Typical Characteristics For DTA-0R5G18G-60-CD-1

PMI MODEL NUMBER DTA-0R5G18G-60-CD-1 IS A NON-REFLECTIVE 10 BIT PROGRAMMABLE 60 DB PIN DIODE ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.06 DB OVER THE FREQUENCY RANGE OF 0.5 TO 18.0 GHZ. THIS MODEL IS OFFERED IN A SLIM LINE HOUSING MEASURING ONLY 0.5" HIGH.

November 15, 2017
Designed by: PMI Engineering
Tested and Reported by: Kevin Mansfield

7311-F Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731
email: sales@pmi-rf.com

Typical Characteristics For DTA-0R5G18G-60-CD-1

DESCRIPTION:

PMI MODEL NUMBER DTA-0R5G18G-60-CD-1 IS A NON-REFLECTIVE 10 BIT PROGRAMMABLE 60 dB PIN DIODE ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.06 dB OVER THE FREQUENCY RANGE OF 0.5 TO 18.0 GHz. THIS MODEL IS OFFERED IN A SLIM LINE HOUSING MEASURING ONLY 0.5" HEIGHT.

SPECIFICATIONS:

- FREQUENCY: — 0.5 GHz TO 18.0 GHz
- MEAN ATTENUATION RANGE: — 60 dB
- INSERTION LOSS: — 4.8 dB MAX
- VSWR: — 2.0 :1 MAX
- FLATNESS UP TO:
  - 20 dB — ±1.0 dB TYP
  - 40 dB — ±1.25 dB TYP
  - 60 dB — ±3.0 dB TYP
- ACCURACY OF ATTENUATION:
  - 0 dB TO 20 dB — ±1.0 dB TYP
  - 20 dB TO 40 dB — ±1.5 dB TYP
  - 40 dB TO 60 dB — ±2.0 dB TYP
- MINIMUM ATTENUATION STEP: — 0.06 dB
- OPERATING POWER: — 15dBm TYP
- SURVIVAL POWER: — 1W Average from -65°C to +25°C
- SWITCHING TIME:
  - ON TIME — 1.0 us MAX
  - OFF TIME — 0.5 us MAX
- DC POWER SUPPLY: — +15V @ 150 mA MAX
- CONNECTORS: — 2 SMA & 15 PIN Micro-D-Female Shipped with Mating Micro-D Male
- WEIGHT: — 3.0 oz (85 gm) Approximate
- FINISH: — PAINTED BLUE
- LOGIC INPUT:
  - LOGIC "0" (BIT OFF) — -0.3 to +0.8V
  - LOGIC "1" (BIT ON) — +2.0 to +5.0V

ENVIRONMENTAL RATINGS:

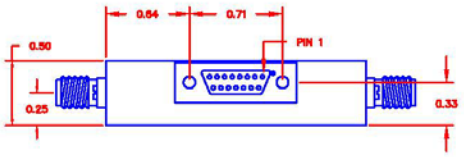
- TEMPERATURE: — -40°C TO +85°C (OPERATING) -65°C TO +125°C (STORAGE)
- HUMIDITY: — MIL-STD-202F, METHOD 103B COND. B
- SHOCK: — MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: — MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: — MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: — MIL-STD-202F, METHOD 107

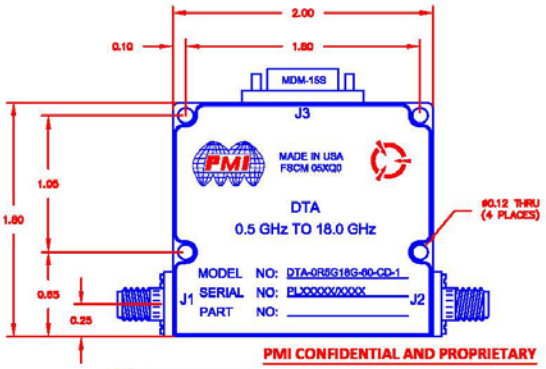
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

PIN NO:	J3 PIN FUNCTIONS
1	2dB
2	1dB
3	0.5dB
4	0.25dB
5	GND
6	0.13 dB
7	0.06 dB (LSB)
8	GND
9	Not Used
10	Not Used
11	+12VDC
12	32dB (MSB)
13	16dB
14	8dB
15	4dB

