Electrical characteristics test data

(TG-5035CG 26MHz Vcc=2.8V)

SEIKO EPSON CORPORATION TD Production Engineering Department		
Approve	check	Draw
H.koike		H.takanashi

Measurement item

EPSON TOYOCOM

- Freq. tolerance at 25℃ ・・・ P.3
- Supply voltage stability ・・・ P.3
- Current consumption ・・・ P.3
- Output voltage level and waveform ・・・ P.3, P.10
- Freq. stability over operation temperature range ・・・ P.4 to P.5
- Freq. slop of perturbations ・・・ P.6 to P.7
- Static temperature hysteresis ・・・ P.8
- Load sensitivity ・・・ P.9
- Harmonic ・・・ P.10
- Start up time ・・・ P.11
- SSB phase noise ・・・ P.12 to P.13
- R.A.V.for τ=0.1s ・・・ P.14
- G sensitivity within 30Hz ～ 1.5kHz ・・・ P.14
- TCXO freq. drift rate test at 25℃ ・・・ P.15 to P.16
- TCXO freq. drift rate over operation temperature (25℃→85℃→-40℃→25℃) test ・・・ P.17 to P.18

TEST DATA

Order No.: 8A-CT-10142

Type.: TG-5035CG Freq.: 26 MHz

Room Temp. +25.0±2 ℃ ☑

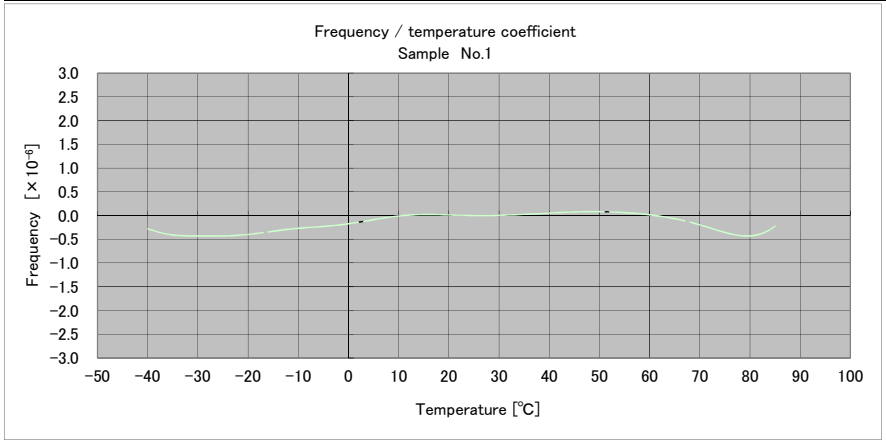
Humidity. 50.0±10 %RH ☑

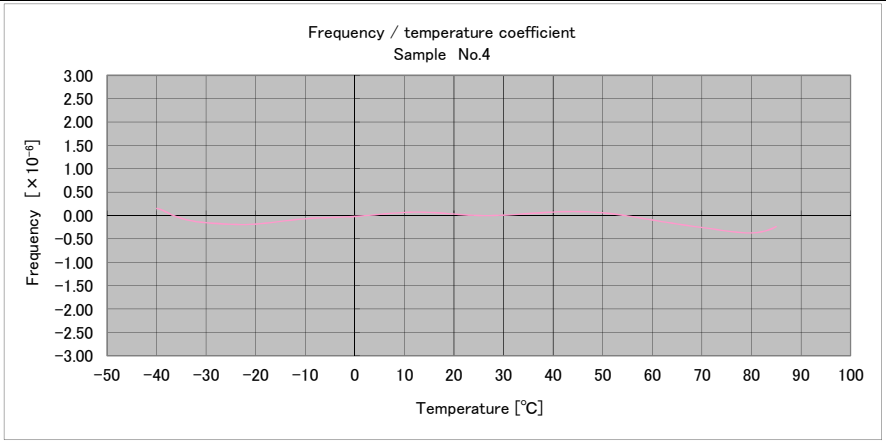
ENG.	INSP.
H.Takanashi	T.Shimizu

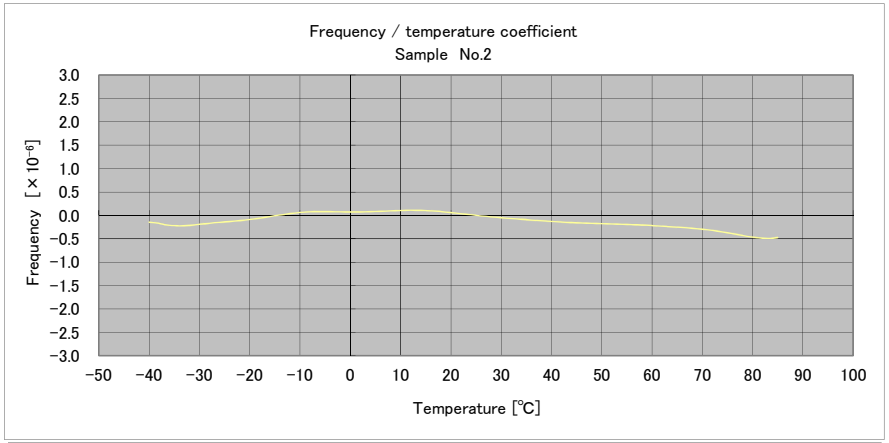
SERIAL	CURRENT	OUT PUT	FREQUENCY STABILITY												
	DRAIN	LEVEL	FREQUENCY	vs.VOLT		vs. TEMPERATURE									
	at +2.8 V	at +2.8 V	TOLERANCE	(1x 10^{-6})		(1x 10^{-6})									
No.	(mA)	(Vp-p)	(1x 10^{-6})	+2.52 V	+3.08 V	-40 ℃	-30 ℃	-20 ℃	-10 ℃	+25 ℃	+50 ℃	+60 ℃	+70 ℃	+85 ℃
1	1.05	1.08	+0.06	-0.01	+0.01	-0.28	-0.43	-0.40	-0.28	±0	+0.08	+0.02	-0.20	-0.22
2	1.06	1.08	-0.02	-0.01	+0.01	-0.15	-0.19	-0.09	+0.05	±0	-0.18	-0.22	-0.30	-0.47
3	1.05	1.08	+0.02	-0.01	+0.01	-0.29	-0.35	-0.24	-0.11	±0	+0.13	-0.06	-0.24	-0.37
4	1.07	1.08	+0.06	-0.01	+0.01	+0.15	-0.15	-0.18	-0.08	±0	+0.06	-0.10	-0.26	-0.24
5	1.06	1.08	+0.23	-0.00	+0.01	+0.24	+0.06	+0.03	+0.08	±0	-0.06	-0.09	-0.13	-0.17
6	1.06	1.08	-0.08	-0.01	+0.01	-0.23	-0.02	+0.02	+0.06	±0	+0.20	+0.01	-0.11	-0.11
7	1.07	1.08	-0.01	-0.00	+0.01	-0.32	-0.28	-0.18	-0.07	±0	-0.01	-0.06	-0.14	-0.13
8	1.07	1.08	-0.08	-0.00	+0.01	-0.09	+0.08	+0.16	+0.19	±0	+0.04	-0.03	-0.20	-0.19
9	1.06	1.08	-0.03	-0.01	+0.01	-0.37	-0.21	-0.08	-0.00	±0	-0.05	-0.04	-0.05	-0.14
10	1.06	1.08	-0.08	-0.01	+0.00	-0.22	-0.34	-0.34	-0.24	±0	+0.04	+0.00	-0.07	-0.22
Spec.	1.5 Max.	0.8 Min.	±2.0 Max.	±0.1 Max.		±0.5 Max. / -30℃～+85℃ ±3.0 Max. / -40℃～-30℃									

