

TYPICAL CHARACTERISTICS FOR DTA-30M7D2G-60-CD-1

PMI MODEL DTA-30M7D2G-60-CD-1 IS A 8 BIT PROGRAMMABLE 60 dB PIN DIODE ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.25 dB OVER THE FREQUENCY RANGE OF 0.03 TO 7.2 GHz. THIS UNIT IS CONTROLLED WITH A 15 PIN MICRO-D FEMALE CONNECTOR (MATING CONNECTOR SUPPLIED) AND HAS SMA FEMALE CONNECTORS.



Reported By: Dylan Hoschar

Tested By: K. Mansfield

6/24/2026

OUTLINE DRAWING

DESCRIPTION:

PMI MODEL DTA-30M7D2G-60-CD-1 IS A 8 BIT PROGRAMMABLE 60 dB PIN DIODE ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.25 dB OVER THE FREQUENCY RANGE OF 0.03 TO 7.2 GHz. HOUSING SIZE IS 2.0" x 1.8" x 0.5" WITH A 15 PIN MICRO-D FEMALE CONTROL CONNECTOR (MATING CONNECTOR SUPPLIED) AND SMA FEMALE CONNECTORS.

SPECIFICATIONS:

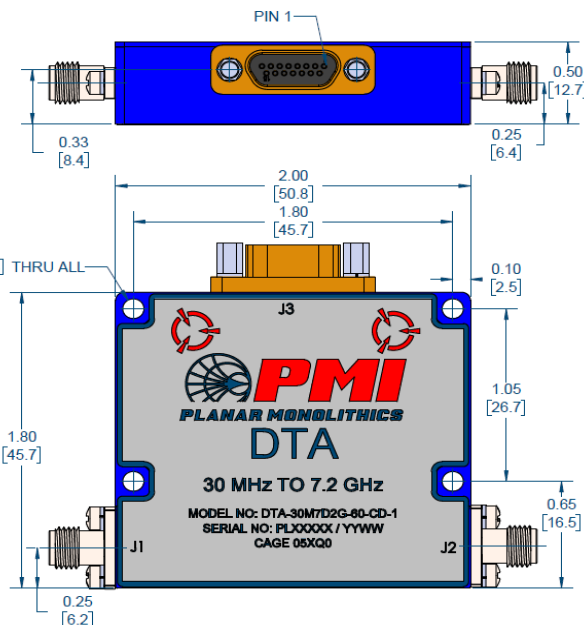
- FREQUENCY RANGE: 0.03 GHz TO 7.2 GHz
- MEAN ATTENUATION RANGE: 60 dB
- INSERTION LOSS: 4.0 dB MAX
- RETURN LOSS: -8.5 dB MAX
- MAX POWER RATING: +20 dBm MAX
- ATTENUATION FLATNESS: ±1.0 dB @ 10 dB
±1.5 dB @ 20 dB
±3.0 dB @ 40 dB
±5.0 dB @ 60 dB
- ATTENUATION ACCURACY: ±1.0 dB FROM 0-30 dB
±1.3 dB FROM 30-50 dB
±1.5 dB FROM 50-60 dB
- SWITCHING TIME: 50 us MAX
- DIGITAL CONTROL: 8 BIT BINARY TTL
- LOGIC INPUT: LOGIC "0" (BIT OFF) = -0.3V TO +0.8V
LOGIC "1" (BIT ON) = +2V TO +5V
- INPUT TRACKING: ATTENUATION MUST TRACK INPUT VALUES MONOTONICALLY
- POWER SUPPLY: +12 VDC @ 180 mA MAX
(10.8 VDC MIN TO 13.2 VDC MAX)
- PWR/CTL CONNECTOR: 15 PIN MICRO-D FEMALE (MATING CONNECTOR SUPPLIED)
- CONNECTORS: SMA (F) REMOVEABLE
- FINISH: PAINTED BLUE

ENVIRONMENTAL RATINGS:

- TEMPERATURE: -40°C TO +85°C (OPERATING)
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202, METHOD 103B COND. B
- SHOCK: MIL-STD-202, METHOD 213B COND. B
- VIBRATION: MIL-STD-202, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202, METHOD 105C COND. B
- FUNGUS: MIL-STD-810, METHOD 508.2
- TEMPERATURE CYCLE: MIL-STD-202, METHOD 107D COND. A

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

PIN NO.	J3 FUNCTION
1	2 dB
2	1 dB
3	0.5 dB
4	0.25 dB (LSB)
5	GND
6	NOT USED
7	NOT USED
8	GND
9	NOT USED
10	NOT USED
11	+12 VDC
12	32 dB (MSB)
13	16 dB
14	8 dB
15	4 dB



PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS		DATE	TITLE	
DESIGN	D. HOSCHAR	12/20/2018	OUTLINE	
TESTED			SIZE	FROM NO.
			B	05XQ0
SCALE 2:1			PWG NO.	REV
			27053940	A1
SHEET 1 OF 1				