REVISIONS

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	10/15/12	
	A2	ECN # 13-0080	07/09/13	
	A3	ECN # 17-0071	04/13/17	
	A4	ECN # 17-0252	11/16/17	





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

APPROVALS	DATE
DRAWN	10/15/12
CHECKED	
ISSUED	

TITLE: PRODUCT FEATURE
DTA-0R5G18G-60-CD-1

SIZE	FSCM NO.	DWG NO.	REV.
A	05XQ0	27017781	A4

SCALE N:S — SHEET 1 OF 1

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

Typical Characteristics For DTA-0R5G18G-60-CD-1

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	PASS/FAIL	QA QC
1	Frequency Range:	0.5 GHz – 18 GHz	0.5 GHz – 18 GHz	
2	Insertion Loss:	4.8 dB Max.	4.4 dB See Plot	
3	VSWR:	2.0:1 Max.	1.6:1 See Plot	
4	Flatness to 20 dB:	± 1.0 dB Typ.	0.37 dB See Plot	
6	Flatness to 40 dB:	± 1.25 dB Typ.	0.51 dB See Plot	
7	Flatness to 60 dB:	± 3.0 dB Typ.	1.97 dB See Plot	
8	Accuracy of Attenuation 0 to 20 dB:	± 1.0 dB Typ.	0.07 dB See Plot	
9	Accuracy of Attenuation 20 to 40 dB:	± 1.5 dB Typ.	0.06 dB See Plot	
10	Accuracy of Attenuation 40 to 60 dB:	± 2.0 dB Typ.	0.16 dB See Plot	
11	Switching Speed:	1.0 us Max.	< 1.0 us See Typical Characteristics	
12	DC Supply:	+15VDC @ 155 mA	110 mA	

Programed Attenuation	Attenuation	Accuracy of Attenuation	Flatness
dB	dB	dB	±dB
0.0625	0.09	-0.03	0.02
0.125	0.15	-0.03	0.04
0.25	0.29	-0.04	0.06
0.50	0.52	-0.02	0.08
1.00	1.03	-0.03	0.10
2.00	2.03	-0.03	0.13
4.00	4.01	-0.01	0.14
8.00	8.01	-0.01	0.16
16.00	15.99	0.03	0.27
32.00	31.97	0.03	0.41
62.00	61.82	0.18	1.99
63.94	63.66	0.28	2.33

Programed Attenuation	Attenuation	Accuracy of Attenuation	Flatness
dB	dB	dB	±dB
5.00	4.97	0.03	0.14
10.00	10.01	-0.01	0.18
15.00	14.93	0.07	0.25
20.00	19.97	0.03	0.31
25.00	24.93	0.07	0.37
30.00	29.96	0.04	0.37
35.00	34.94	0.06	0.47
40.00	39.97	0.03	0.51
45.00	44.95	0.05	0.60
50.00	49.93	0.07	0.72
55.00	54.92	0.08	1.23
60.00	60.16	-0.16	1.97

