



**Typical Characteristics
For
DTA-18G40G-60-CD-1**



PMI MODEL NUMBER DTA-18G40G-60-CD-1 IS AN 11 BIT PROGRAMMABLE 60 dB ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.05 dB OVER THE FREQUENCY RANGE OF 18 TO 40 GHz. THIS MODEL IS OFFERED IN A SLIM LINE HOUSING MEASURING ONLY 0.5" HEIGHT WITH 2.92mm FEMALE CONNECTORS.

**December 22, 2021
Tested and Reported by: E. Kretz**



Typical Characteristics For DTA-18G40G-60-CD-1

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Typical Characteristics For DTA-18G40G-60-CD-1

Product Feature

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	10/1/21	
	B1	ECN # 22-0014	2/8/22	

DESCRIPTION:

PMI MODEL NUMBER DTA-18G40G-60-CD-1 IS A 11 BIT PROGRAMMABLE 60 dB ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.05 dB OVER THE FREQUENCY RANGE OF 18 GHz TO 40 GHz. THIS MODEL IS OFFERED IN THE SLIM LINE HOUSING MEASURING ONLY 0.5" IN HEIGHT WITH 2.92mm FEMALE CONNECTORS.

SPECIFICATIONS:

- FREQUENCY: 18 GHz TO 40 GHz
- MEAN ATTENUATION RANGE: 60 dB
- INSERTION LOSS: 11 dB TYP
- VSWR: 2.5:1 MAX
- FLATNESS: ±3.0 dB TYP
- ACCURACY OF ATTENUATION: ±3.0 dB TYP
- POWER HANDLING CAPABILITY: +24 dBm CW MAX
- INPUT 1dB COMPRESSION: +10 dBm TYP
- SWITCHING TIME:
 - ON TIME 1.0 us MAX
 - OFF TIME 0.5 us MAX
- POWER SUPPLY: 15V @ 100mA MAX
- CONNECTORS: (2) 2.92mm(F) & 15 PIN Micro-D-Female
Shipped with mating Micro-D Male
- WEIGHT: 3.0 oz (85 gm) Approximate
- 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.
- 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: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

PIN NO.	J3 PIN FUNCTIONS
1	2 dB
2	1 dB
3	0.5 dB
4	0.25 dB
5	GND
6	0.125 dB
7	0.0625 dB
8	GND
9	0.03125 dB (LSB)
10	Not Used
11	+15VDC
12	32 dB (MSB)
13	16 dB
14	8 dB
15	4 dB

2.92mm Female Connectors
(2 Places)

PMI CONFIDENTIAL AND PROPRIETARY

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ISO 9001 CERTIFIED

APPROVALS	DATE	TITLE	REV.
		PRODUCT FEATURE	
		DTA-18G40G-60-CD-1	
DRAWN <i>PJW</i>	8/1/13	SIZE A	REV. B1
CHECKED:		PFCW NO. 05XQ0	DWG NO. 27041840
ISSUED:		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-18G40G-60-CD-1