TEST DATA

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results		
			-40°C	+25°C	+85°C
1	Frequency Range:	0.03 to 7.2 GHz	0.03 to 7.2 GHz		
2	Insertion Loss:	4.0 dB Max.	2.9 dB See Graph	3.3 dB See Graph	3.5 dB See Graph
3	Max Power Rating:	+20 dBm CW Max.	+20 dBm See Graph		
4	Return Loss:	-8.5 dB Max.	-9.3 dB	-9.6 dB	-9.1 dB
5	Mean Attenuation Range:	60 dB Min.	60 dB		
6	Attenuation Flatness: (Up to 10 dB)	±1 dB Typ.	±0.42 dB See Graph	±0.32 dB See Graph	±0.47 dB See Graph
7	Attenuation Flatness: (Up to 20 dB)	±1.5 dB Typ.	±0.61 dB See Graph	±0.49 dB See Graph	±0.44 dB See Graph
8	Attenuation Flatness: (Up to 40 dB)	±3 dB Typ.	±1.61 dB See Graph	±0.43 dB See Graph	±0.38 dB See Graph
9	Attenuation Flatness: (Up to 60 dB)	±5 dB Typ.	±2.9 dB See Graph	±0.81 dB See Graph	±1.18 dB See Graph
10	Attenuation Accuracy: (Up to 30 dB)	±1 dB Typ.	±1.42 dB See Graph	±0.06 dB See Graph	±0.6 dB See Graph
11	Attenuation Accuracy: (Up to 50 dB)	±1.3 dB Typ.	±0.84 dB See Graph	±0.07 dB See Graph	±0.38 dB See Graph
12	Attenuation Accuracy: (Up to 60 dB)	±1.5 dB Typ.	±0.99 dB See Graph	±0.05 dB See Graph	±0.82 dB See Graph
13	Switching Time:	50 us Max.	5.896 us See Graphs		
14	DC Power Supply:	+12 VDC (+10.8 VDC Min. to 13.2 VDC Max.)	+12 VDC (+10.8 VDC Min. to 13.2 VDC Max.)		
15	DC Current:	180 mA Max.	78 mA	78 mA	79 mA

Accuracy and Flatness @ -40°C

Programmed Attenuation	Attenuation	Flatness	Accuracy of Attenuation
dB	dB	±dB	dB
0.25	0.21	0.02	-0.04
0.50	0.44	0.04	-0.06
1.00	0.89	0.08	-0.11
2.00	1.85	0.15	-0.15
4.00	4.01	0.34	0.01
8.00	8.31	0.56	0.31
16.00	16.84	0.59	0.84
32.00	32.59	1.35	0.59
62.00	63.42	3.43	1.42
63.94	65.28	3.64	1.35

Programmed Attenuation	Attenuation	Flatness	Accuracy of Attenuation
dB	dB	±dB	dB
5.00	5.07	0.42	0.07
10.00	10.50	0.61	0.50
15.00	15.75	0.58	0.75
20.00	21.01	0.61	1.01
25.00	25.83	0.77	0.83
30.00	30.68	1.19	0.68
35.00	35.55	1.61	0.55
40.00	40.59	2.03	0.59
45.00	45.65	2.20	0.65
50.00	50.82	2.55	0.82
55.00	55.99	2.90	0.99
60.00	61.24	3.14	1.24

