Typical Characteristics on P1T-8G12G-70-T-SFF

PMI MODEL P1T-8G12G-70-T-SFF IS AN ABSORPTIVE, HIGH SPEED, SINGLE POLE SINGLE THROW SWITCH CAPABLE OF SWITCHING WITHIN 50 ns MAXIMUM. THE FREQUENCY RANGE IS 8.0 GHz TO 12.0 GHz. THIS SWITCH HAS > 70 dB ISOLATION.

December 17, 2015
Designed by: PMI Engineering
Reported by: Kevin Mansfield and Eric Kretz

7311-F Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731
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Typical Characteristics on P1T-8G12G-70-T-SFF

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ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	10/01/15	
	A1	ECN # 16-0024	2/8/16	

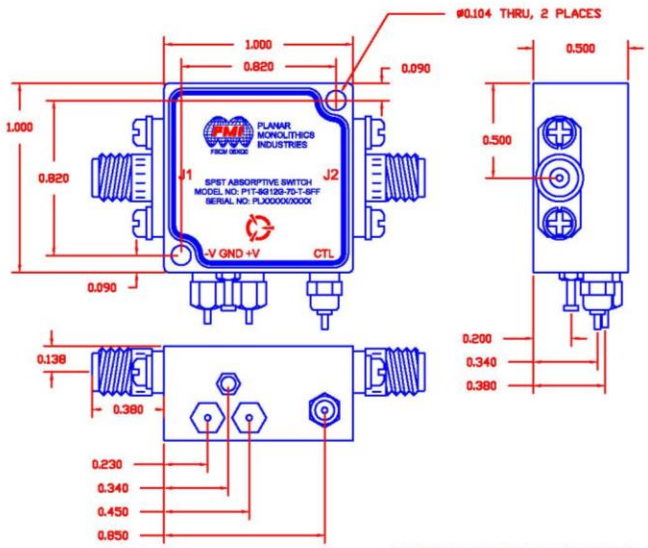
DESCRIPTION

PMI MODEL P1T-8G12G-70-T-SFF IS AN ABSORPTIVE, HIGH SPEED, SINGLE POLE SINGLE THROW SWITCH CAPABLE OF SWITCHING WITHIN 50 ns MAXIMUM. THE FREQUENCY RANGE IS 8.0 GHz TO 12.0 GHz. THIS SWITCH HAS > 70 dB ISOLATION.

SPECIFICATIONS

- FREQUENCY RANGE: 8.0 GHz TO 12.0 GHz
- IMPEDANCE: 50 Ω
- INPUT POWER: +30dBm MAX (SURVIVAL)
  +20dBm MAX (OPERATING)
- INPUT VSWR: 1.8:1 TYP
- INSERTION LOSS: 2.2dB MAX
- ISOLATION: 70dB MIN
- SWITCHING SPEED: 50ns MAX
- DC VOLTAGE: +5VDC, 20mA TYP
  −15VDC, 40mA TYP
- CONTROL: SOLDER PIN
  TTL COMPATIBLE
  "0" = INSERTION LOSS
  "1" = ISOLATION
- CONNECTORS IN/OUT: SMA (F)
- SIZE: (L) 1.0" X (W) 1.0" X (H) 0.5"
- FINISH: BLUE EPOXY POLIMIDE COATING IAW MIL-C-22750, TYPE I OVER EPOXY POLIMIDE PRIMER IAW MIL-P-23377, TYPE I, CLASS 1 OR 3.

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

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 107D COND. A

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

PLANAR MONOLITHICS INDUSTRIES, INC.
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ISO 9001 CERTIFIED

APPROVALS	DATE
DRAWN B. Thomas	10/01/15
CHECKED	
ISSUED	

TITLE: PRODUCT FEATURE P1T-8G12G-70-T-SFF

SIZE	FSCM NO.	DWG NO.	REV.
A	05XQ0	27026361	A1

SCALE N:S SHEET 1 OF 1

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Typical Characteristics on P1T-8G12G-70-T-SFF

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range	8.0 TO 12.0 GHz	**8.0 TO 12.0 GHz**	
2	Insertion Loss	2.2 dB Max	**1.9 dB (See Plot)**	
3	VSWR	1.8:1 Typ	**1.5:1 (See Plot)**	
4	Isolation	70 dB Min	**91 dB (See Plot)**	
5	Switching Speed	50 ns Max	**23 ns** **See Typical Characteristics**	
6	Input Power	+30 dBm Max (Survival) +20 dBm Max (Operating)	**Pass**	
7	DC Supply	+5V DC @ 20 mA Typ -15V DC @ 40 mA Typ	**22 mA** **58 mA**	
8	Control Signal	TTL "0" ➔ (Insertion Loss) TTL "1" ➔ (Isolation)	**Pass**	