+25°C Data

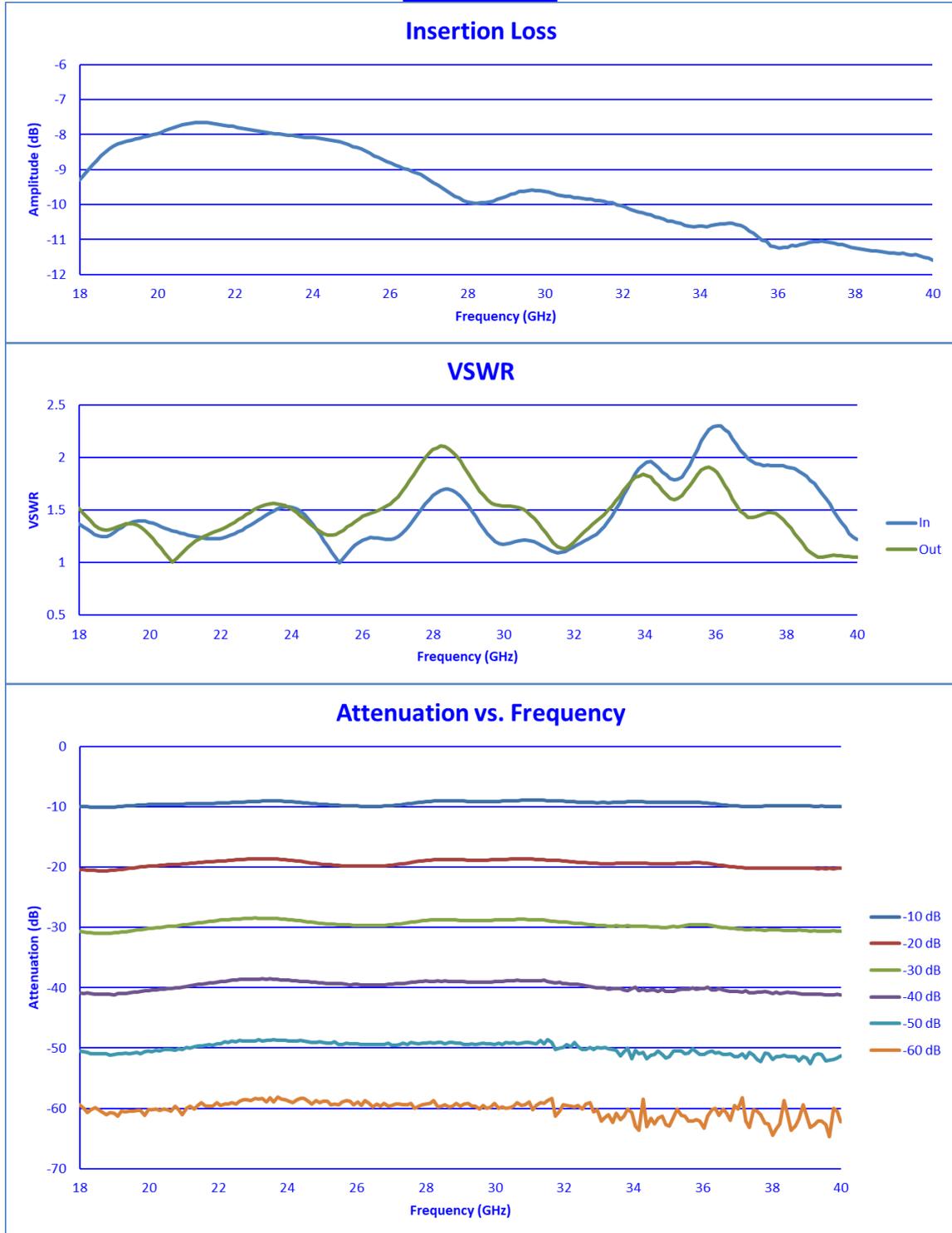
TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	PASS/FAIL	QA QC
1	Frequency Range:	18 GHz – 40 GHz	18 GHz – 40 GHz	
2	Mean Attenuation Range:	60 dB	67.2 dB	
3	Insertion Loss:	11 dB Typ.	11.6 dB See Plot	
4	VSWR:	2.5:1 Max.	2.3:1 See Plot	
5	Flatness:	±3.0 dB Typ.	±3.31 dB See Plot	
6	Accuracy of Attenuation	±3.0 dB Typ.	±1.41 dB See Plot	
7	Power Handling	+24 dBm CW Max.	+24 dBm CW	
8	Input 1 dB Compression	+10 dBm Typ.	+16 dBm	
9	Switching Time	On Time: 1.0 µs Max. Off Time: 0.5 µs Max.	OFF 0.4 µs OFF 0.2 µs	
10	Power Supply:	+15 V @ 100 mA Max.	+15 V @ 41 mA	

Programed Attenuation	Attenuation	Accuracy	Flatness dB	Programed Attenuation	Attenuation	Accuracy	Flatness dB
dB	dB	dB	±dB	dB	dB	dB	±dB
0.03	0.02	0.02	0.02	5.00	4.58	0.4	0.30
0.06	0.04	0.03	0.02	10.00	9.50	0.5	0.57
0.13	0.09	0.04	0.03	15.00	14.56	0.4	0.80
0.25	0.26	-0.01	0.06	20.00	19.60	0.4	0.99
0.50	0.49	0.01	0.08	25.00	24.70	0.3	1.15
1.00	0.98	0.02	0.13	30.00	29.73	0.3	1.28
2.00	1.89	0.11	0.19	35.00	34.87	0.1	1.37
4.00	3.82	0.18	0.26	40.00	39.88	0.1	1.36
8.00	7.63	0.37	0.47	45.00	45.27	-0.3	1.63
16.00	15.67	0.33	0.84	50.00	50.59	-0.6	2.03
32.00	31.85	0.15	1.30	55.00	55.92	-0.9	2.39
63.97	67.21			60.00	61.41	-1.4	3.31