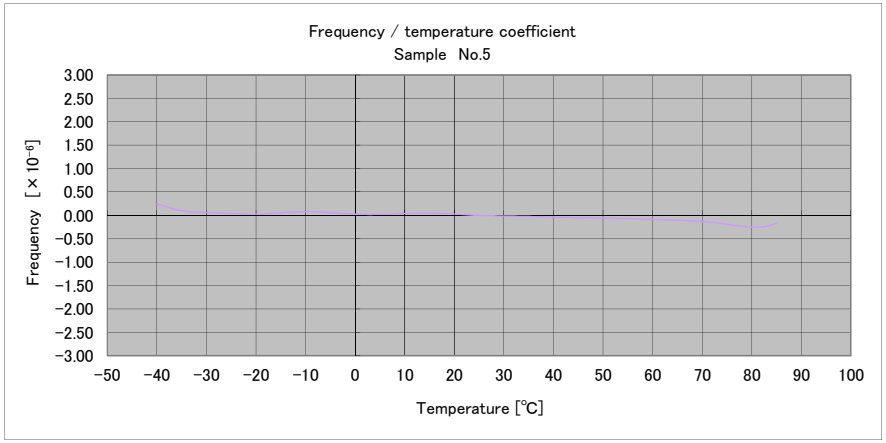
Epson Toyocom Corp.

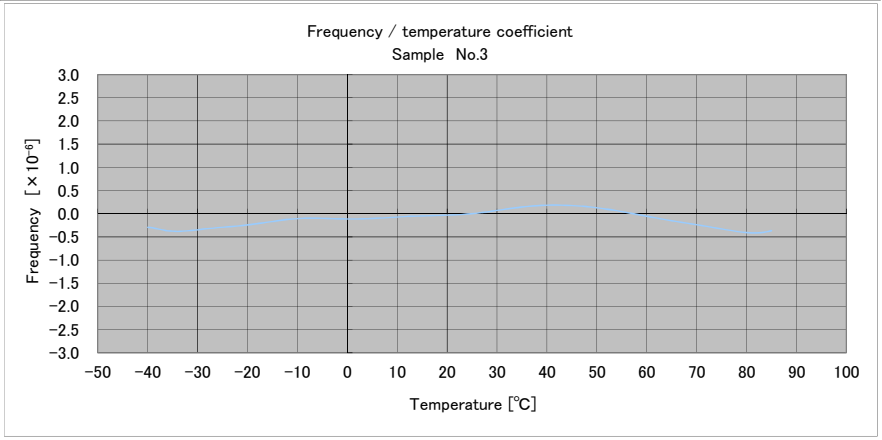
Frequency stability over operation temperature range