Accuracy and Flatness @ +25°C

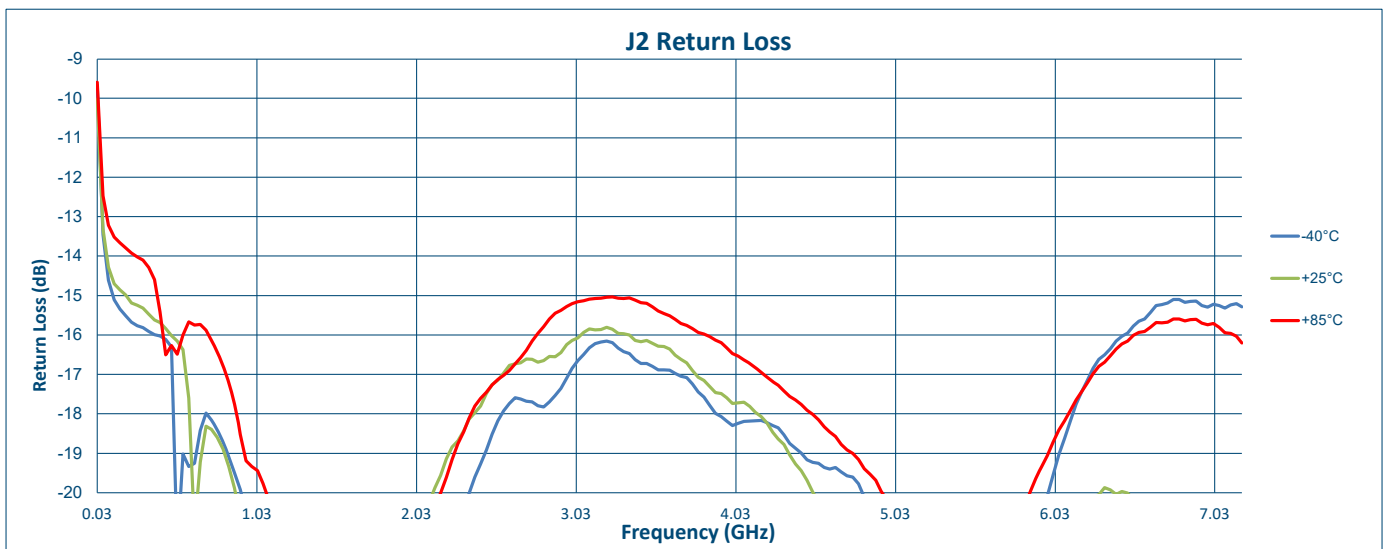
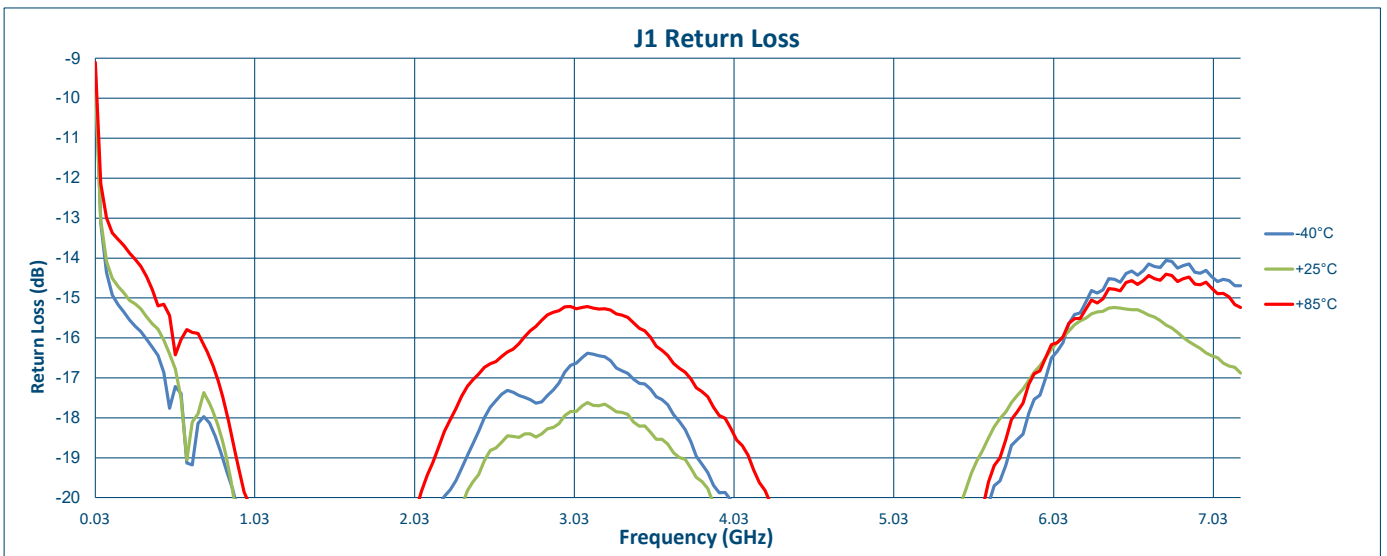
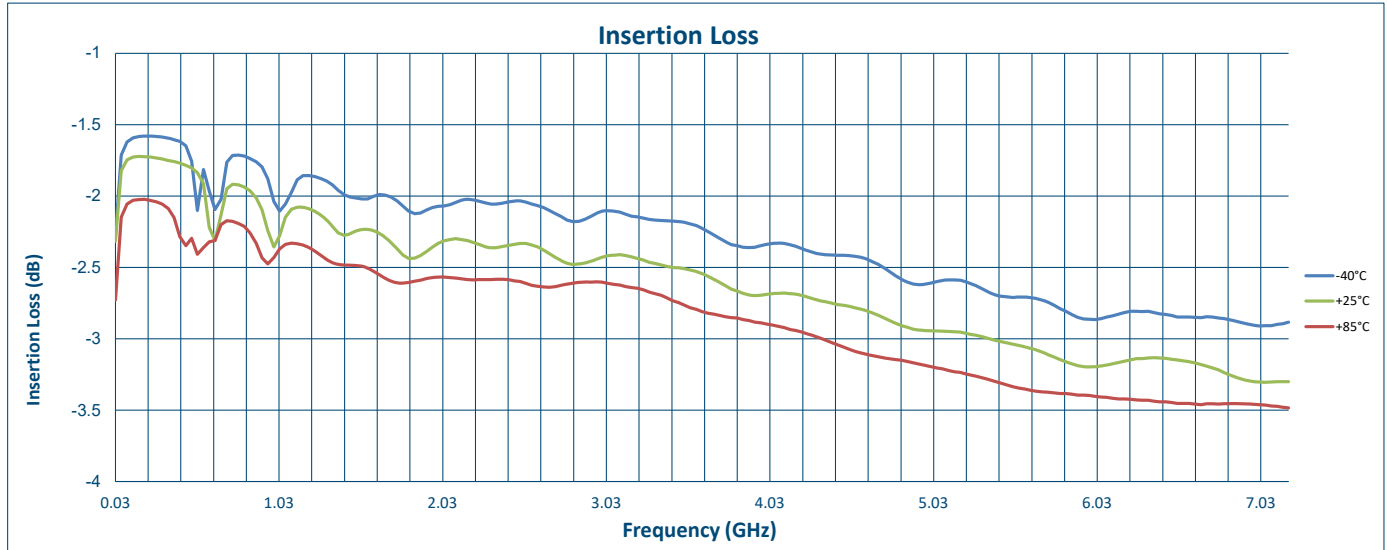
Programmed Attenuation	Attenuation	Flatness	Accuracy of Attenuation
dB	dB	±dB	dB
0.25	0.25	0.02	0.00
0.50	0.50	0.04	0.00
1.00	1.00	0.08	0.00
2.00	2.01	0.16	0.01
4.00	3.99	0.27	-0.01
8.00	7.99	0.44	-0.01
16.00	15.97	0.43	-0.03
32.00	31.91	0.42	-0.09
62.00	61.97	1.55	-0.03
63.94	63.71	1.75	-0.23