Typical Characteristics For DTA-18G40G-60-CD-1

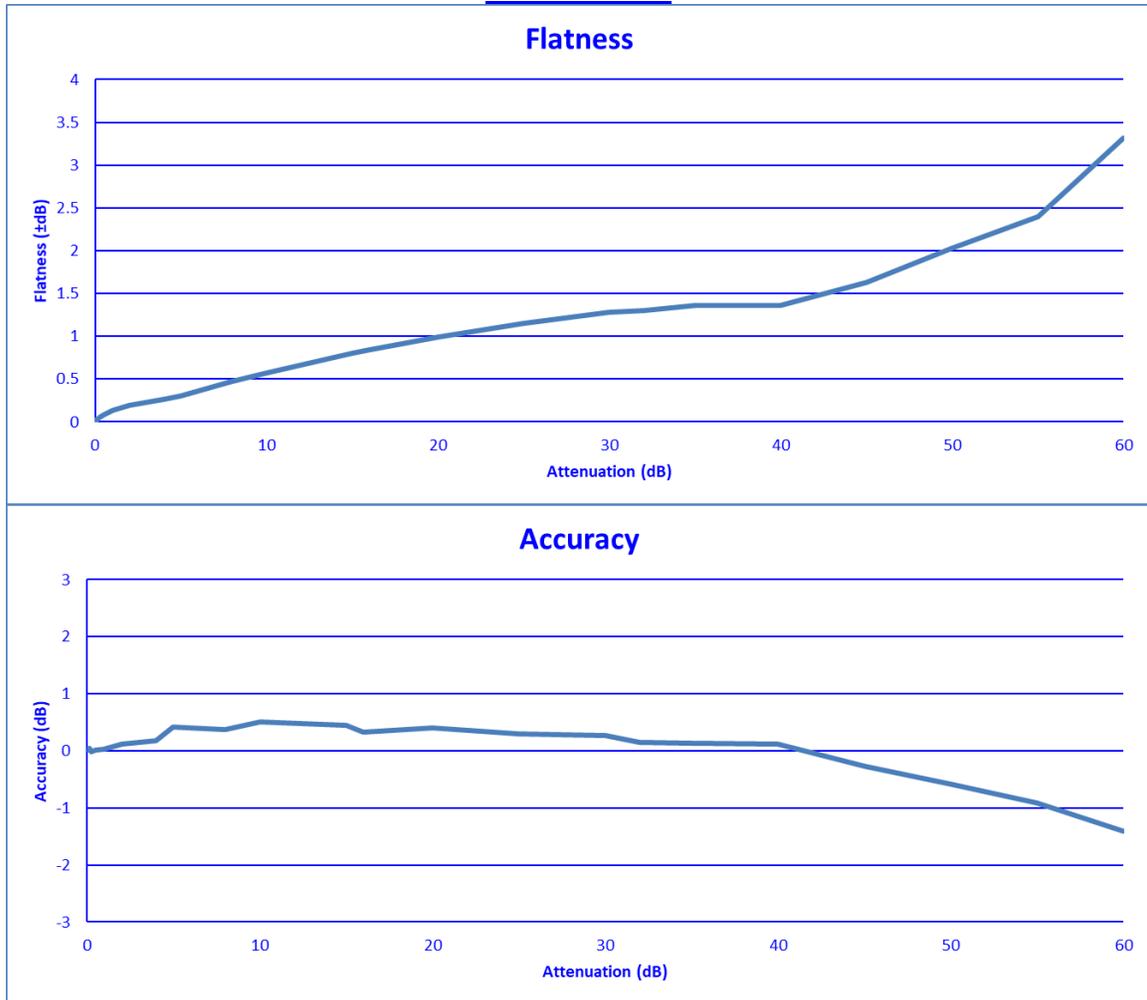
+25°C Data





Typical Characteristics For DTA-18G40G-60-CD-1

+25°C Data





Typical Characteristics For DTA-18G40G-60-CD-1

-40°C Data

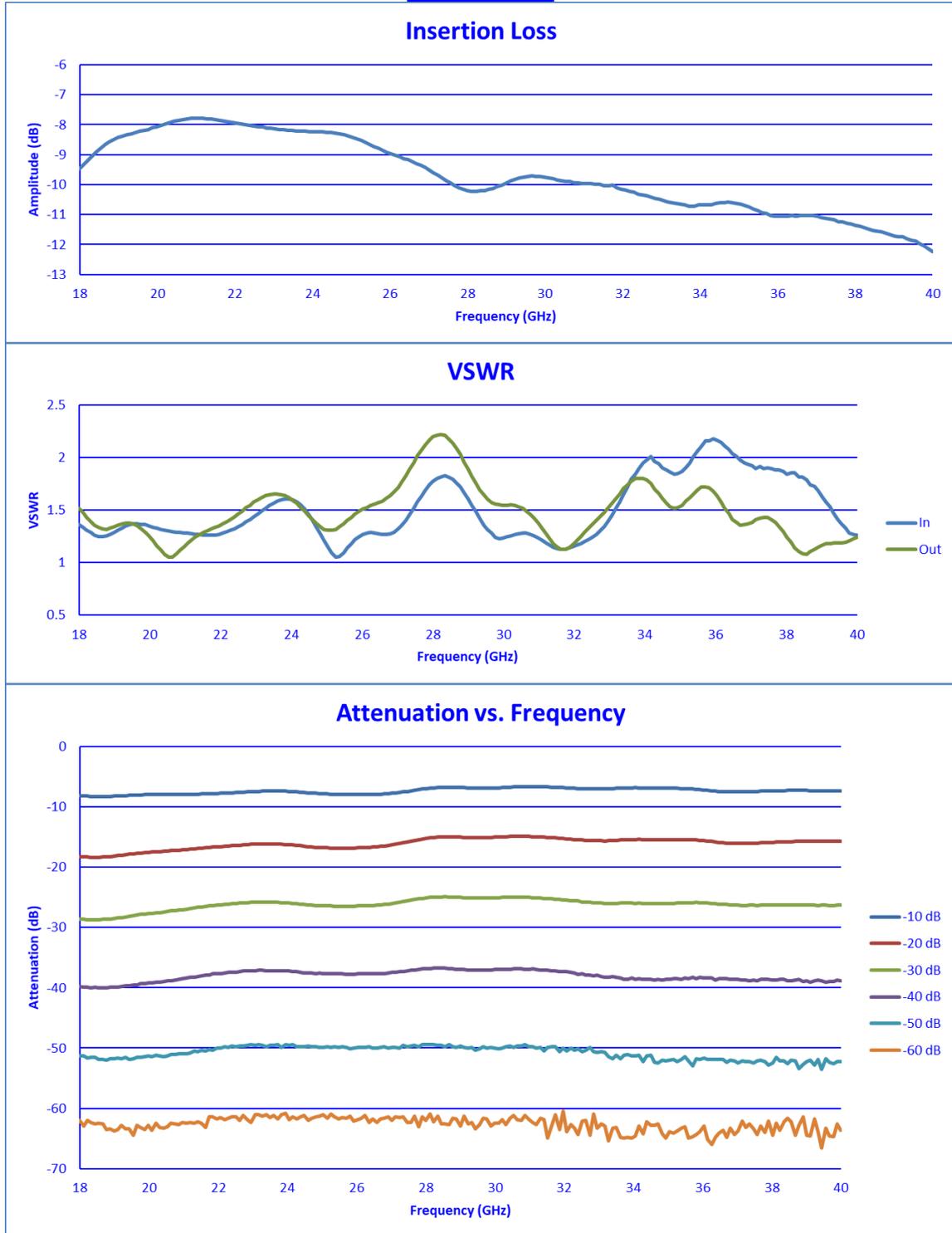
TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	PASS/FAIL	QA QC
1	Frequency Range:	18 GHz – 40 GHz	18 GHz – 40 GHz	
2	Mean Attenuation Range:	60 dB	70.9 dB	
3	Insertion Loss:	11 dB Typ.	12.2 dB See Plot	
4	VSWR:	2.5:1 Max.	2.22:1 See Plot	
5	Flatness:	±3.0 dB Typ.	±3.22 dB See Plot	
6	Accuracy of Attenuation	±3.0 dB Typ.	±3.5 dB See Plot	
7	Power Handling	+24 dBm CW Max.	+24 dBm CW	
8	Input 1 dB Compression	+10 dBm Typ.	+16 dBm	
