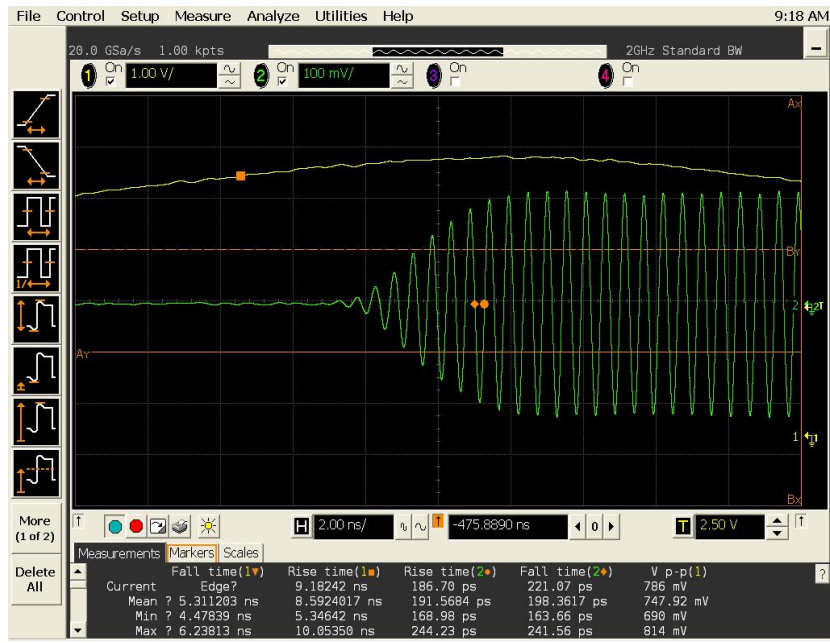
(J1 – J2) Isolation





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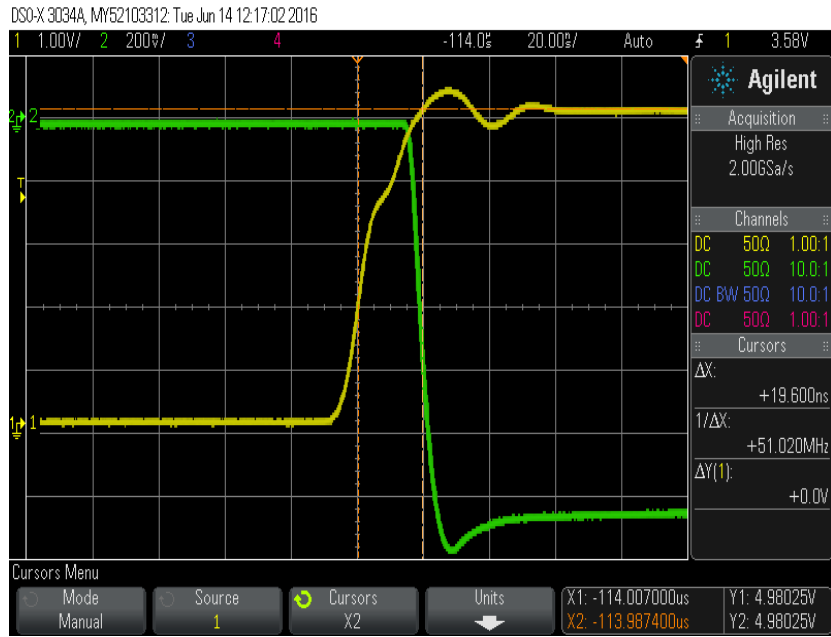
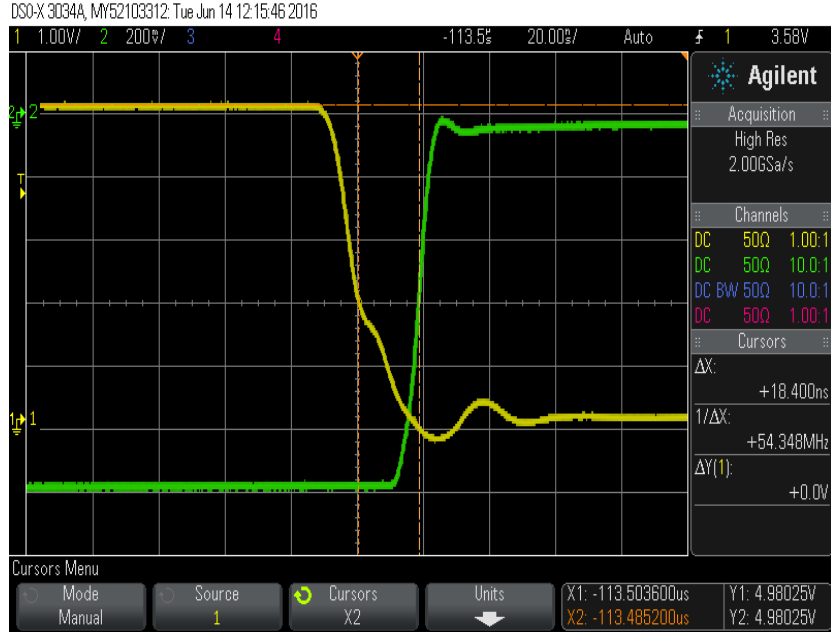
Rise / Fall Time 2ns per Div.