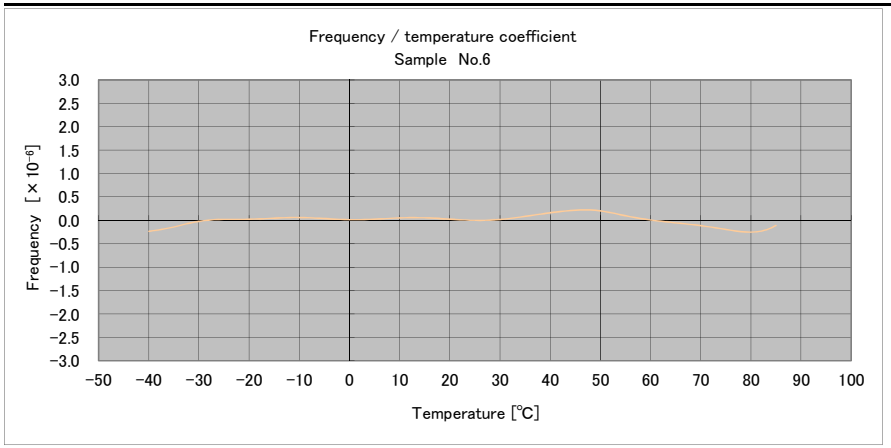


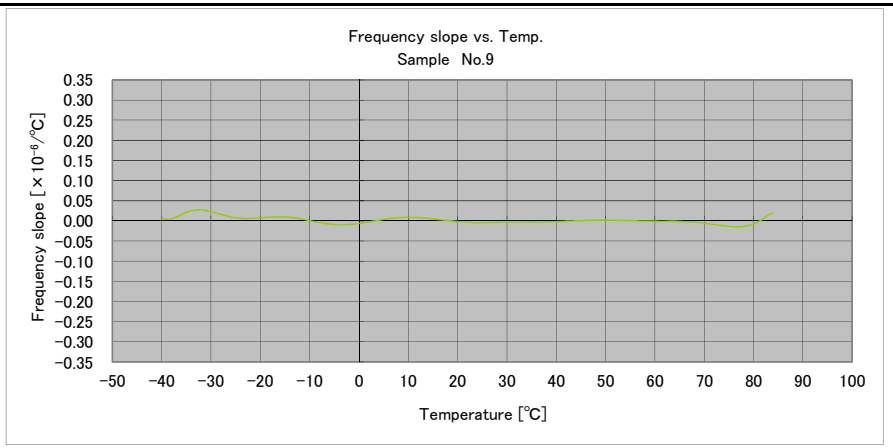


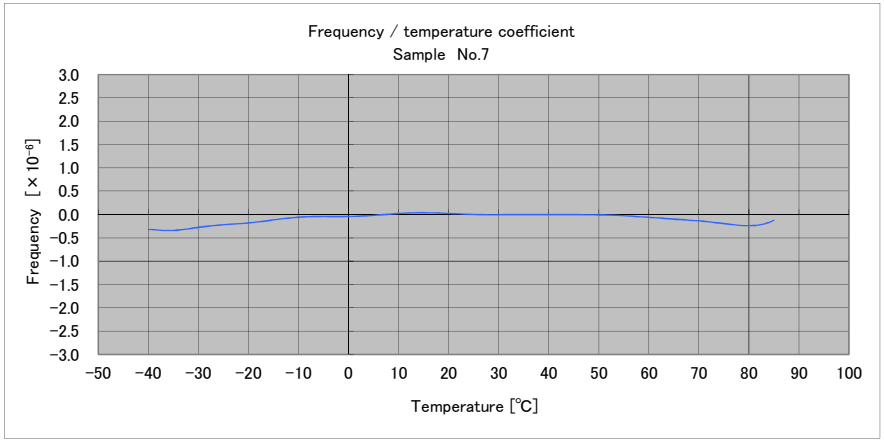


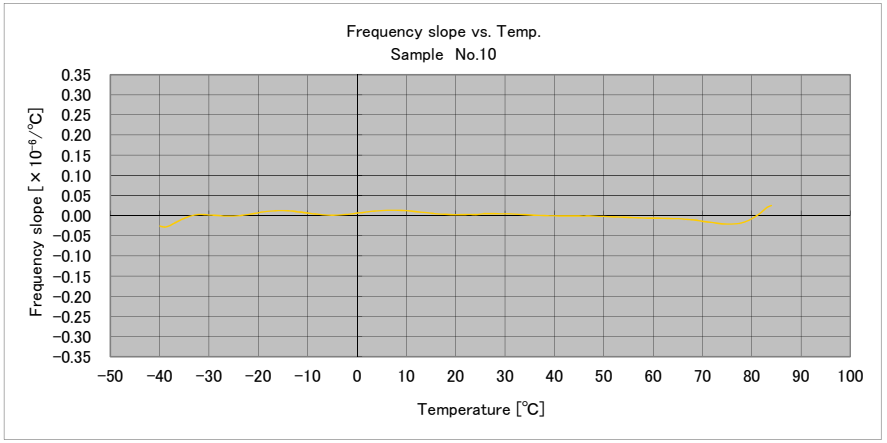
Confidential

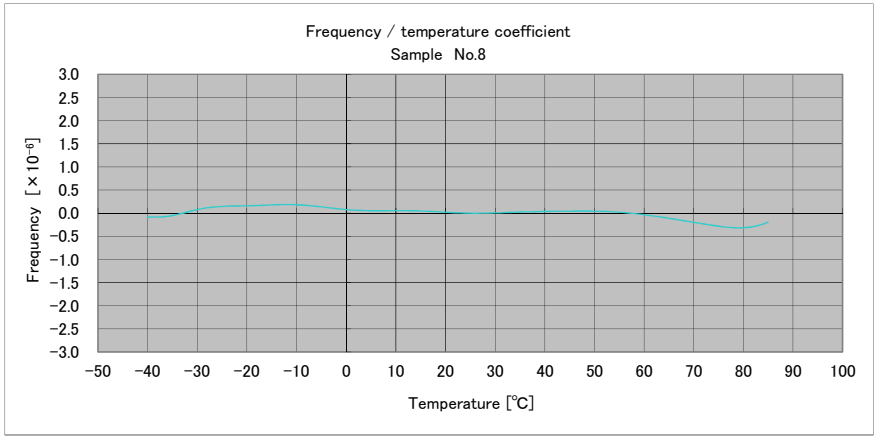
Frequency stability over operation temperature range