Programmed Attenuation	Attenuation	Flatness	Accuracy of Attenuation
dB	dB	±dB	dB
5.00	4.97	0.32	-0.03
10.00	10.00	0.49	0.00
15.00	14.94	0.45	-0.06
20.00	19.98	0.40	-0.02
25.00	24.94	0.40	-0.06
30.00	29.96	0.41	-0.04
35.00	34.93	0.43	-0.07
40.00	39.94	0.51	-0.06
45.00	44.95	0.43	-0.05
50.00	49.99	0.57	-0.01
55.00	54.95	0.81	-0.05
60.00	59.98	1.20	-0.02

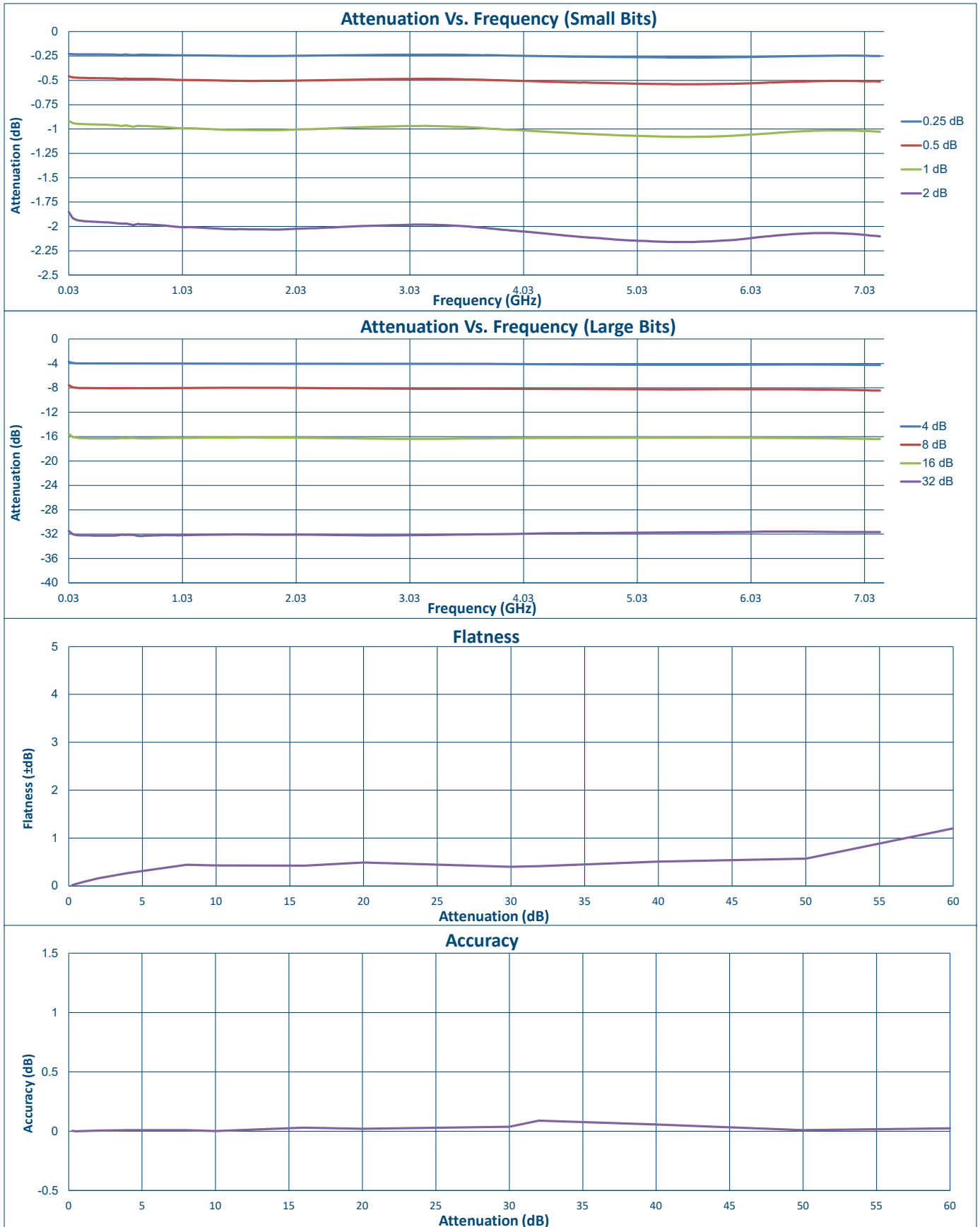
Accuracy and Flatness @ +85°C

Programmed Attenuation	Attenuation	Flatness	Accuracy of Attenuation
dB	dB	±dB	dB
0.25	0.30	0.02	0.05
0.50	0.60	0.05	0.10