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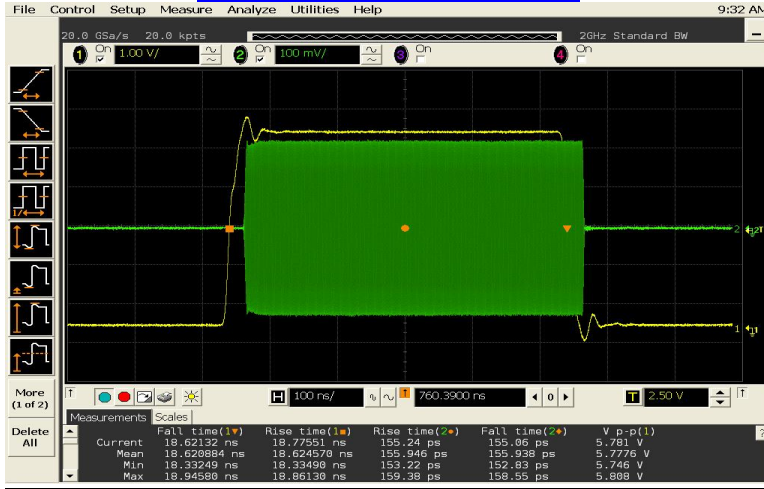
Switching Speed Delay On / Off 20ns per Div.



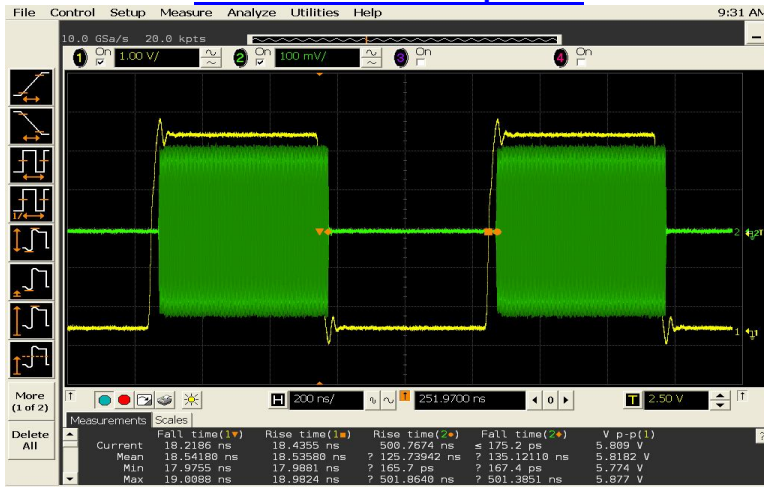


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FULL PULSE– 100ns per Div.



FULL PULSE– 200 ns per Div.



FULL PULSE– 500 ns per Div.