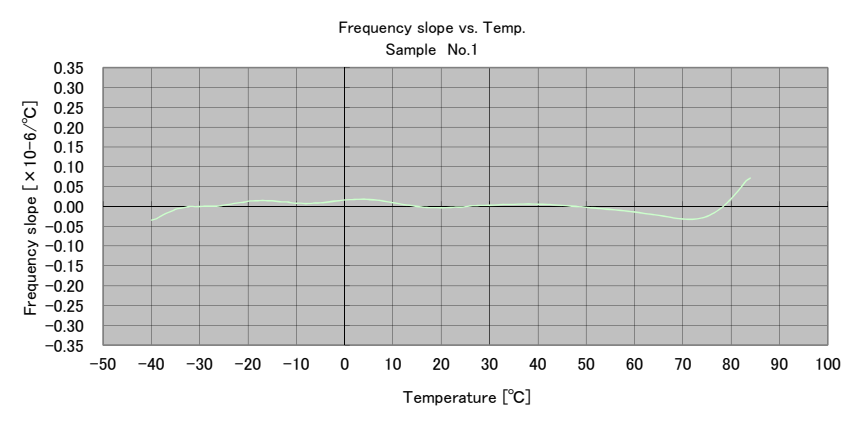


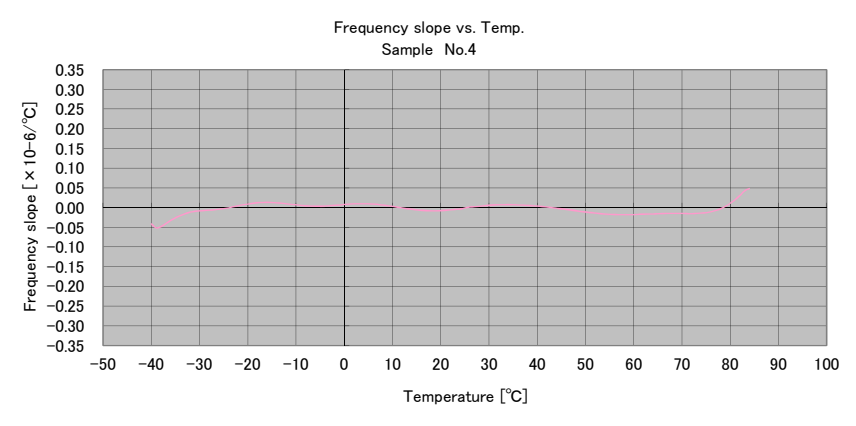


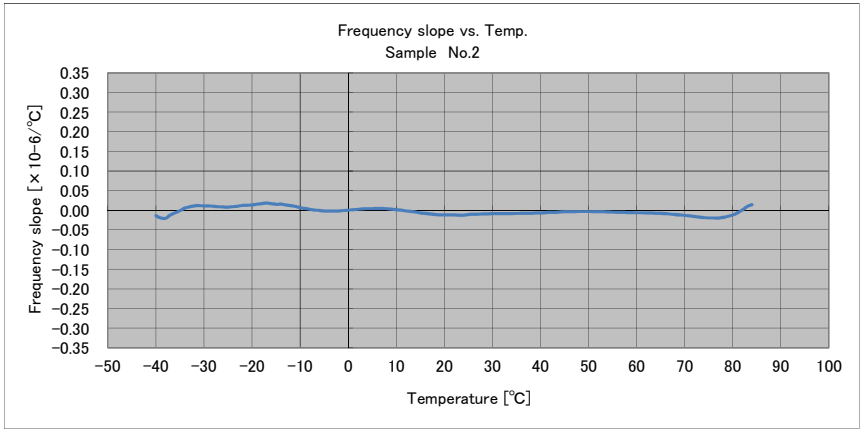


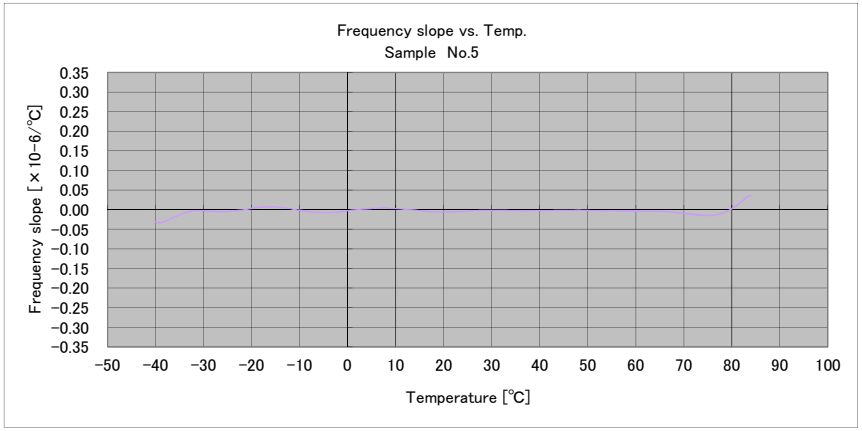
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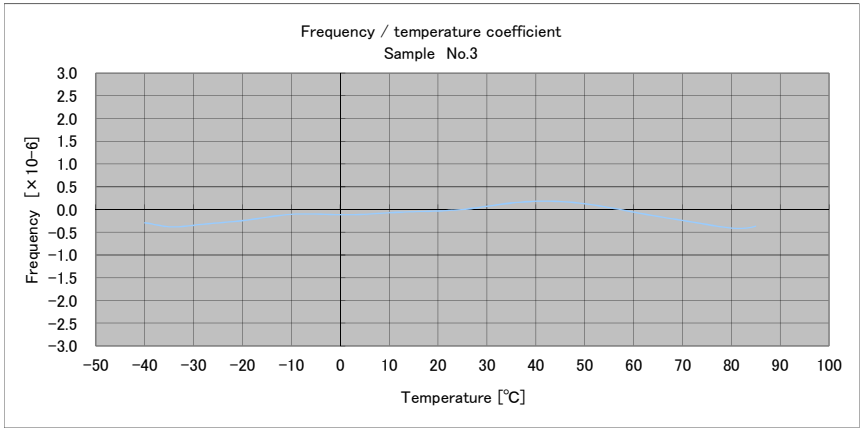
Frequency slope of perturbations





