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VG-4231CA 30.72MHz HPA
Confirmation data for high temperature

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SEIKO EPSON CORPORATION

TD Production Engineering Department

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Electrical Characteristics Data
【High Temperature】

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Electrical Characteristics Data

Product Name: VG-4231CA HPA
Frequency: 30.72MHz
Quantity: 5 pcs

Measurement condition: Vcc=3.3V , Vc=1.65V, Output Load=15 pF,Ta= +25 +105 +125 deg.C

Ta	sample	SMY [%]	VOH [V]	VOL [V]	tr [ns]	tf [ns]	Icc [mA]	F Vc=0V [ppm]	F Vc=3.3V [ppm]
+25˚C	No.1	49.73	3.10	-0.01	2.16	1.92	1.59	-147.5	169.2
	No.2	49.74	3.10	-0.03	2.08	1.85	1.57	-139.6	167.8
	No.3	49.81	3.10	-0.03	2.09	1.86	1.58	-147.9	174.6
	No.4	49.81	3.10	-0.02	2.09	1.86	1.58	-147.0	173.0
	No.5	49.89	3.10	-0.02	2.07	1.86	1.57	-147.5	176.2
	AVE	49.80	3.10	-0.02	2.10	1.87	1.58	-145.89	172.17
	sigma	0.06	0.00	0.01	0.04	0.03	0.01	3.56	3.56
+105˚C	No.1	49.96	3.10	0.01	2.53	2.28	1.73	-152.8	176.5
	No.2	50.05	3.10	0.01	2.49	2.27	1.71	-142.8	170.9
	No.3	50.11	3.10	0.00	2.54	2.31	1.71	-150.4	180.0
	No.4	50.12	3.10	0.01	2.53	2.31	1.71	-149.2	177.2
	No.5	50.21	3.10	0.01	2.50	2.30	1.70	-150.1	180.8
	AVE	50.09	3.10	0.01	2.52	2.29	1.71	-149.07	177.09
	sigma	0.09	0.00	0.00	0.02	0.02	0.01	3.75	3.91
+125˚C	No.1	50.04	3.09	0.01	2.68	2.43	1.77	-149.4	176.5
	No.2	50.14	3.09	0.01	2.60	2.38	1.74	-142.0	170.7
	No.3	50.16	3.09	0.01	2.64	2.42	1.75	-150.6	181.6
	No.4	50.17	3.09	0.01	2.64	2.41	1.75	-151.4	176.9
	No.5	50.29	3.09	0.01	2.62	2.41	1.74	-150.1	181.5
	AVE	50.16	3.09	0.01	2.64	2.41	1.75	-148.69	177.43
	sigma	0.09	0.00	0.00	0.03	0.02	0.01	3.79	4.50