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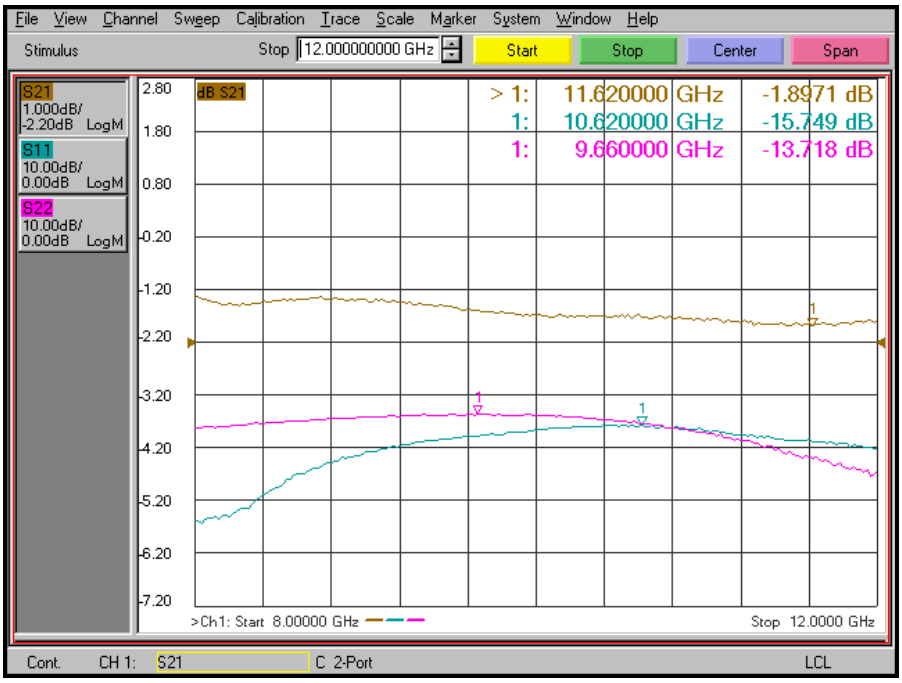
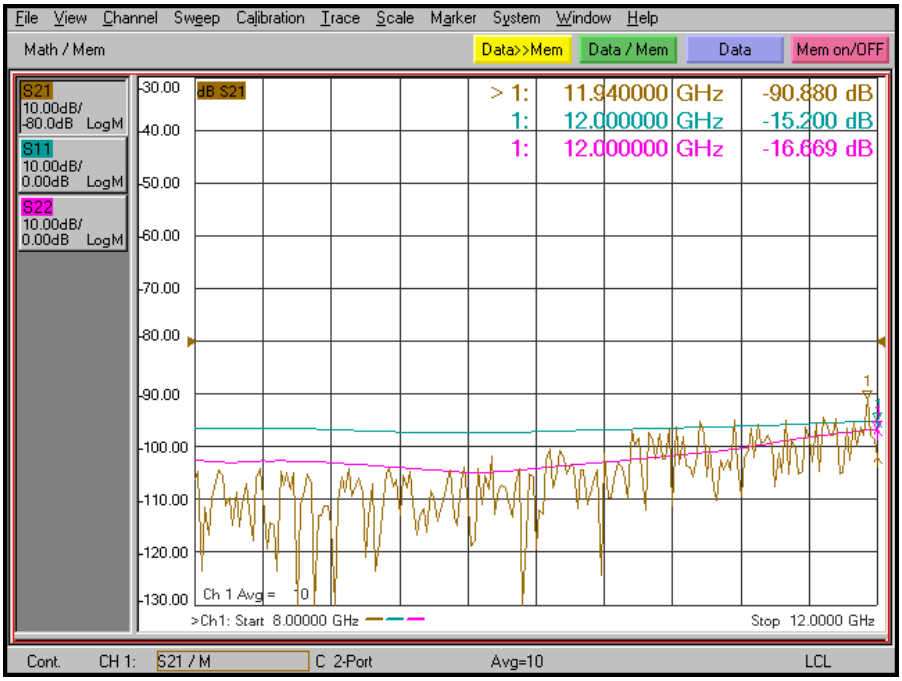
Insertion Loss and Return Loss