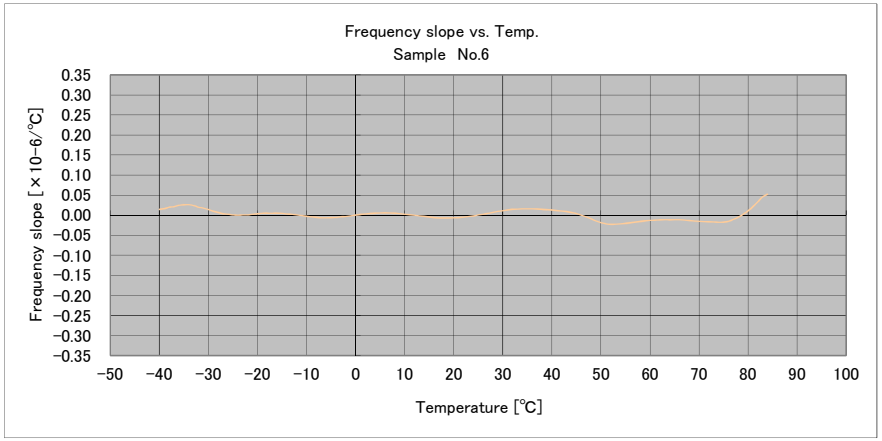


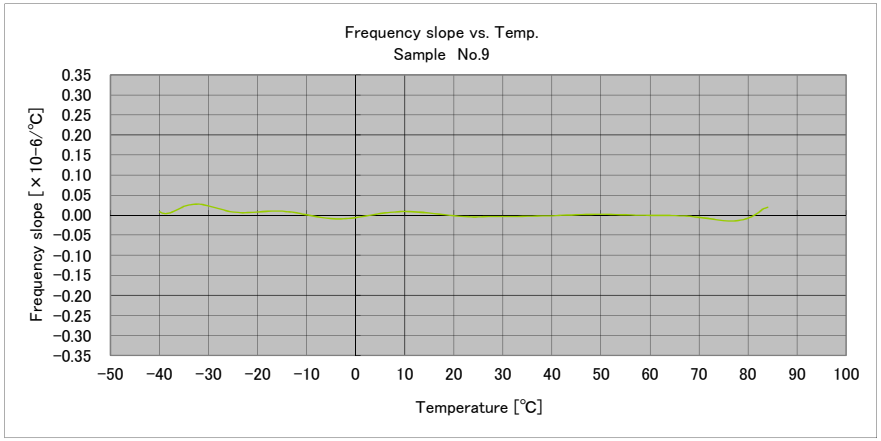


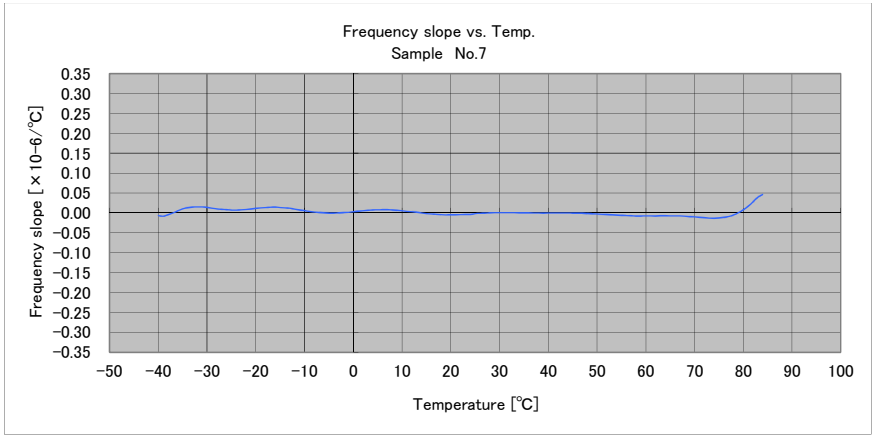


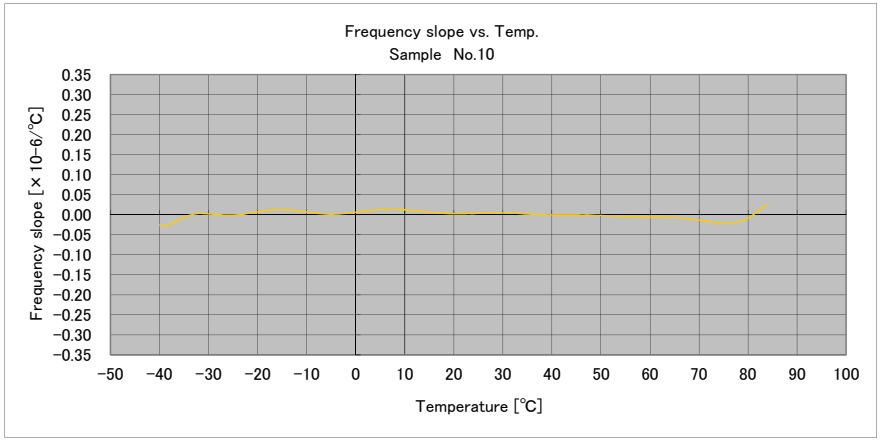
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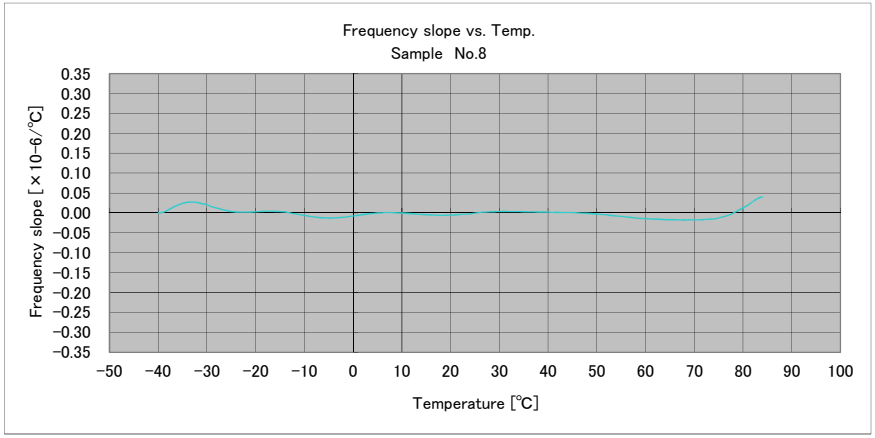
Frequency slope of perturbations











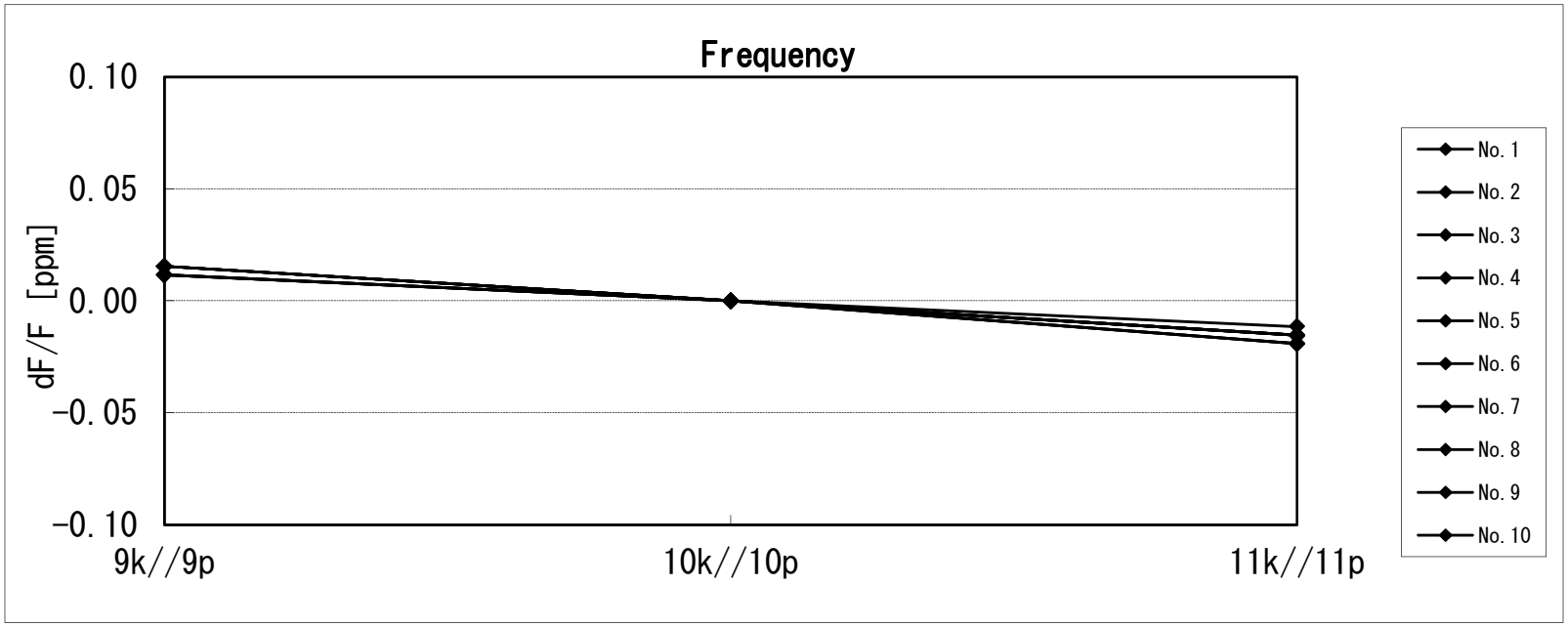
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Static temperature hysteresis

<condtion>

-30℃→+25℃(f1)→+85℃→+25℃(f2)

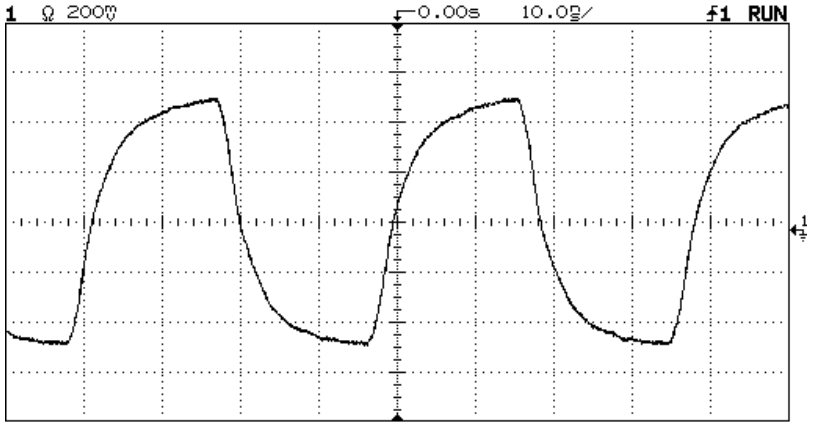
No.	1	2	3	4	5	6	7	8	9	10
f2-f1 $\times 10^{-6}$	+0.03	+0.06	+0.05	+0.03	+0.05	0.00	+0.03	+0.02	+0.02	+0.05