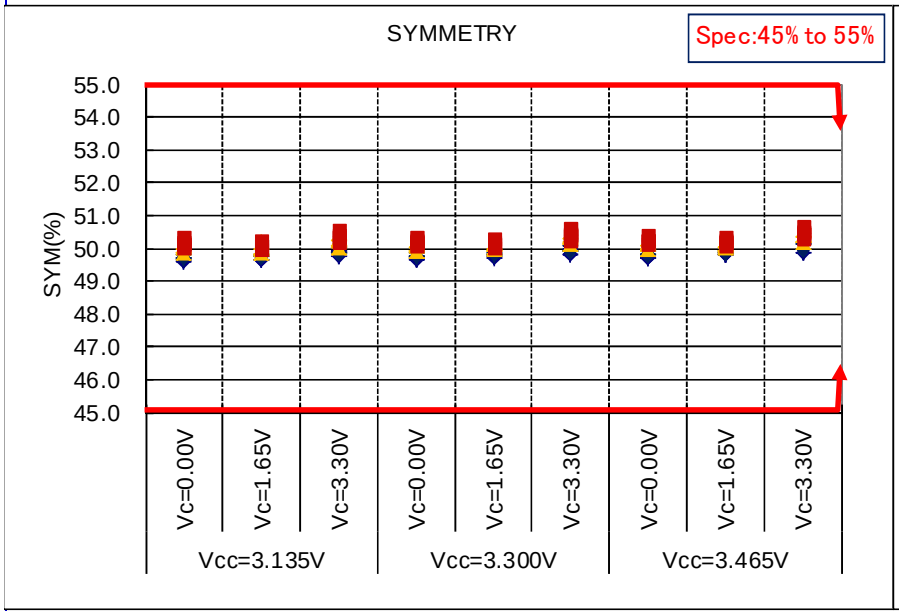
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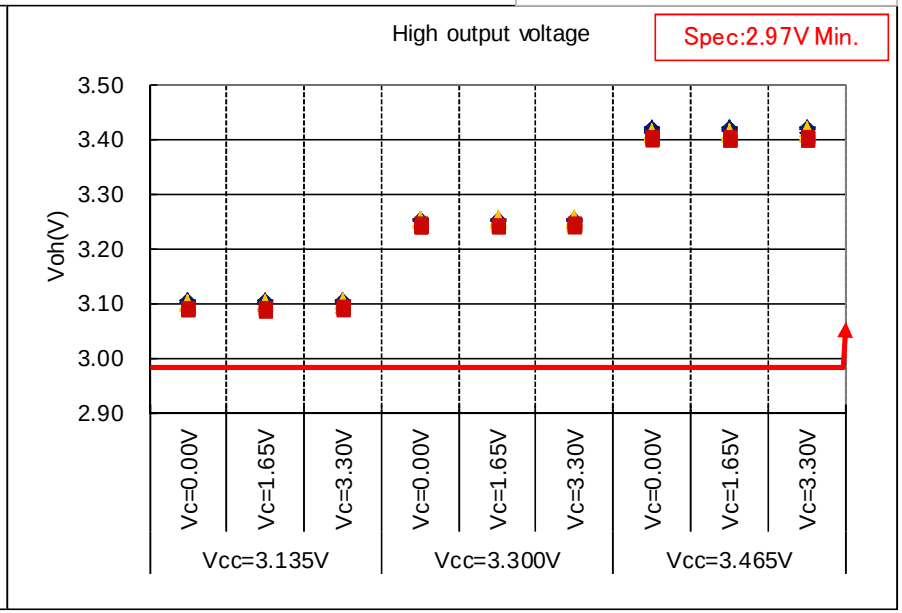
Electrical Characteristics Data