1.00	1.18	0.09	0.18
2.00	2.31	0.17	0.31
4.00	4.43	0.27	0.43
8.00	8.55	0.43	0.55
16.00	16.60	0.43	0.60
32.00	32.23	0.36	0.23
62.00	61.10	1.25	-0.90
63.94	62.88	1.46	-1.06

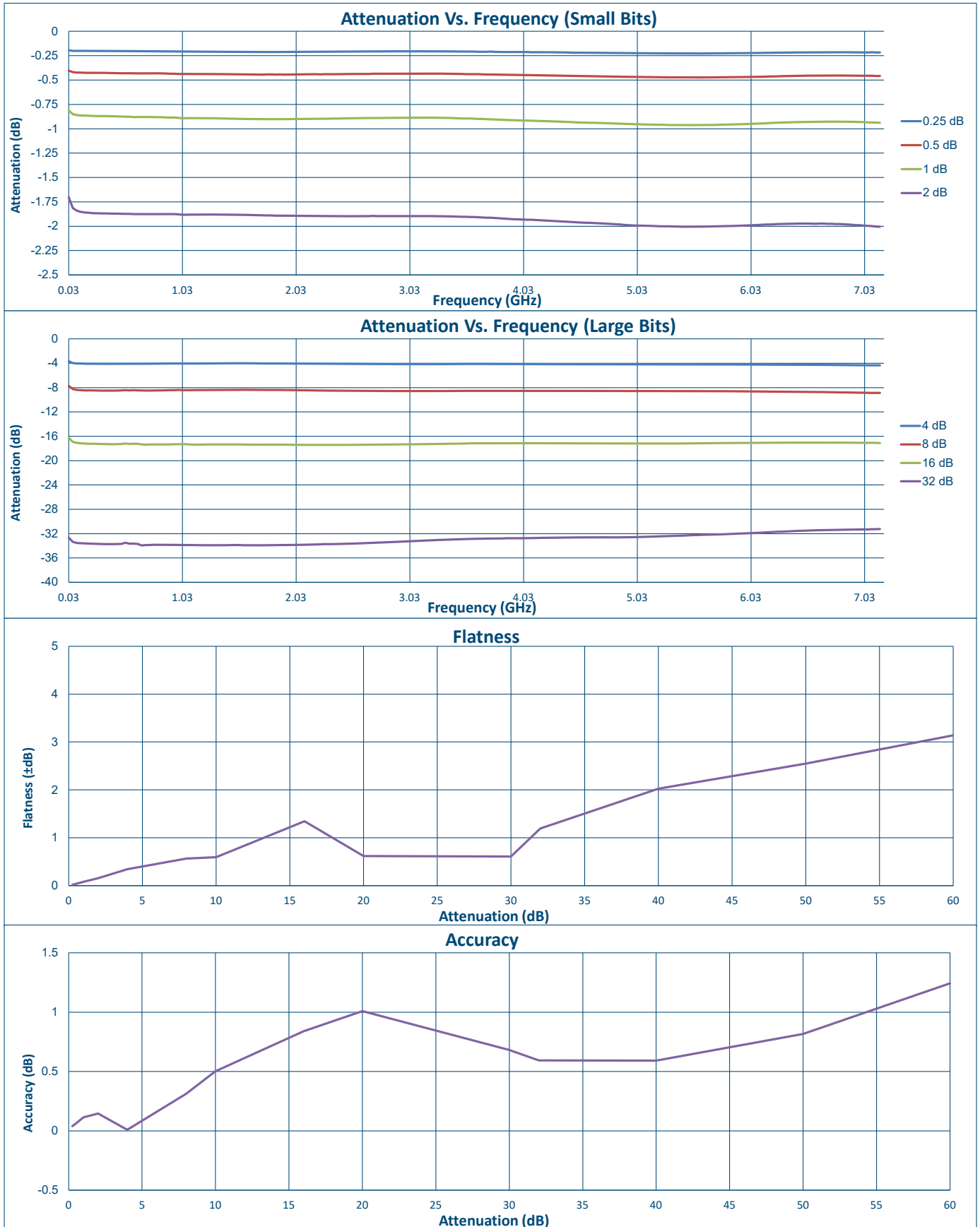
Programmed Attenuation	Attenuation	Flatness	Accuracy of Attenuation
dB	dB	±dB	dB
5.00	5.44	0.32	0.44
10.00	10.57	0.47	0.57
15.00	15.55	0.44	0.55
20.00	20.57	0.37	0.57
25.00	25.49	0.37	0.49
30.00	30.35	0.37	0.35
35.00	35.12	0.37	0.12
40.00	39.95	0.38	-0.05
45.00	44.73	0.46	-0.27
50.00	49.62	0.56	-0.38
55.00	54.39	0.81	-0.61
60.00	59.18	1.18	-0.82