9	Switching Time	On Time: 1.0 µs Max. Off Time: 0.5 µs Max.	OFF 0.4 µs OFF 0.2 µs	
10	Power Supply:	+15 V @ 100 mA Max.	+15 V @ 41 mA	

Programed Attenuation	Attenuation	Accuracy	Flatness dB	Programed Attenuation	Attenuation	Accuracy	Flatness dB
dB	dB	dB	±dB	dB	dB	dB	±dB
0.03	0.01	0.02	0.01	5.00	3.32	1.7	0.35
0.06	0.03	0.03	0.01	10.00	7.48	2.5	0.83
0.13	0.08	0.05	0.02	15.00	11.99	3.0	1.37
0.25	0.26	-0.01	0.05	20.00	16.64	3.4	1.73
0.50	0.45	0.05	0.07	25.00	21.62	3.4	1.86
1.00	0.88	0.12	0.14	30.00	26.82	3.2	1.90
2.00	1.50	0.50	0.20	35.00	32.51	2.5	1.81
4.00	2.72	1.28	0.29	40.00	38.41	1.6	1.66
8.00	5.80	2.20	0.61	45.00	44.61	0.4	1.49
16.00	12.96	3.04	1.47	50.00	51.43	-1.4	2.06
32.00	29.11	2.89	1.86	55.00	58.26	-3.3	3.22
63.97	70.85			60.00	63.50	-3.5	3.15