Product Name: VG-4231CA HPA
Frequency: 30.72MHz
Quantity: 5 pcs

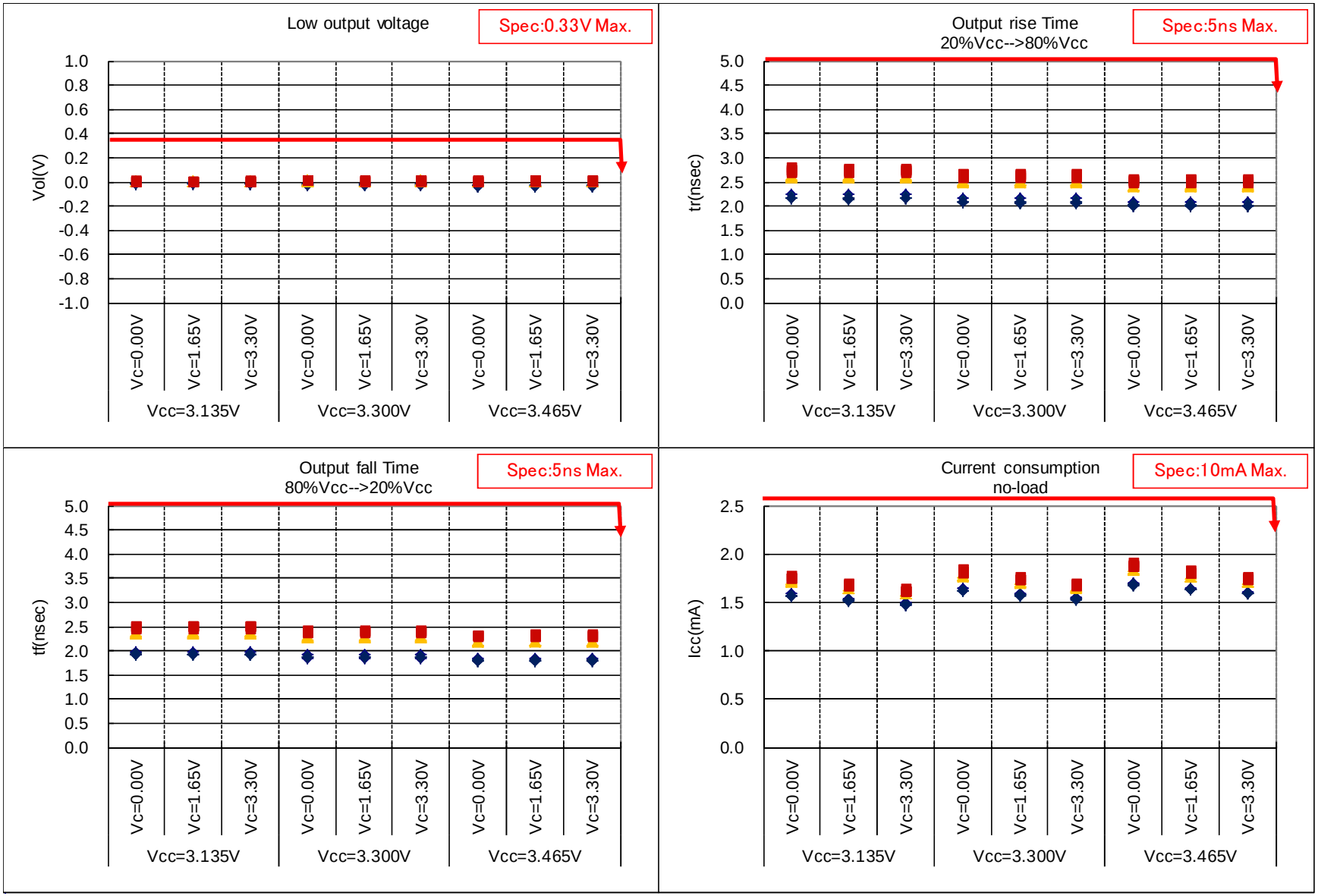
Measurement condition: Output Load=15 pF,Ta= +25 +105 +125 deg.C