	ΔF/F(ppm)									
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
9k//9p	+0.02	+0.01	+0.02	+0.01	+0.02	+0.02	+0.01	+0.02	+0.02	+0.01
10k//10p	±0.00	±0.00	±0.00	±0.00	±0.00	±0.00	±0.00	±0.00	±0.00	±0.00
11k//11p	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02

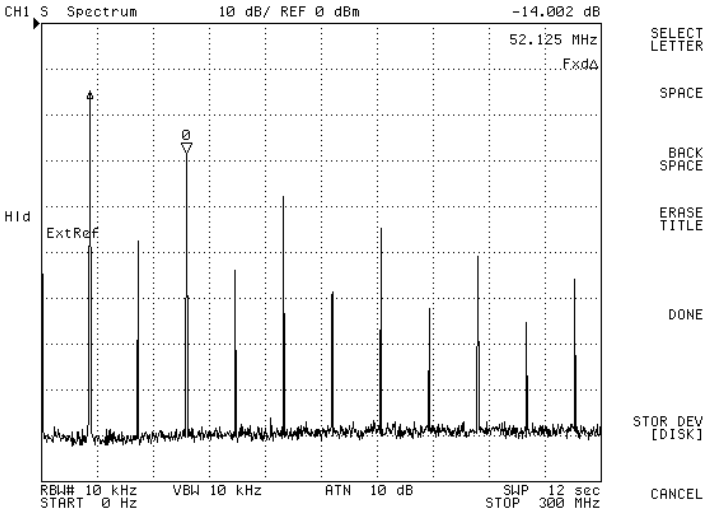
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Output waveform



Harmonic

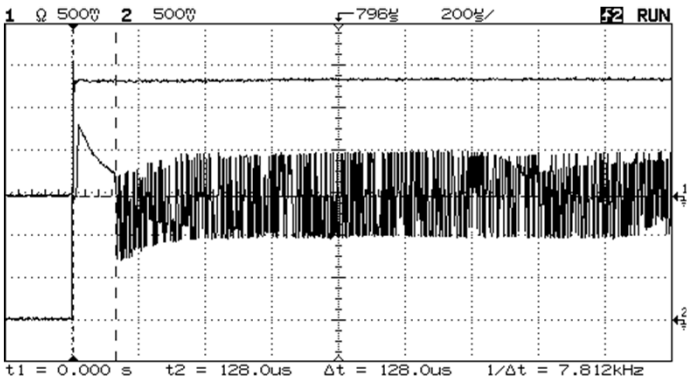
No.	Harmonic(dBc)
1	-14.0
2	-14.0
3	-14.0
4	-14.0
5	-14.0
6	-13.9
7	-13.9
8	-13.9
9	-13.9
10	-13.8



Output Level

No.	Time(ms)
1	0.12
2	0.12
3	0.12
4	0.12
5	0.12
6	0.12
7	0.12
8	0.12
9	0.12
10	0.12

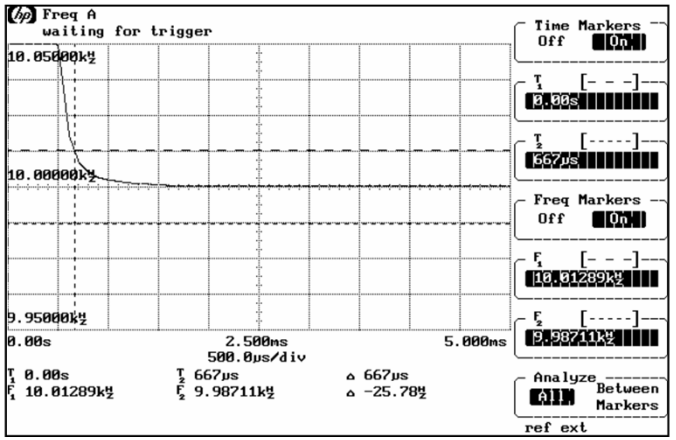
No.1 90%



Frequency

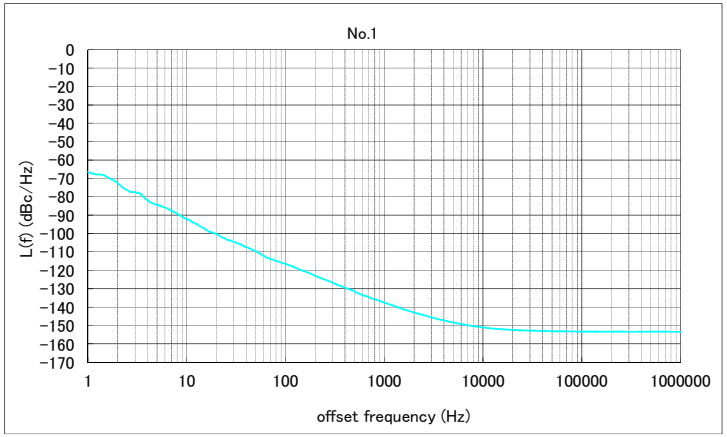
No.	Time(ms)
1	0.67
2	0.64
3	0.64
4	0.64
5	0.67
6	0.61
7	0.61
8	0.61
9	0.61
10	0.62