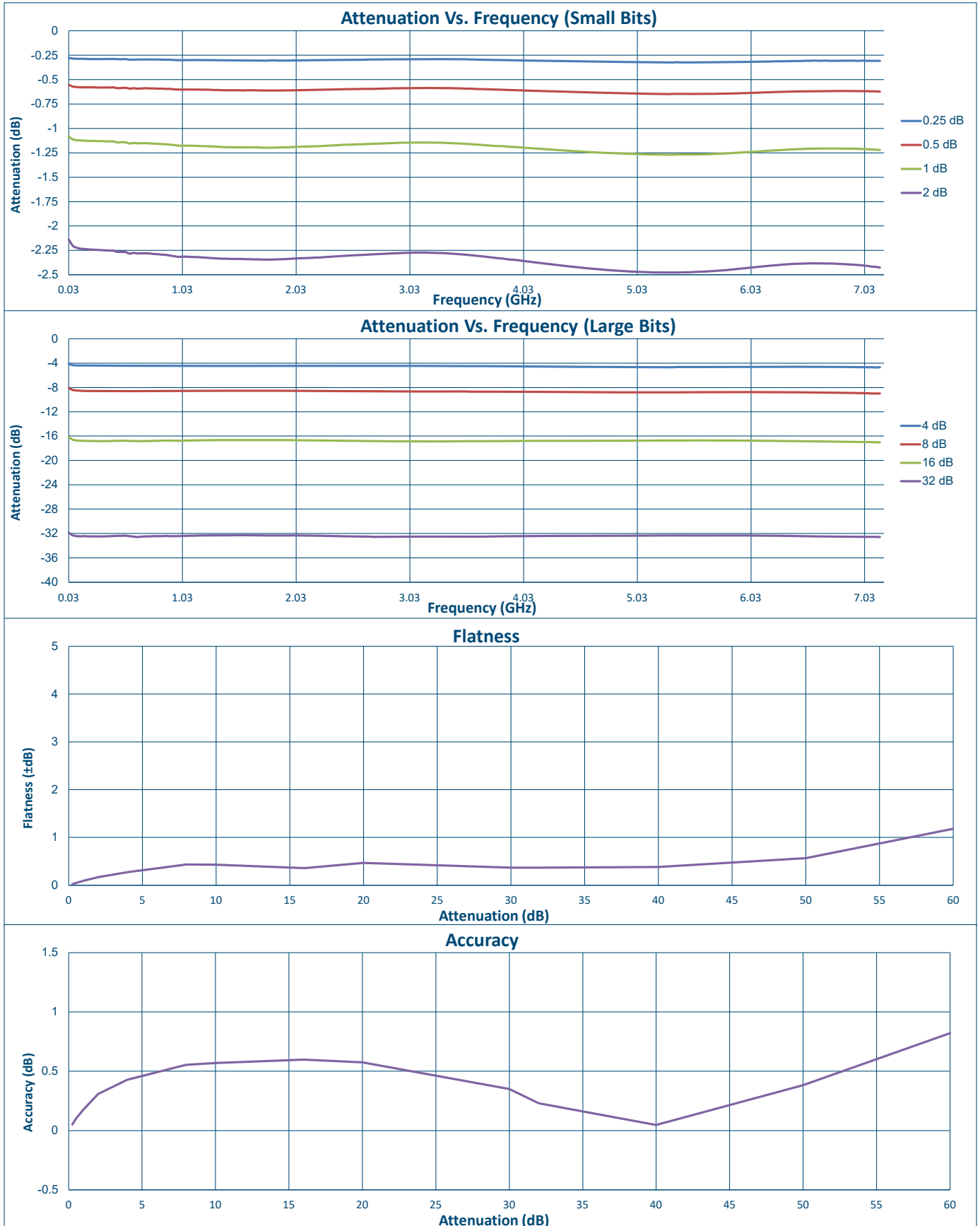
DATA @ +25°C



DATA @ -40°C



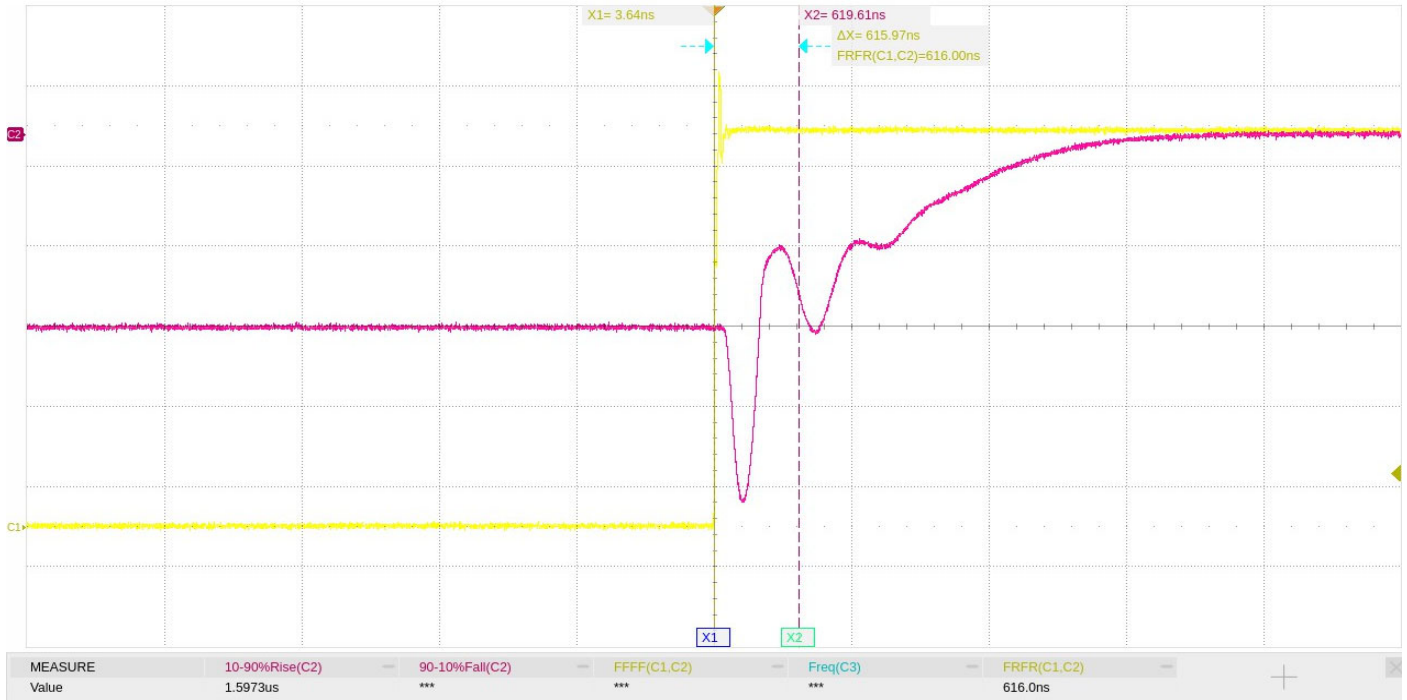
DATA @ +85°C