Ta = 25˚C
Ta = +105˚C
Ta = +125˚C

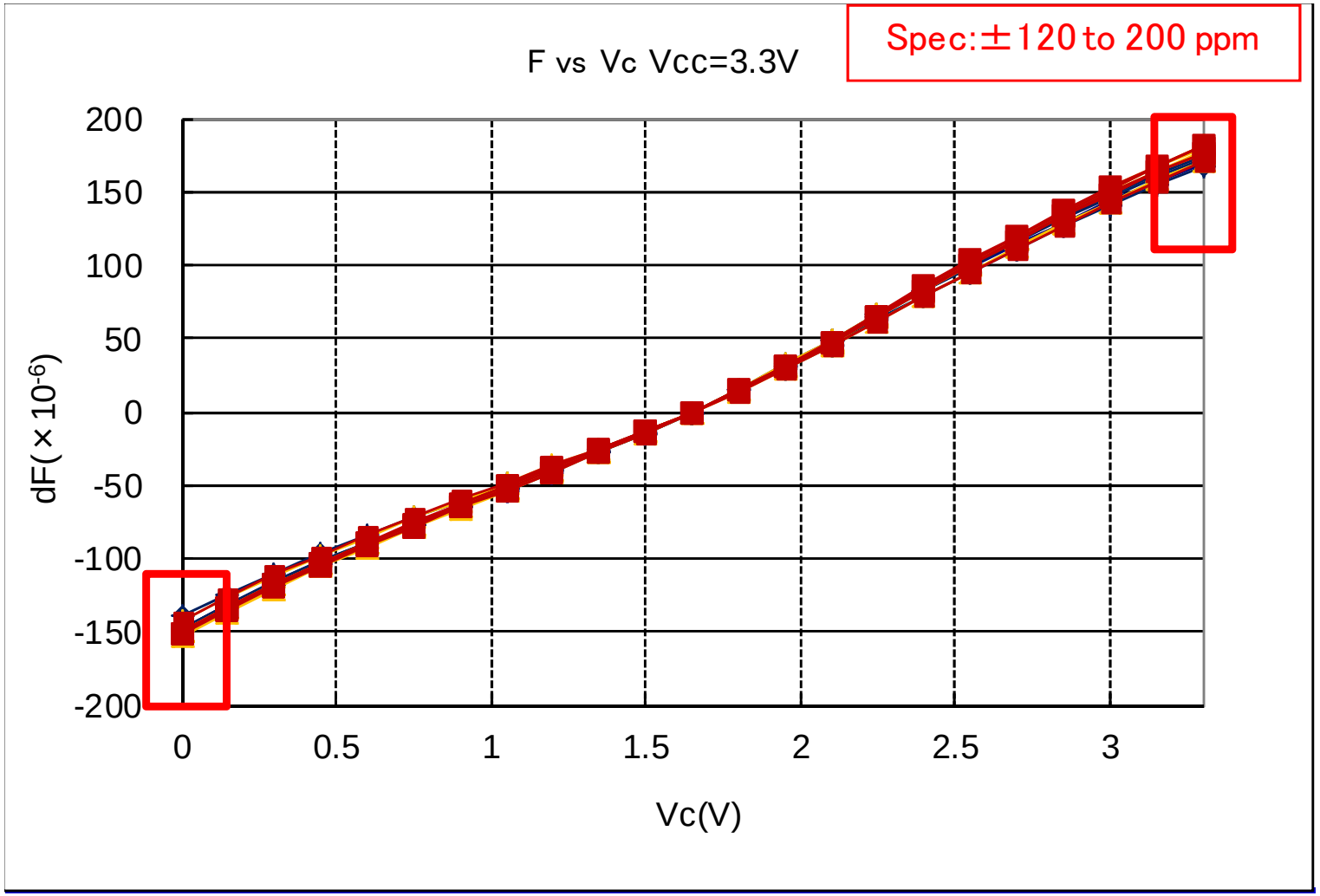




Electrical characteristics data【 