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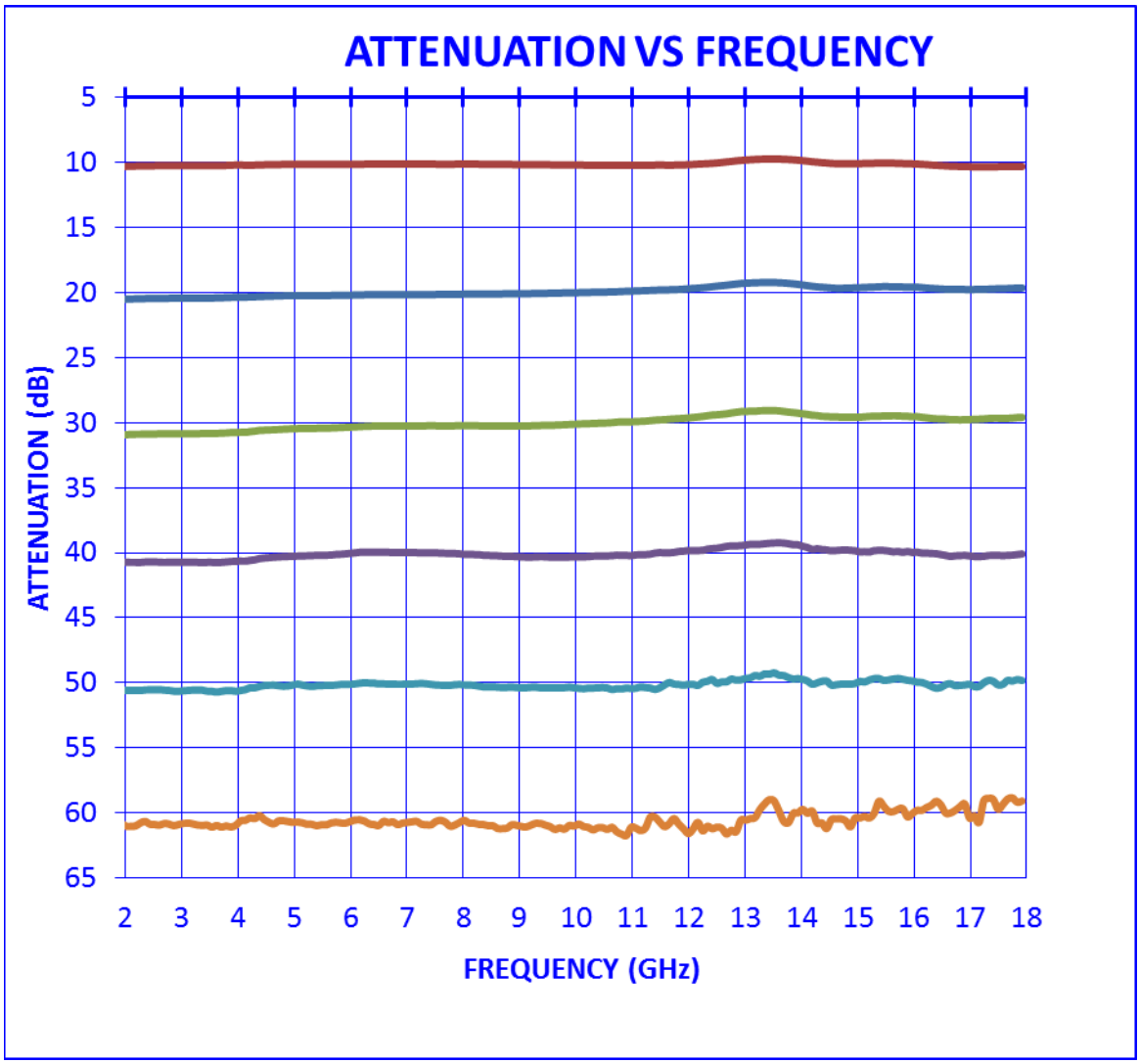