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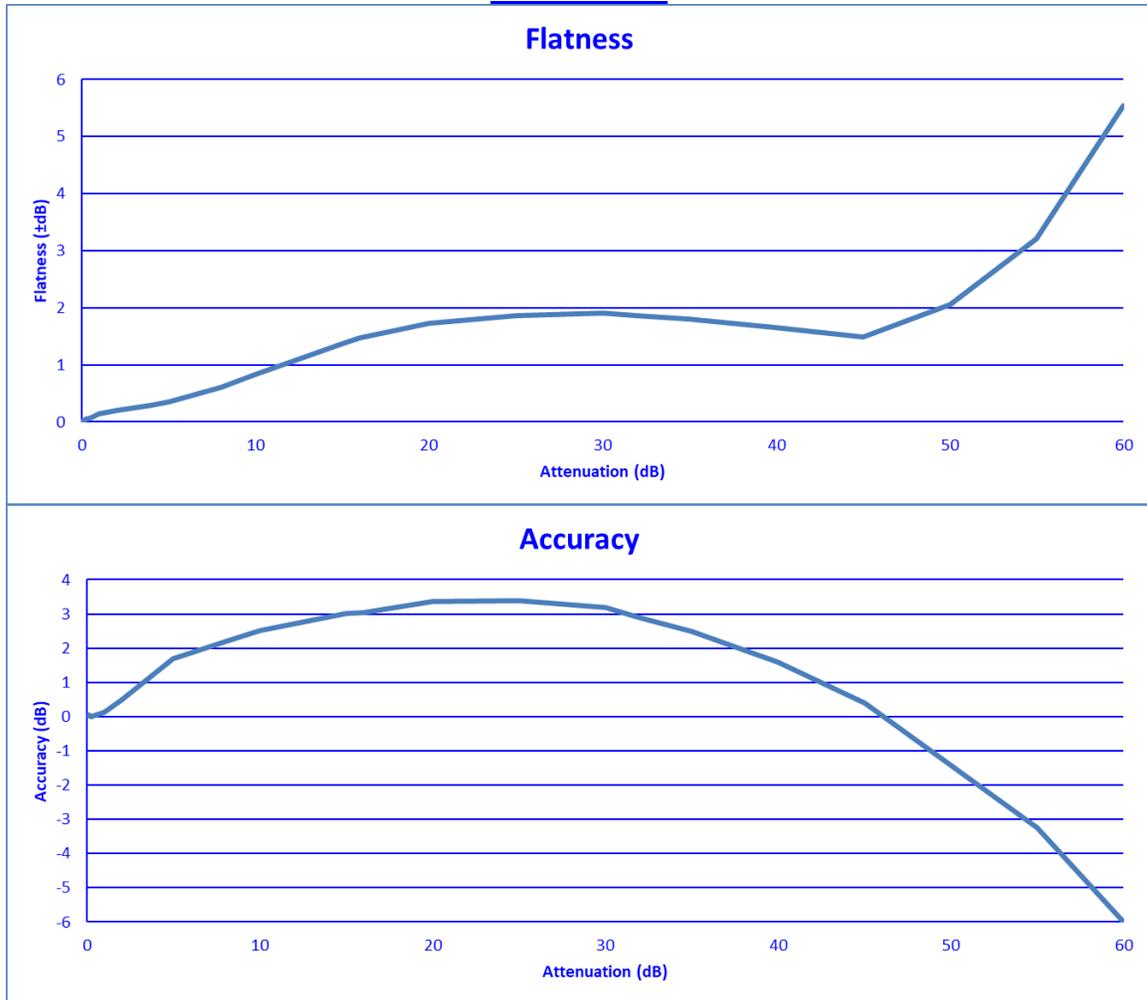
-40°C Data