High Temperature 】



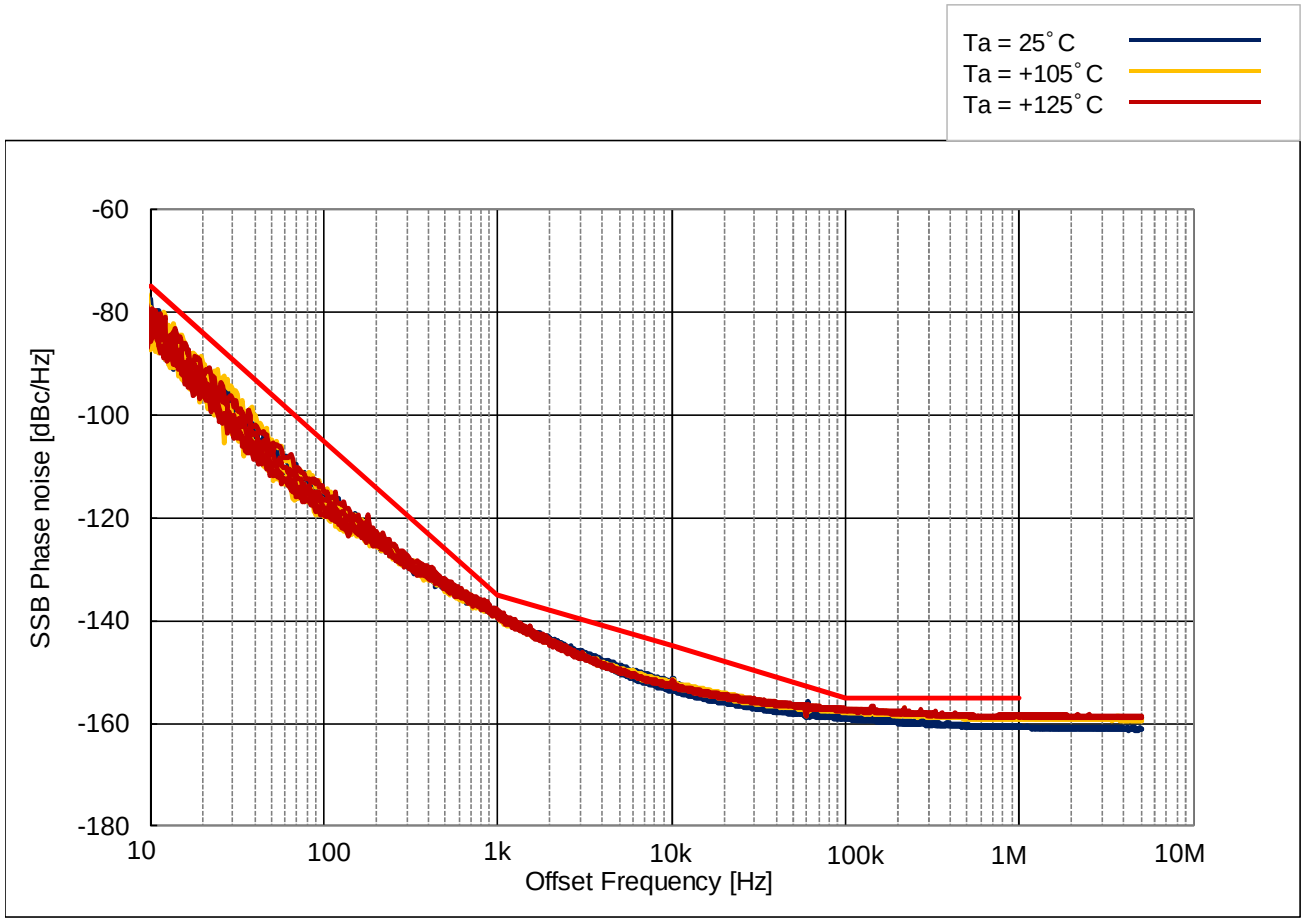
Electrical characteristics data【 High Temperature 】