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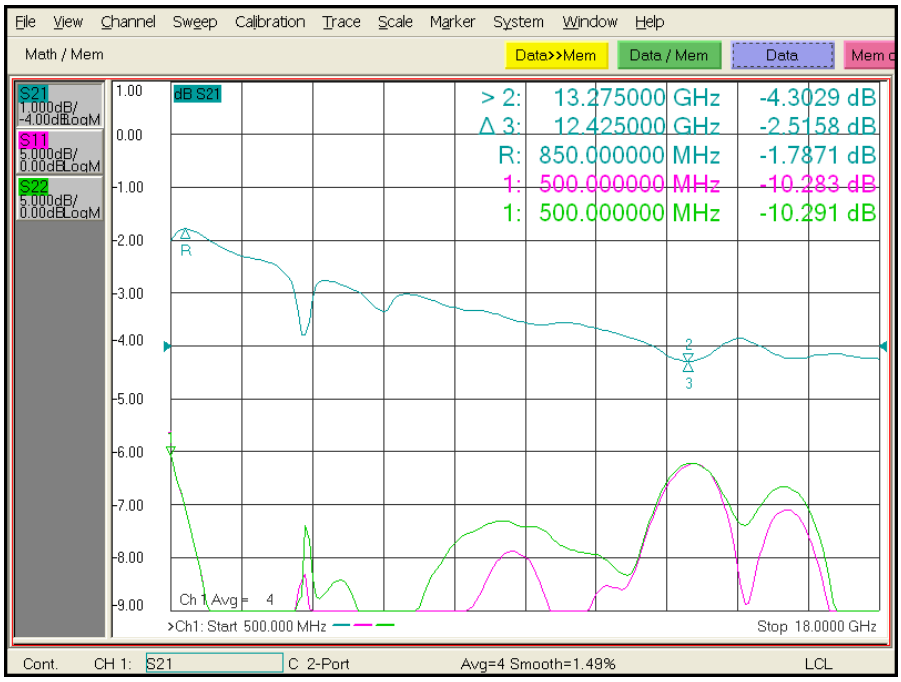
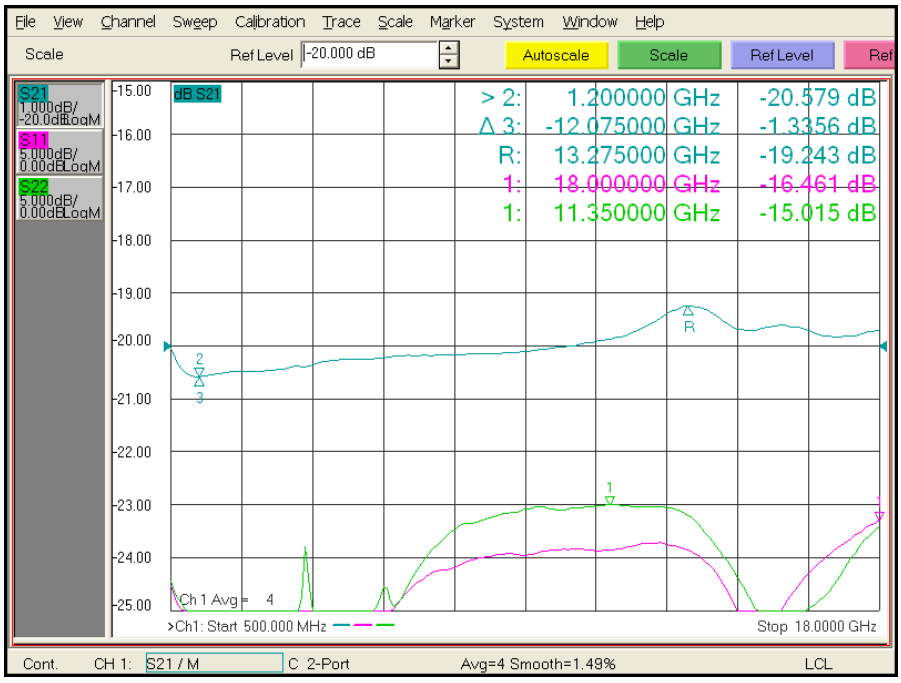
Typical Characteristics For DTA-0R5G18G-60-CD-1