Typical Characteristics For DTA-18G40G-60-CD-1

-40°C Data





Typical Characteristics For DTA-18G40G-60-CD-1

+85°C Data

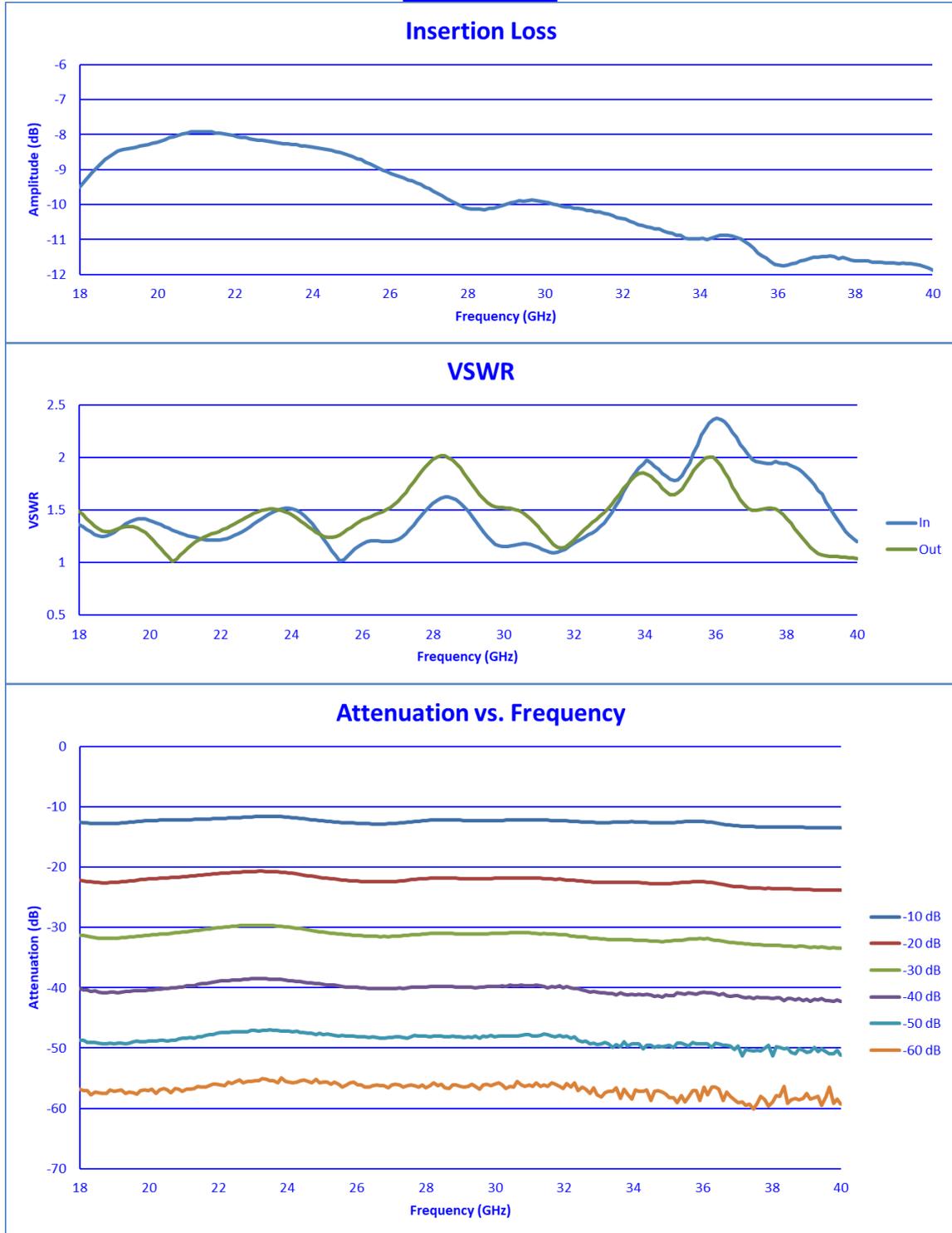
TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	PASS/FAIL	QA QC
1	Frequency Range:	18 GHz – 40 GHz	18 GHz – 40 GHz	
2	Mean Attenuation Range:	60 dB	70.9 dB	
3	Insertion Loss:	11 dB Typ.	12.2 dB See Plot	
4	VSWR:	2.5:1 Max.	2.22:1 See Plot	
5	Flatness:	±3.0 dB Typ.	±5.55 dB See Plot	
6	Accuracy of Attenuation	±3.0 dB Typ.	±6 dB See Plot	
7	Power Handling	+24 dBm CW Max.	+24 dBm CW	
8	Input 1 dB Compression	+10 dBm Typ.	+16 dBm	
9	Switching Time	On Time: 1.0 µs Max. Off Time: 0.5 µs Max.	OFF 0.4 µs OFF 0.2 µs	
10	Power Supply:	+15 V @ 100 mA Max.	+15 V @ 41 mA	

Programed Attenuation	Attenuation	Accuracy	Flatness dB	Programed Attenuation	Attenuation	Accuracy	Flatness dB
dB	dB	dB	±dB	dB	dB	dB	±dB
0.03	0.01	0.02	0.01	5.00	3.32	1.7	0.35
0.06	0.03	0.03	0.01	10.00	7.48	2.5	0.83
0.13	0.08	0.05	0.02	15.00	11.99	3.0	1.37
0.25	0.26	-0.01	0.05	20.00	16.64	3.4	1.73
0.50	0.45	0.05	0.07	25.00	21.62	3.4	1.86
1.00	0.88	0.12	0.14	30.00	26.82	3.2	1.90
2.00	1.50	0.50	0.20	35.00	32.51	2.5	1.81
4.00	2.72	1.28	0.29	40.00	38.41	1.6	1.66
8.00	5.80	2.20	0.61	45.00	44.61	0.4	1.49
16.00	12.96	3.04	1.47	50.00	51.43	-1.4	2.06
32.00	29.11	2.89	1.86	55.00	58.26	-3.3	3.22
63.97	70.85			60.00	66.00	-6.0	5.55