Phase noise

Product Name: VG-4231CA HPA
Frequency: 30.72MHz
Quantity: 5 pcs

Measurement condition: Vcc=3.3V , Vc=1.65V, Output Load=15 pF,Ta= +25 +105 +125 deg.C



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Phase noise/Phase jitter data

Product Name: VG-4231CA HPA
Frequency: 30.72MHz
Quantity: 5 pcs

Measurement condition: Vcc=3.3V , Vc=1.65V, Output Load=15 pF,Ta= +25 +105 +125 deg.C

Phase noise / Phase jitter

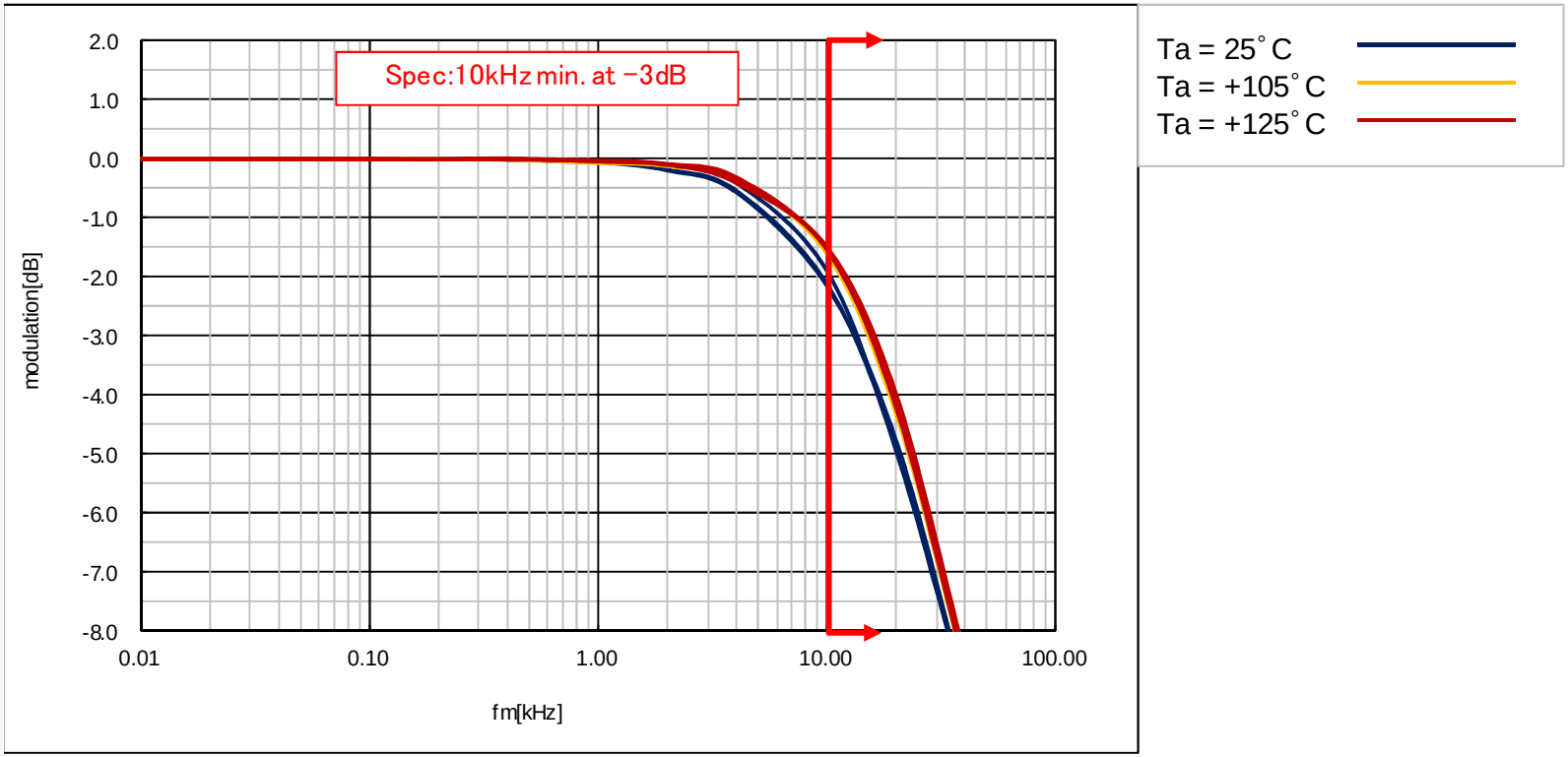
Ta	sample	Offset Frequency [Hz]						
		10	100	1k	10k	100k	1M	12k to 20M
Spec		-75	-105	-135	-145	-155	-155	1
+25˚C	No.1	-82.4	-118.0	-139.8	-152.5	-159.2	-160.8	0.29
	No.2	-83.0	-116.0	-138.7	-152.6	-158.9	-160.8	0.29
	No.3	-83.0	-118.0	-138.9	-152.6	-159.1	-160.8	0.29
	No.4	-80.5	-114.9	-138.5	-151.7	-158.8	-160.8	0.29
	No.5	-79.5	-117.2	-138.9	-151.2	-158.3	-160.5	0.30
	AVE	-81.7	-116.8	-139.0	-152.1	-158.9	-160.8	0.3
	sigma	1.6	1.4	0.5	0.7	0.4	0.1	0.0
+105˚C	No.1	-80.6	-119.2	-139.1	-152.0	-157.8	-159.1	0.36
	No.2	-87.4	-118.4	-138.9	-151.4	-157.6	-159.1	0.35
	No.3	-86.2	-119.7	-139.2	-151.4	-157.7	-159.1	0.36
	No.4	-79.7	-114.9	-138.4	-152.0	-157.5	-158.9	0.36
	No.5	-82.3	-118.2	-138.8	-152.1	-157.2	-158.7	0.37
	AVE	-83.2	-118.1	-138.9	-151.8	-157.6	-159.0	0.4
	sigma	3.4	1.9	0.3	0.3	0.2	0.2	0.0
+125˚C	No.1	-85.3	-118.1	-139.1	-152.1	-157.6	-158.7	0.37
	No.2	-82.7	-118.3	-138.7	-151.7	-157.2	-158.6	0.37
	No.3	-84.1	-119.0	-139.4	-151.7	-157.3	-158.7	0.37
	No.4	-80.0	-115.1	-138.3	-152.0	-157.2	-158.6	0.38
	No.5	-81.7	-116.6	-138.0	-152.0	-157.1	-158.3	0.39
	AVE	-82.8	-117.4	-138.7	-151.9	-157.3	-158.6	0.4
	sigma	2.1	1.6	0.6	0.2	0.2	0.2	0.0