Insertion Loss and VSWR @ 0dB Attenuation



20dB Attenuation



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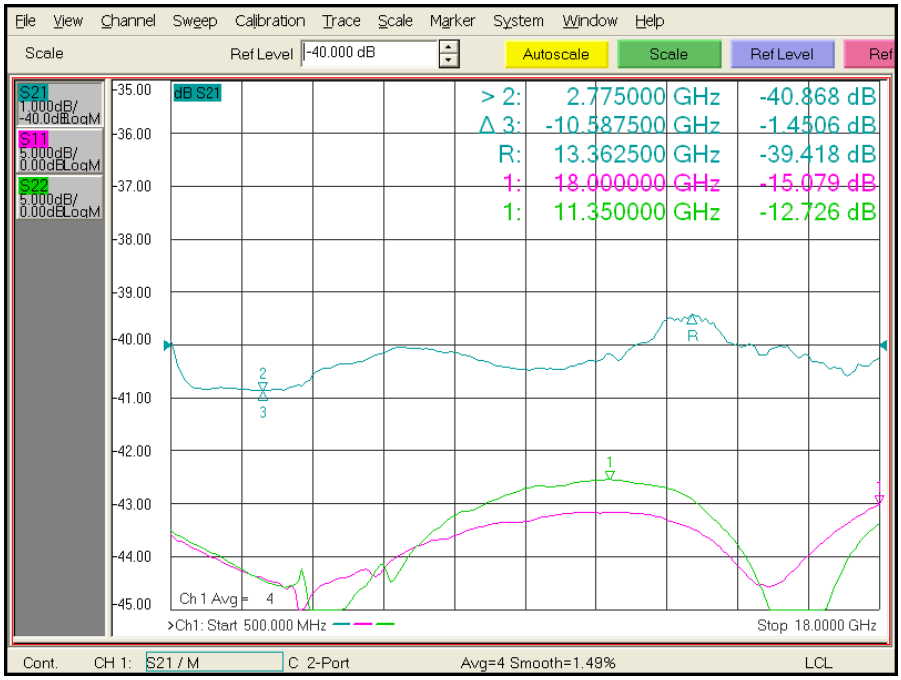
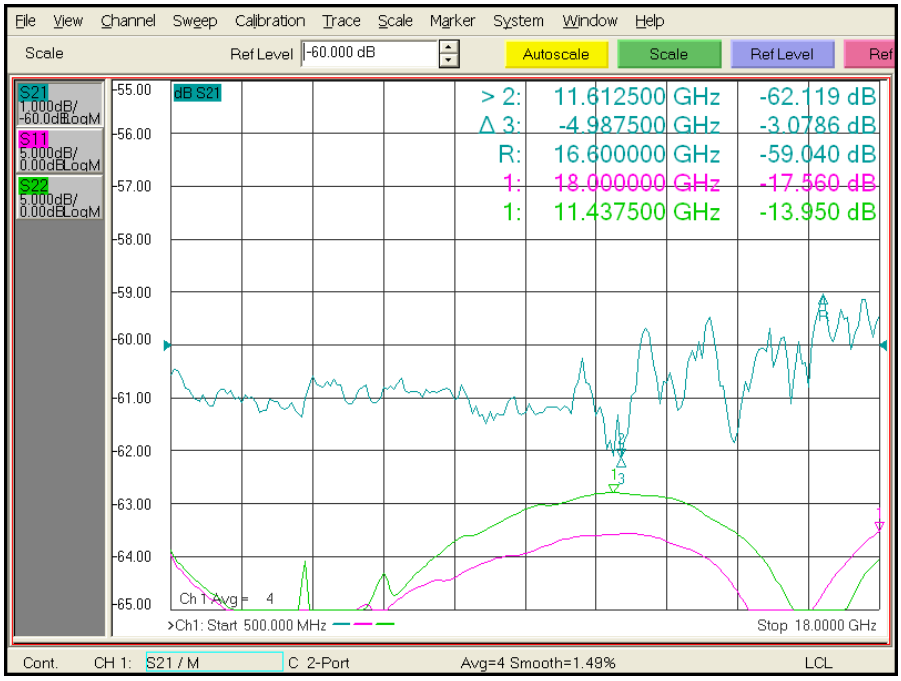
Typical Characteristics For DTA-0R5G18G-60-CD-1