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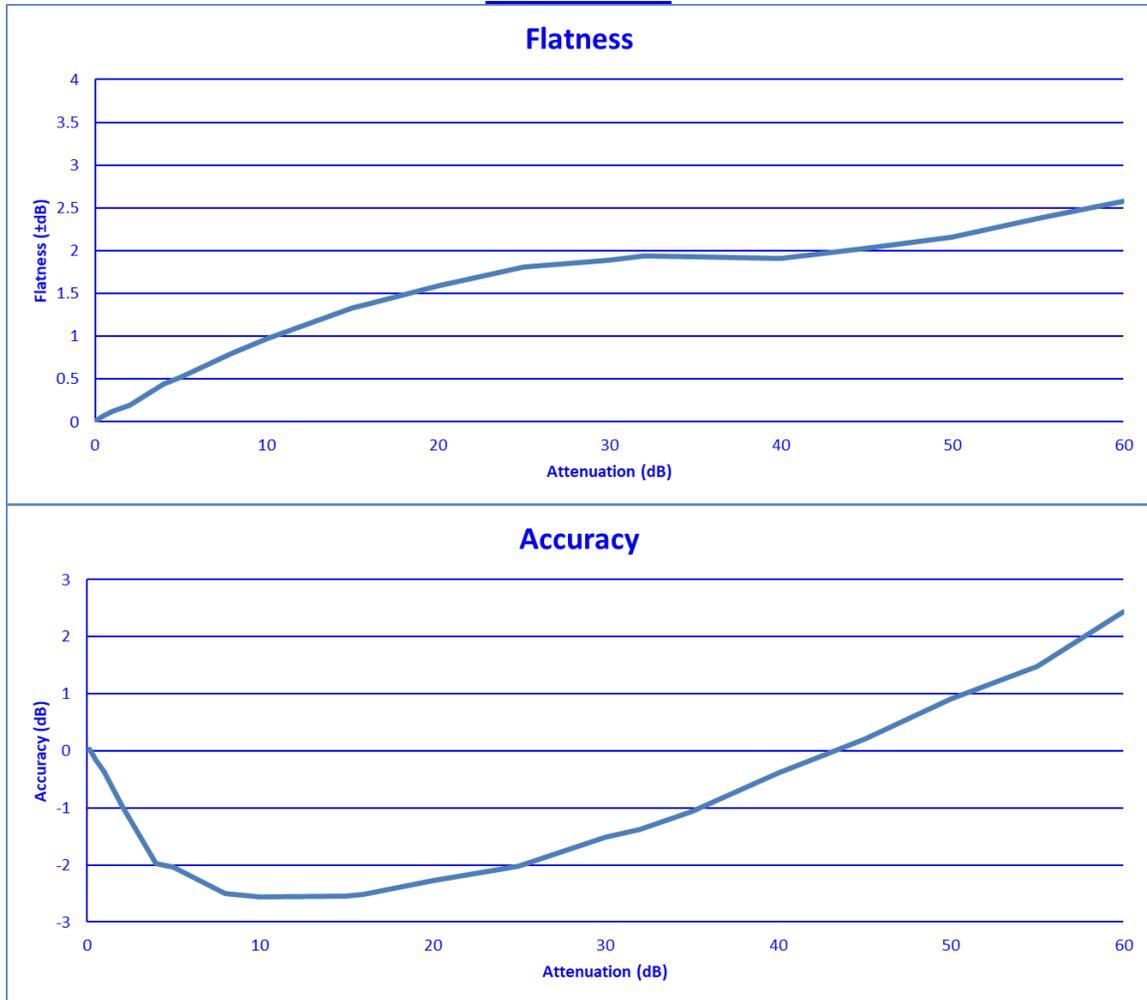
+85°C Data