unit : dBc/Hz unit : ps

Modulation BW

Product Name: VG-4231CA HPA
Frequency: 30.72MHz
Quantity: 3 pcs

Measurement condition: Vcc=3.3V , Vc=0V,Ta= +25 +105 +125 deg.C



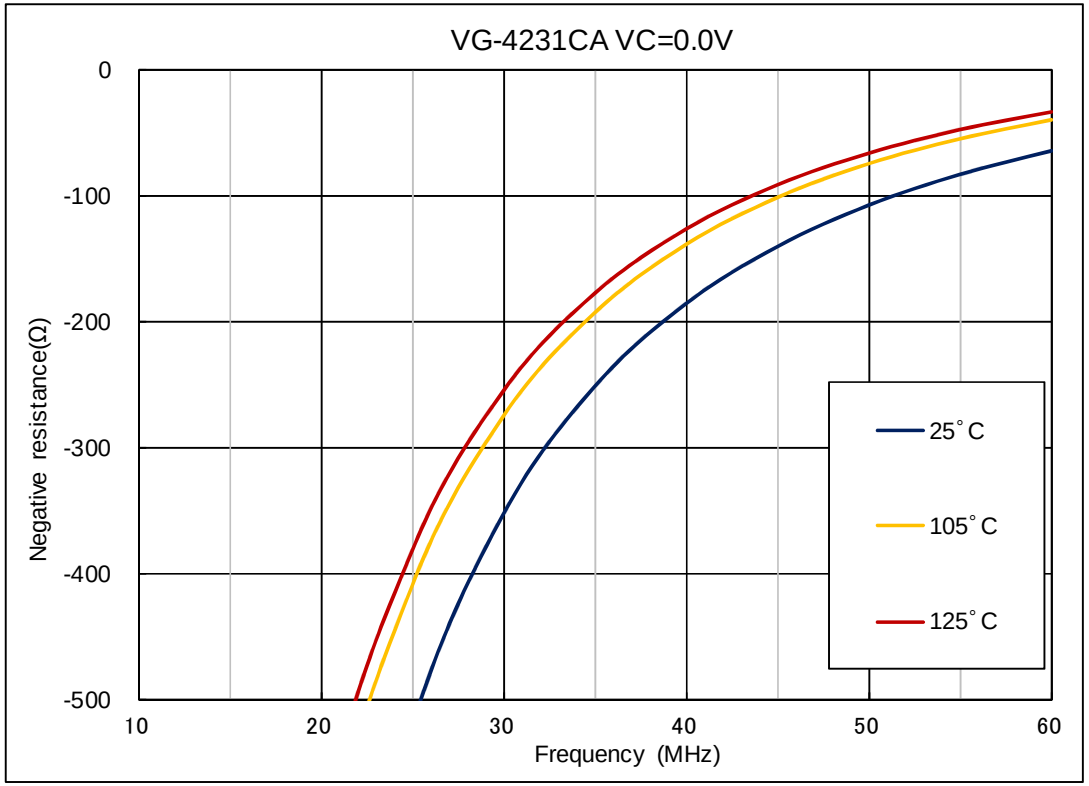
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Negative Resistance Data

Product Name: VG-4231CA HPA

Measurement condition: Vcc=3.3V , Vc=0V,Ta= +25 +105 +125 deg.C

Ta	25˚C	105˚C	125˚C
Freq. [MHz]	Rs [Ω]	Rs [Ω]	Rs [Ω]
5	-5433	-4904	-4708
10	-2685	-2255	-2140
15	-1394	-1124	-1059
20	-819	-647	-606
25	-521	-409	-381
30	-352	-275	-255
35	-251	-193	-177
40	-186	-139	-127
45	-140	-101	-91
50	-108	-75	-66
55	-83	-55	-48
60	-64	-40	-34