40dB Attenuation



60dB Attenuation



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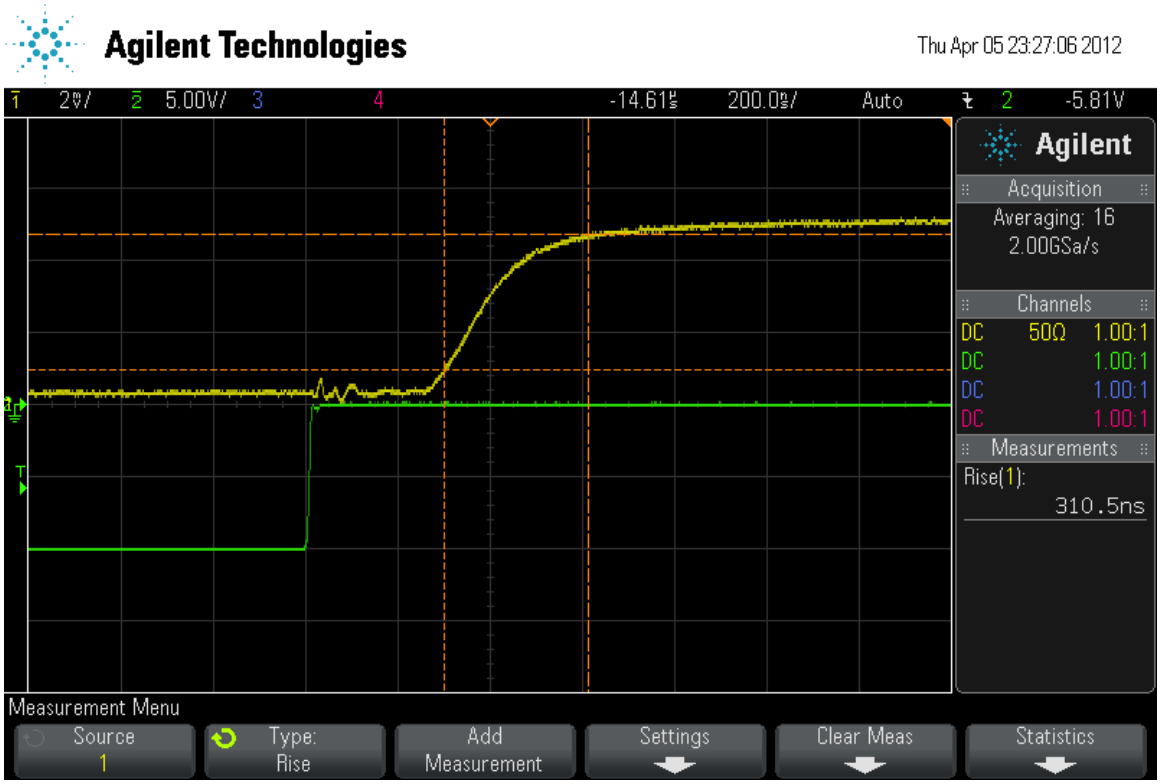
Typical Characteristics For DTA-0R5G18G-60-CD-1

Delay On
Measured with a Tunnel Diode @ 10GHz
Power Level +5dBm



Channel 1 (Yellow): Tunnel Diode output

Channel 2 (Green): TTL Input from Signal Generator

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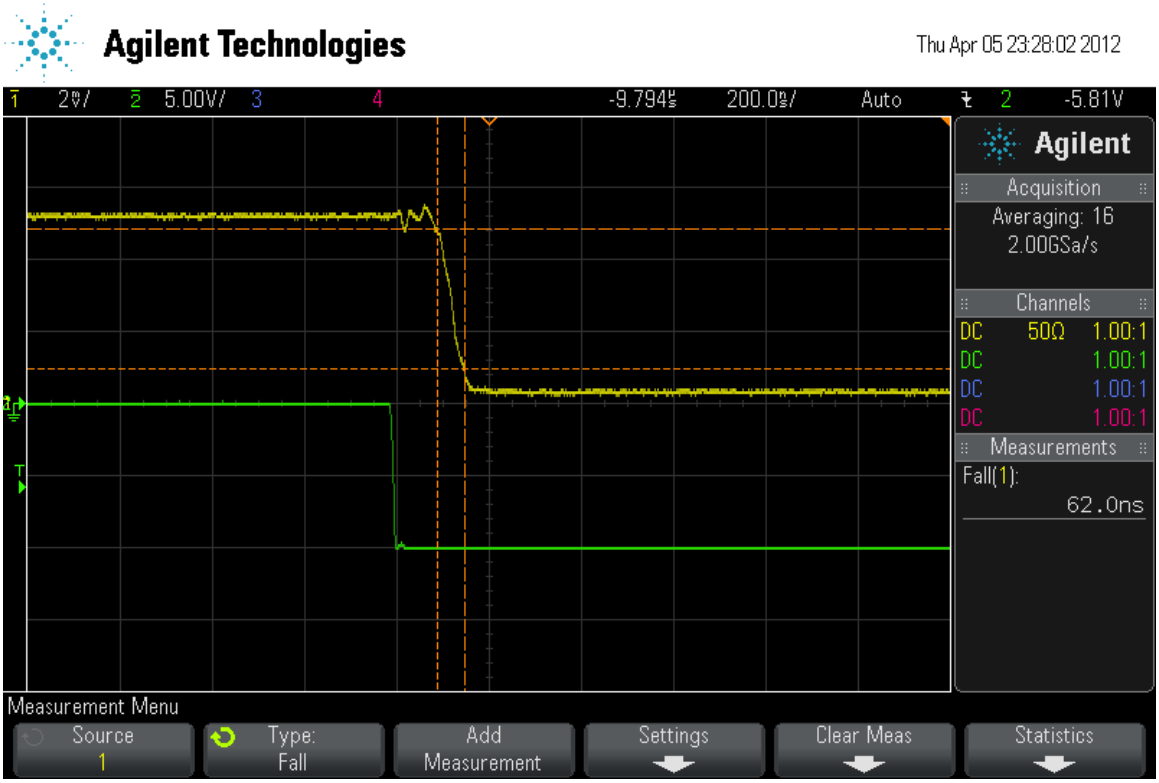
Typical Characteristics For DTA-0R5G18G-60-CD-1