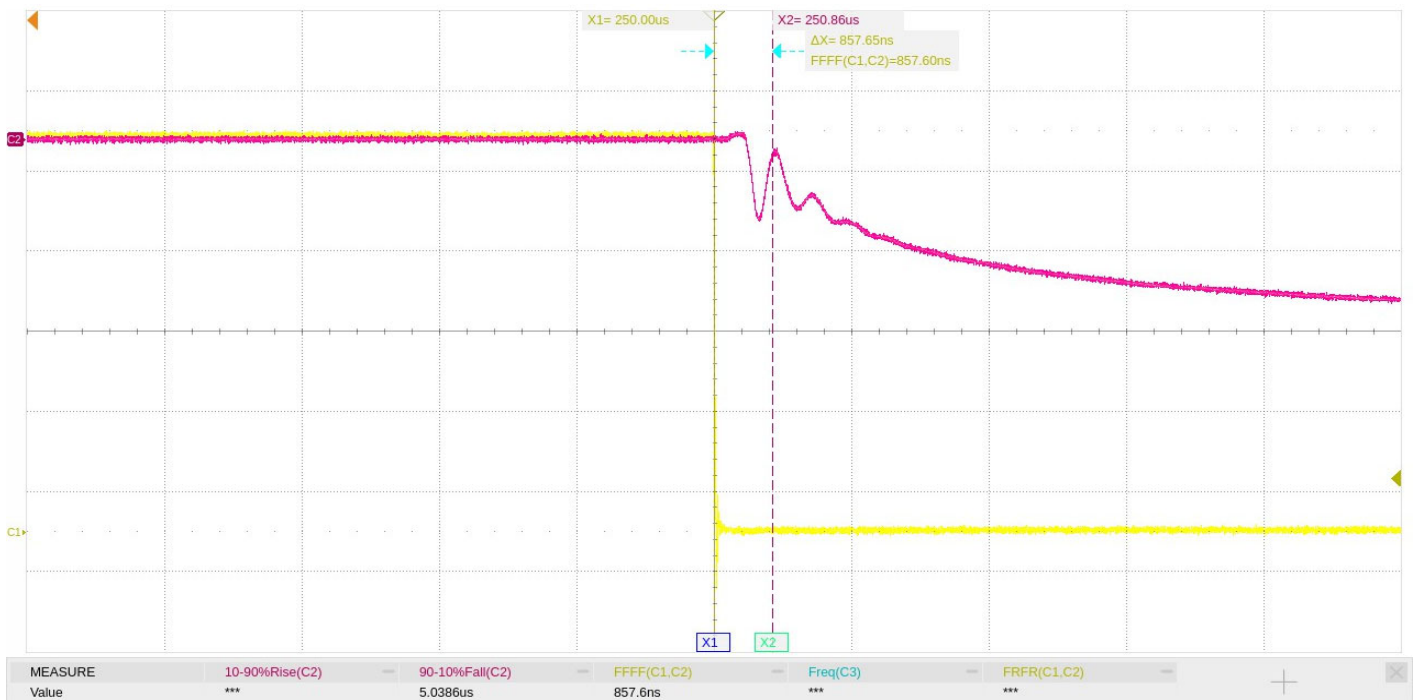
TYPICAL CHARACTERISTICS FOR DTA-30M7D2G-60-CD-1

Switching Speed

ON: 2.2133 us