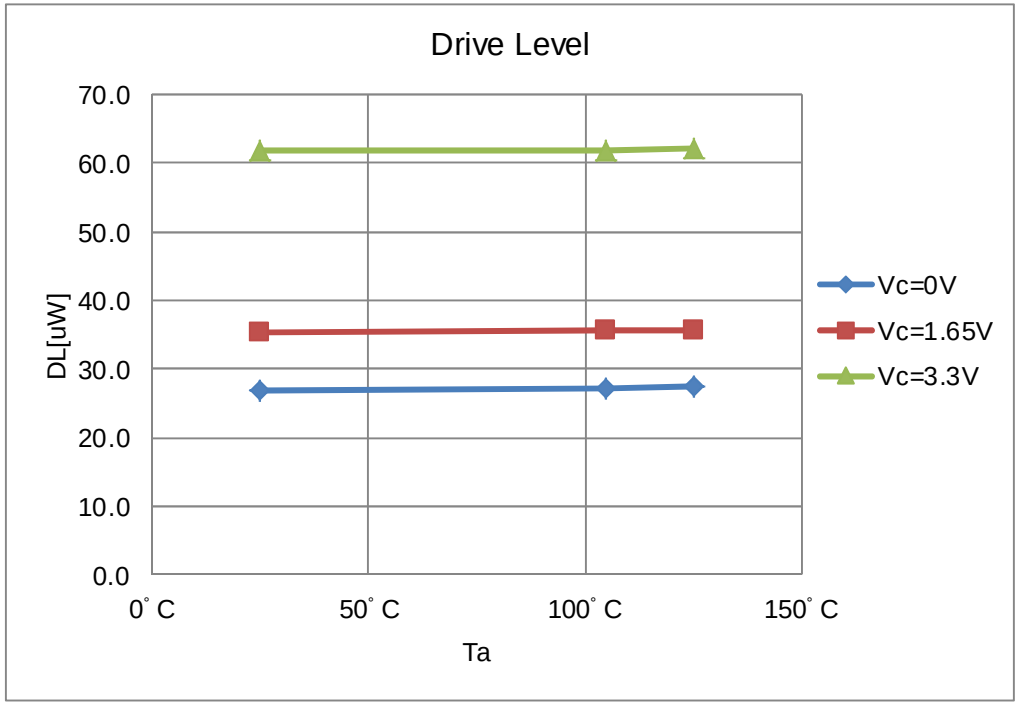
Drive Level Data

Product Name: VG-4231CA HPA

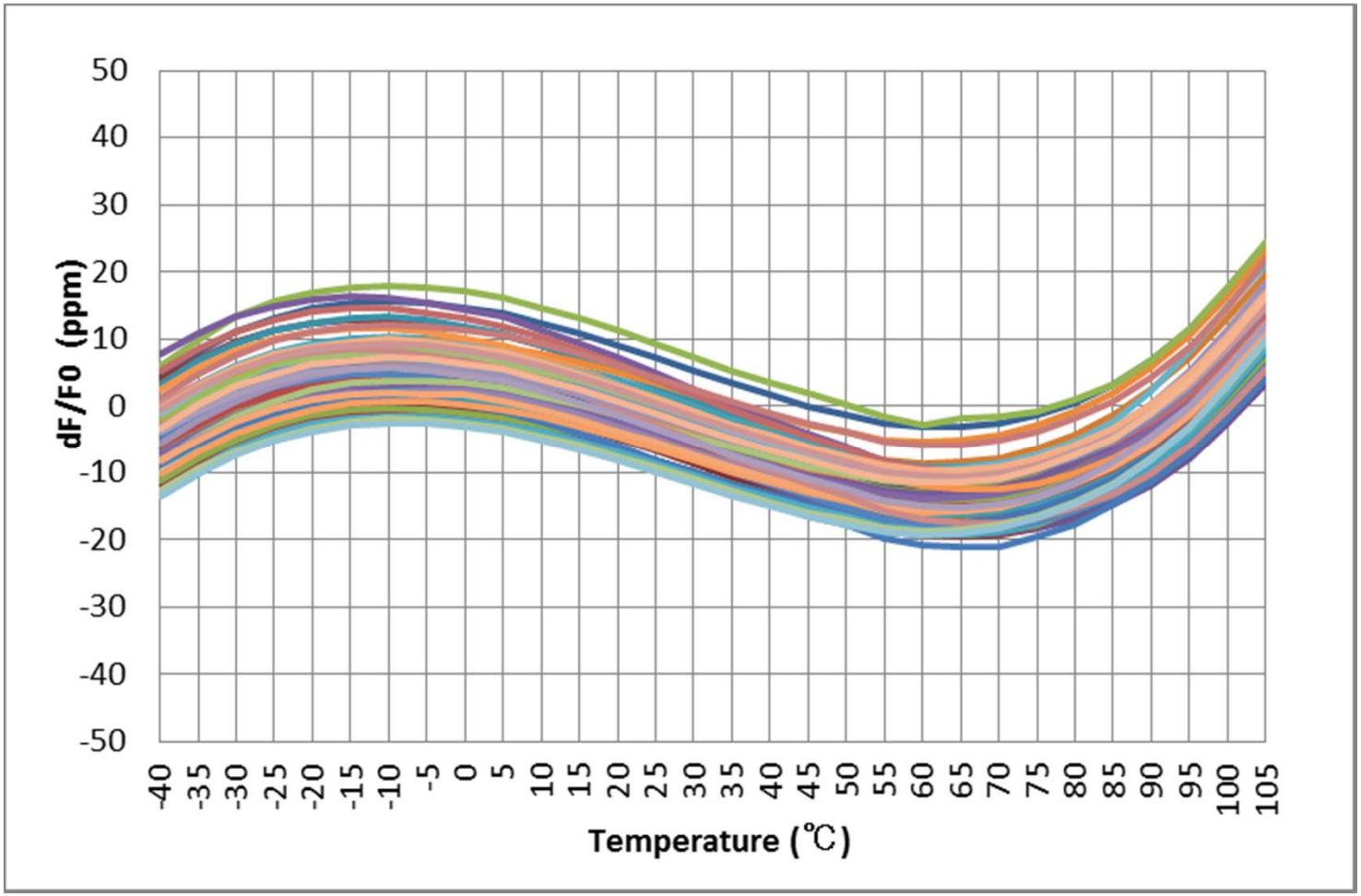
Measurement condition: Vcc=3.3V , Vc=0V,Ta= +25 +105 +125 deg.C

	Vc=0V	Vc=1.65V	Vc=3.3V
25˚ C	27.0	35.2	61.7
105˚ C	27.3	35.5	61.9
125˚ C	27.4	35.6	62.0

unit : uW



Frequency Temperature data



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