Isolation and Return Loss



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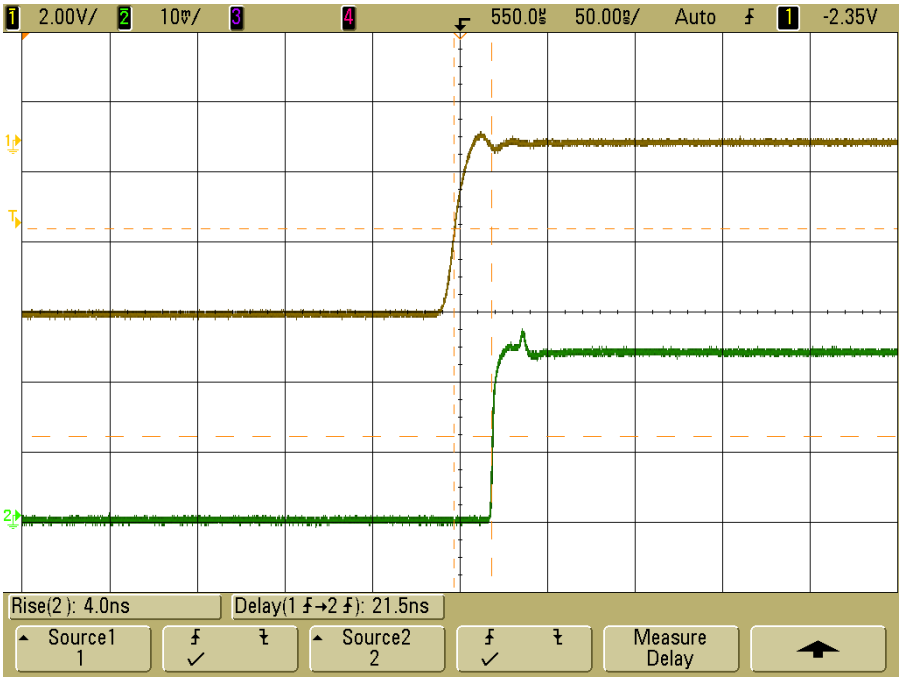
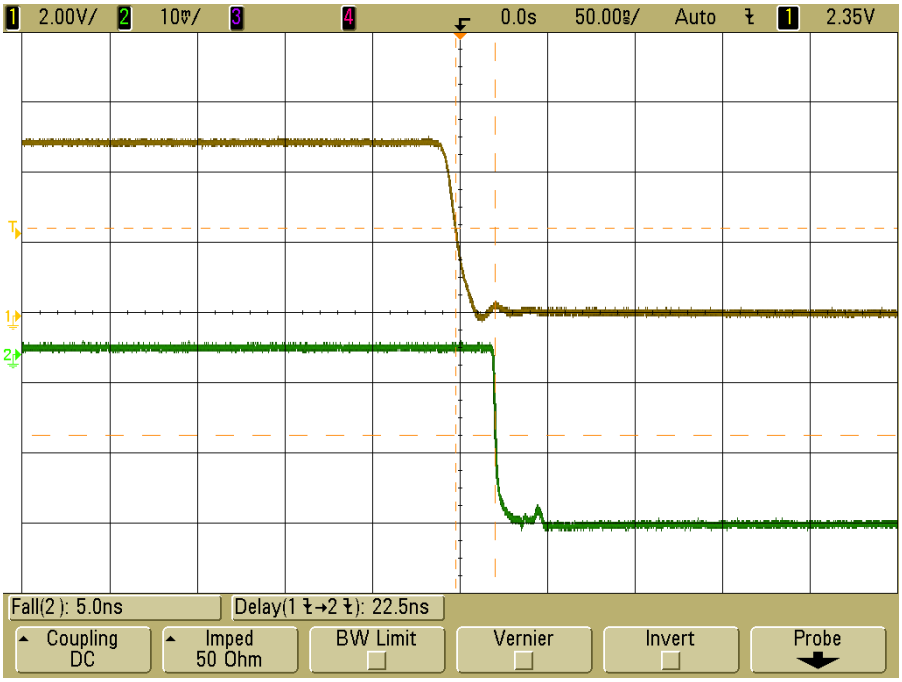
Typical Characteristics on P1T-8G12G-70-T-SFF

Switching Speed (Off)



Yellow Trace = TTL Control Green Trace = RF Response From Crystal Detector

Switching Speed (On)



Yellow Trace = TTL Control Green Trace = RF Response From Crystal Detector

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