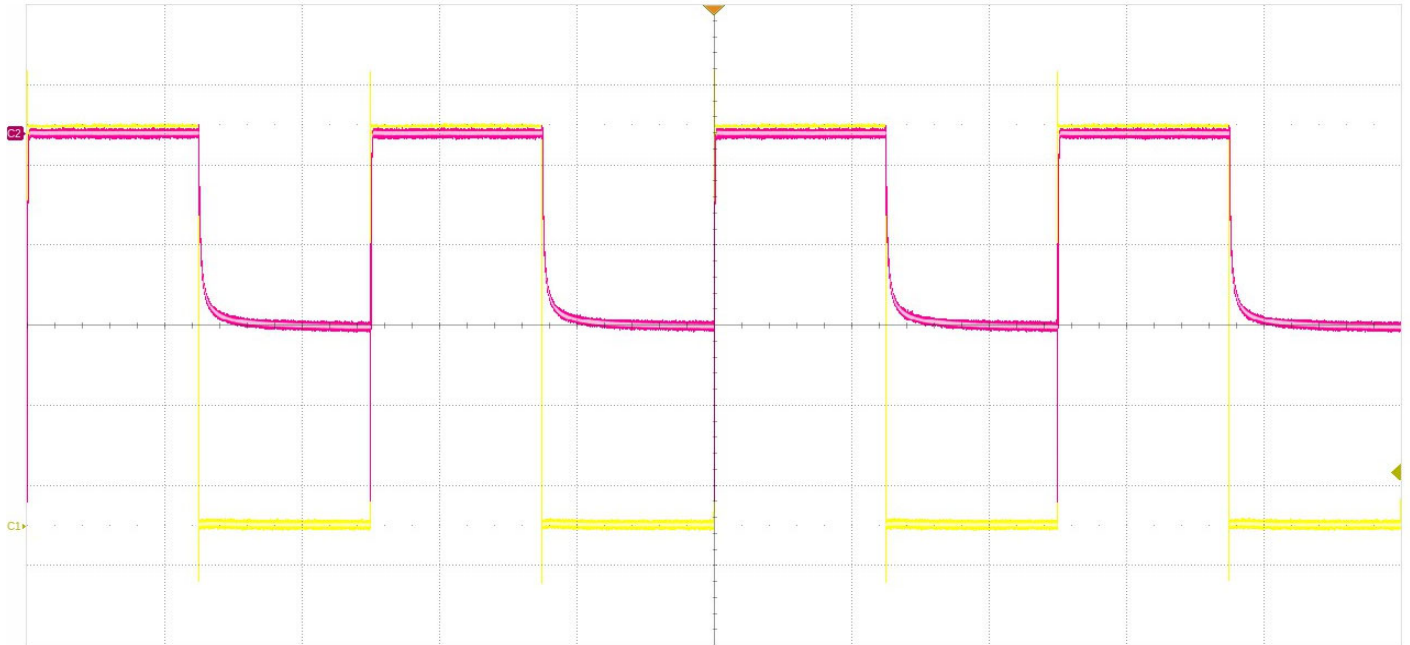


OFF: 5.8961 us



TYPICAL CHARACTERISTICS FOR DTA-30M7D2G-60-CD-1

Full Pulse



High-Power