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+85°C Data

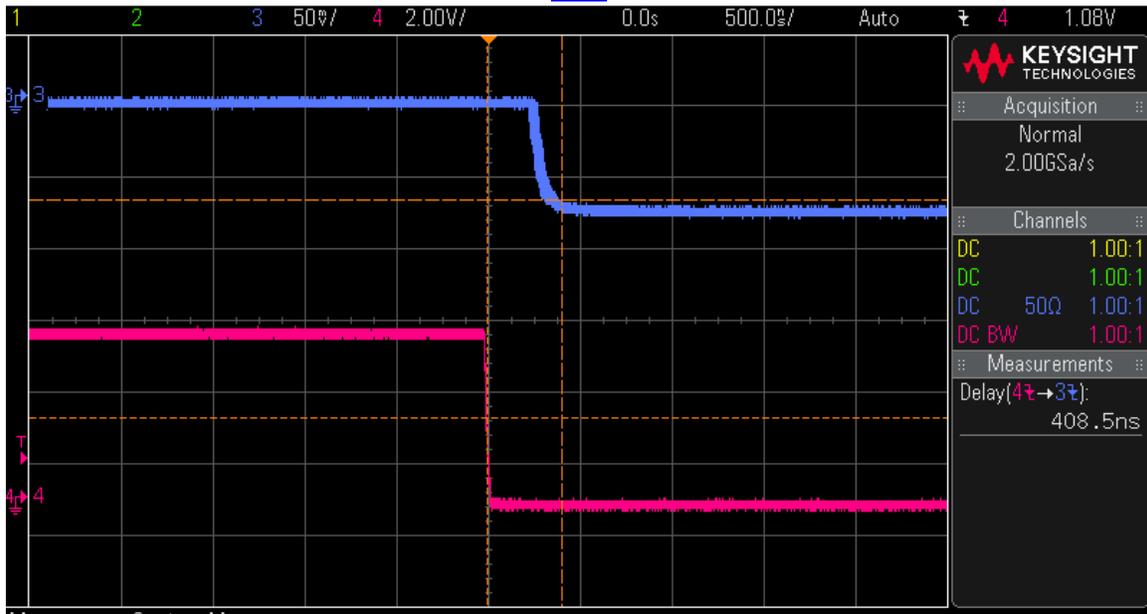




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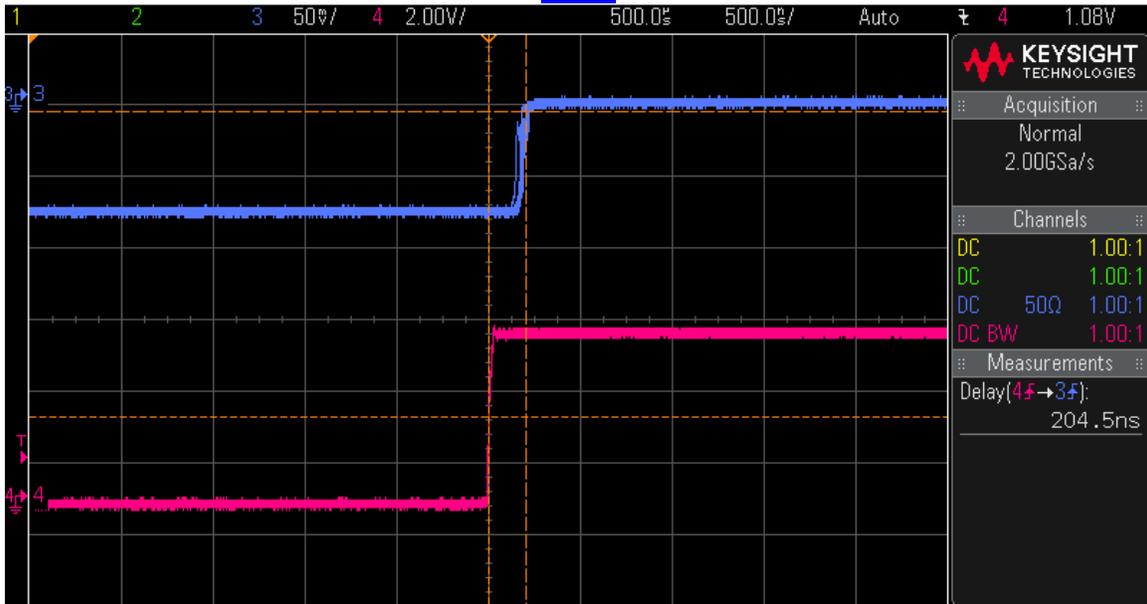
Switching Speed

ON



Blue Trace: RF, Red Trace: TTL

OFF



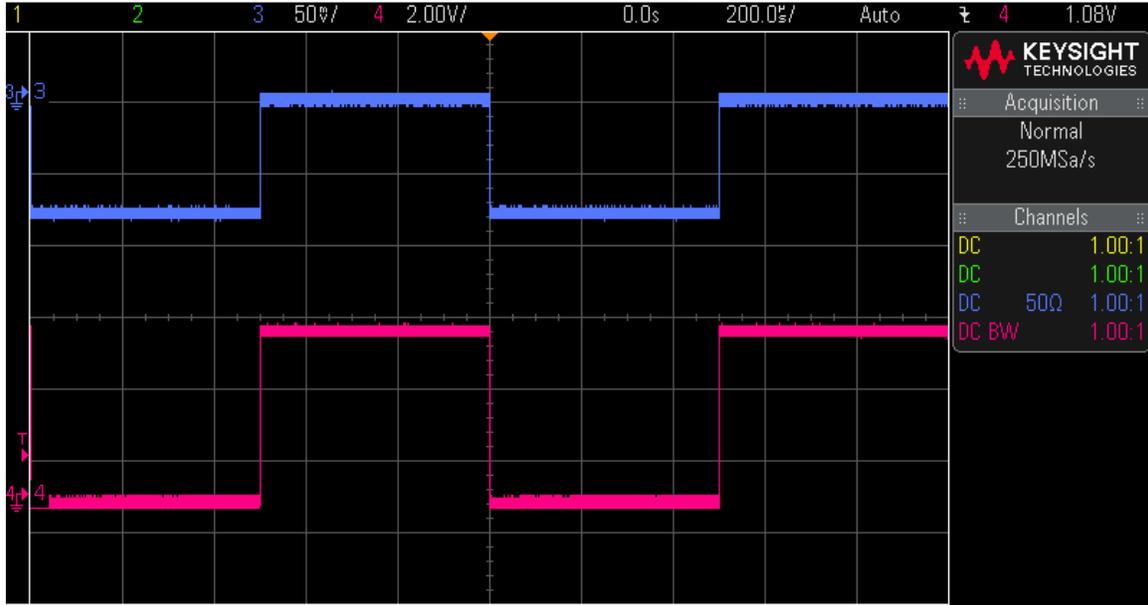
Blue Trace: RF, Red Trace: TTL



Typical Characteristics For DTA-18G40G-60-CD-1

Switching Speed

FULL PULSE



Blue Trace: RF, Red Trace: TTL

Compression