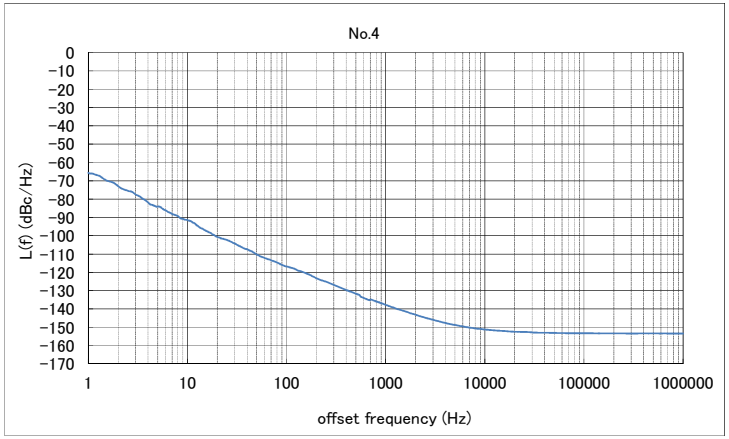
No.1 ±0.5ppm

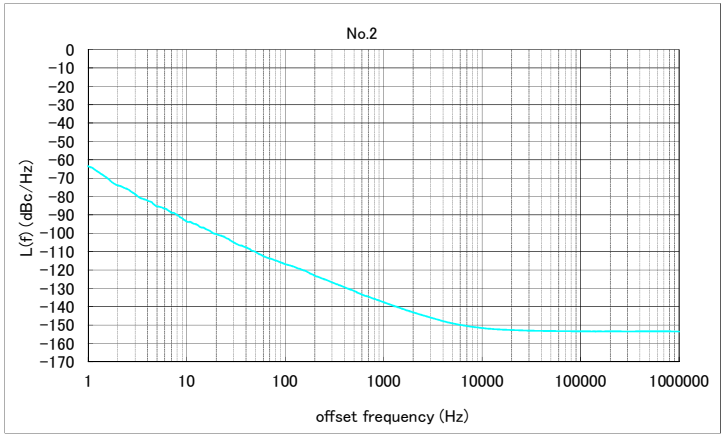


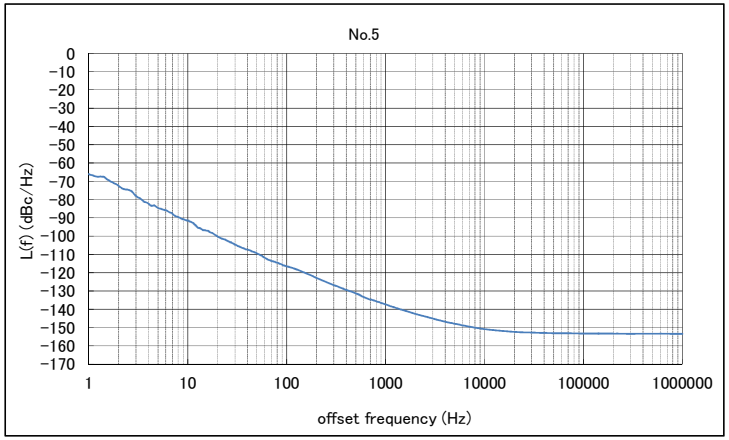
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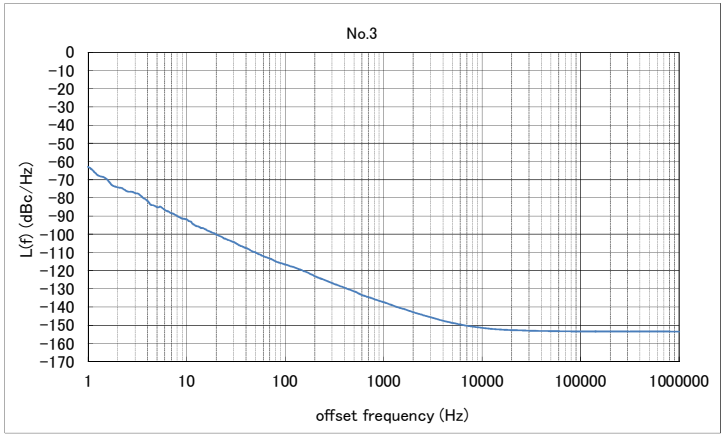
SSB Phase noise







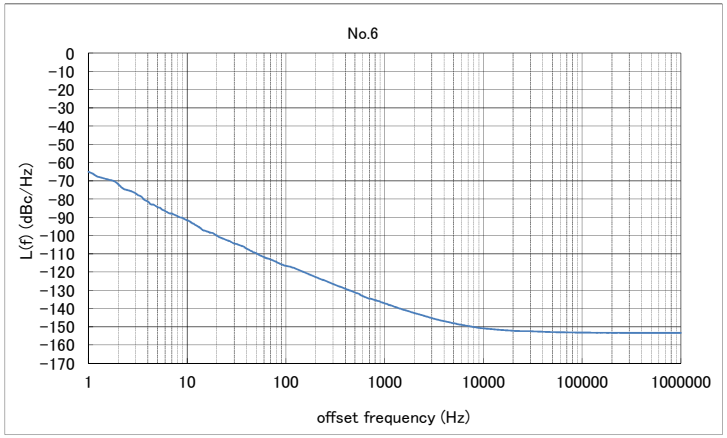


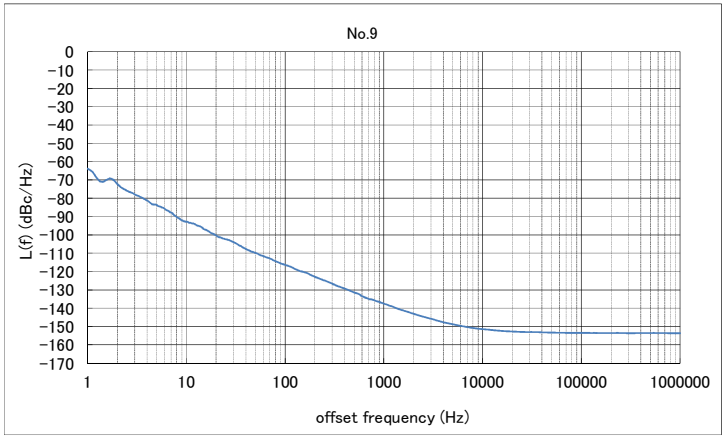


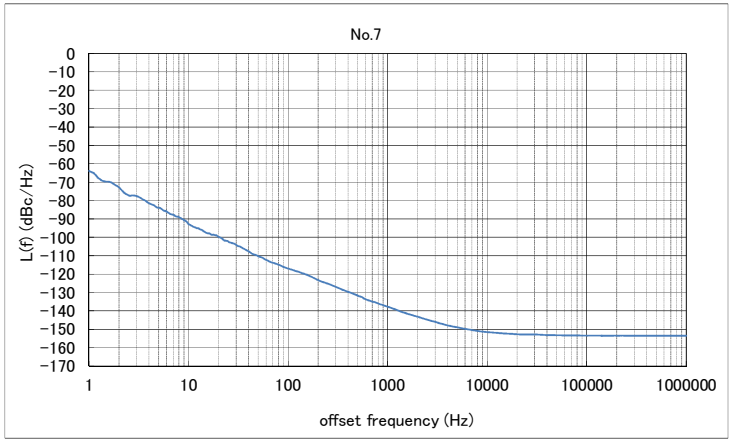
Freq.	No.1	No.2	No.3	No.4	No.5
1Hz	-66.5	-63.4	-63.0	-65.7	-66.1
10Hz	-92.3	-93.5	-91.8	-91.5	-91.5
100Hz	-116.5	-116.8	-116.6	-116.8	-116.5
1kHz	-137.6	-137.5	-137.3	-137.7	-137.3
10kHz	-151.1	-151.6	-151.4	-151.2	-150.9
100kHz	-153.3	-153.4	-153.4	-153.3	-153.3
1MHz	-153.5	-153.5	-153.5	-153.5	-153.5