Delay Off
Measured with a Tunnel Diode @ 10GHz
Power Level +5dBm



Channel 1 (Yellow): Tunnel Diode output

Channel 2 (Green): TTL Input from Signal Generator

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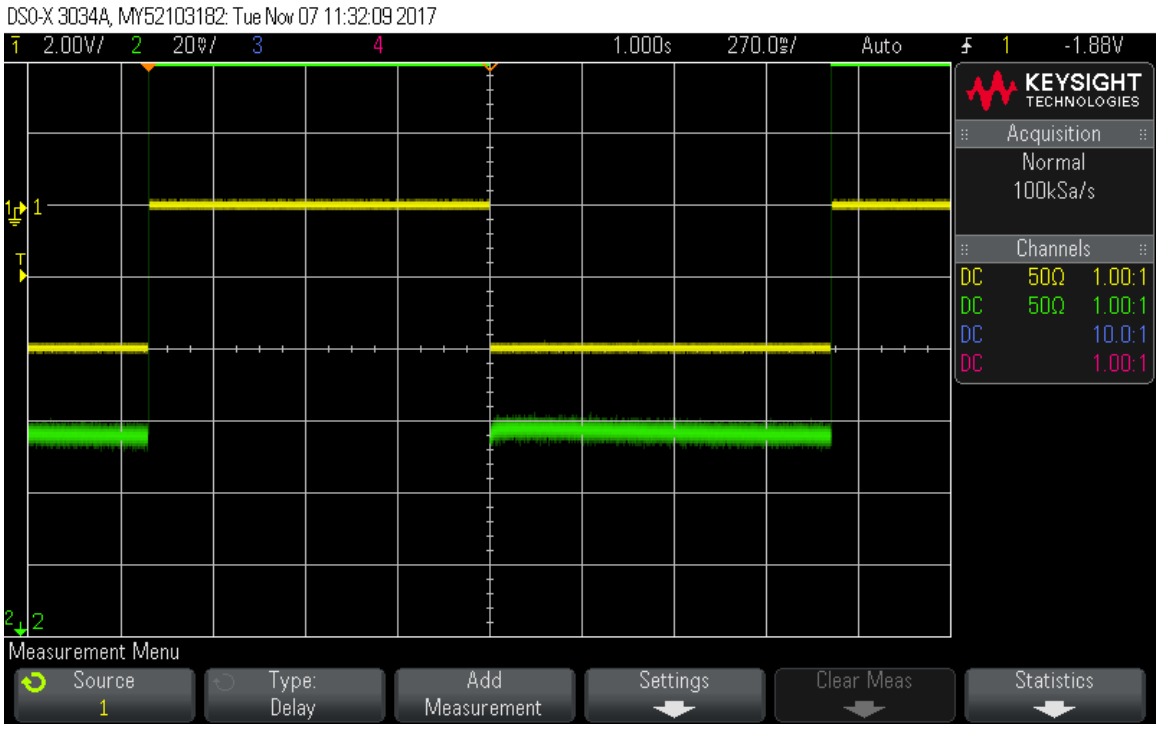
Typical Characteristics For DTA-0R5G18G-60-CD-1

Full Switching Graph
Measured with a DLVA @ 9GHz
Power Level +13.4 dBm
0 to -20dB Attenuation



Channel 1 (Yellow): TTL Input from Signal Generator

Channel 2 (Green): DLVA output

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