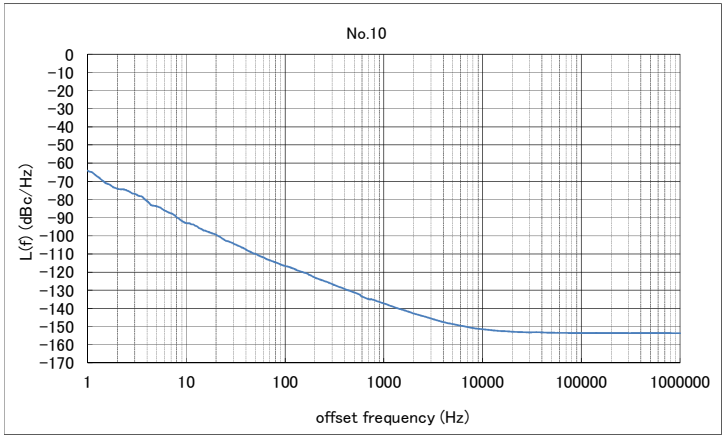
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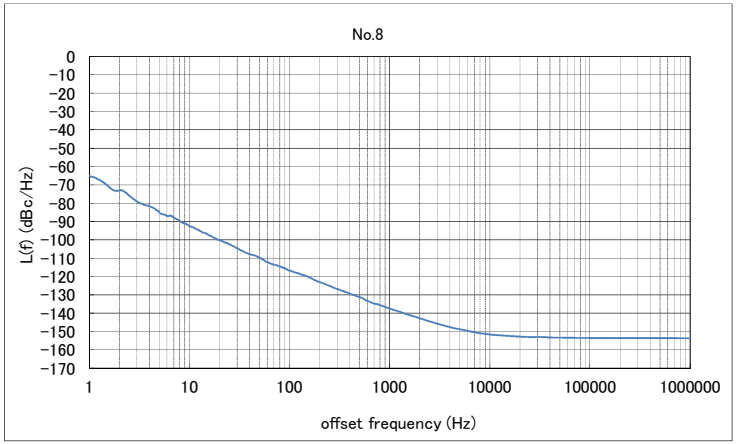
SSB Phase noise











Freq.	No.6	No.7	No.8	No.9	No.10
1Hz	-65.0	-63.9	-65.1	-63.9	-64.1
10Hz	-91.7	-92.8	-92.4	-92.9	-93.0
100Hz	-116.6	-117.0	-116.7	-116.4	-116.6
1kHz	-137.2	-137.8	-137.4	-137.5	-137.3
10kHz	-150.9	-151.6	-151.6	-151.4	-151.4
100kHz	-153.2	-153.5	-153.5	-153.5	-153.5
1MHz	-153.4	-153.6	-153.6	-153.6	-153.7

Confidential

R.A.V. for τ =0.1s

τ (Sec)	No.1	No.2	No.3	No.4	No.5
0.100	7.50E-11	7.39E-11	5.59E-11	5.98E-11	9.57E-11

τ (Sec)	No.6	No.7	No.8	No.9	No.10
0.100	6.98E-11	8.43E-11	7.99E-11	6.18E-11	6.80E-11

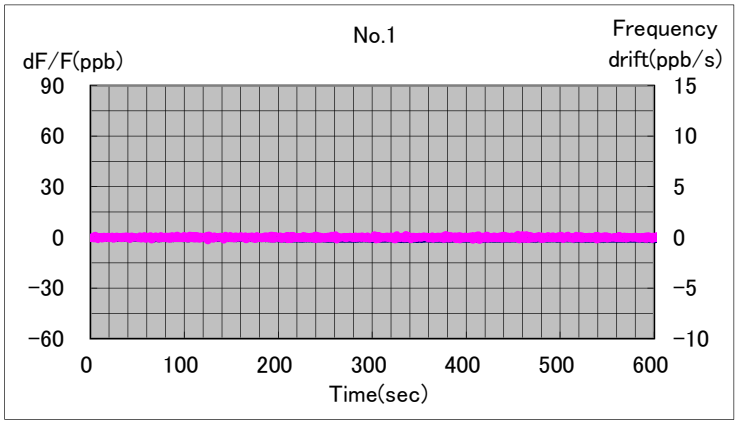
G sensitivity within 30Hz ~ 1.5kHz

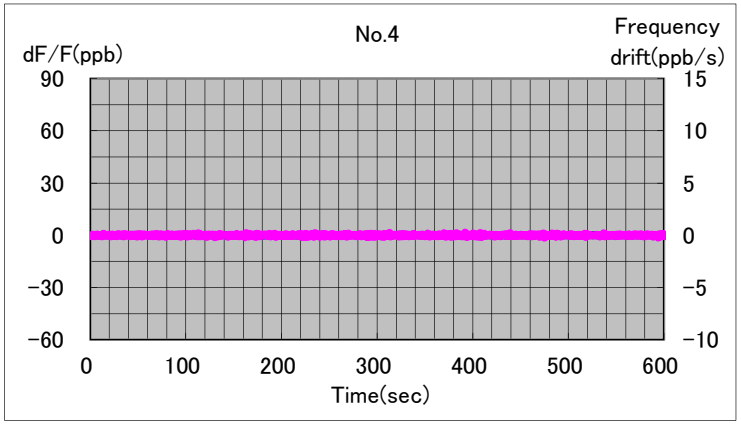
(ppb/g)

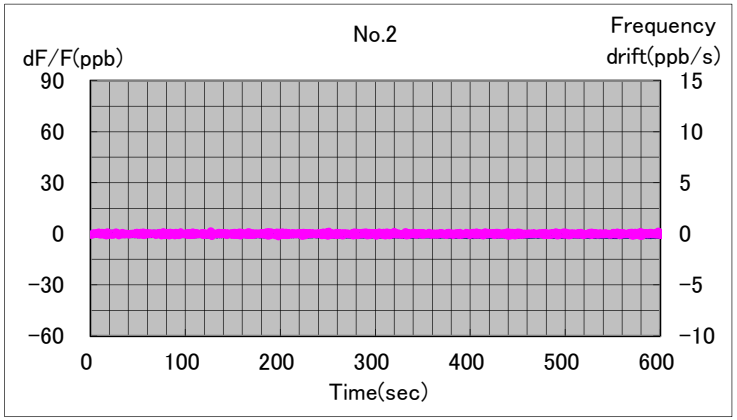
	30Hz	1.5kHz
No. 1	0.32	1.57
No. 2	0.36	1.67

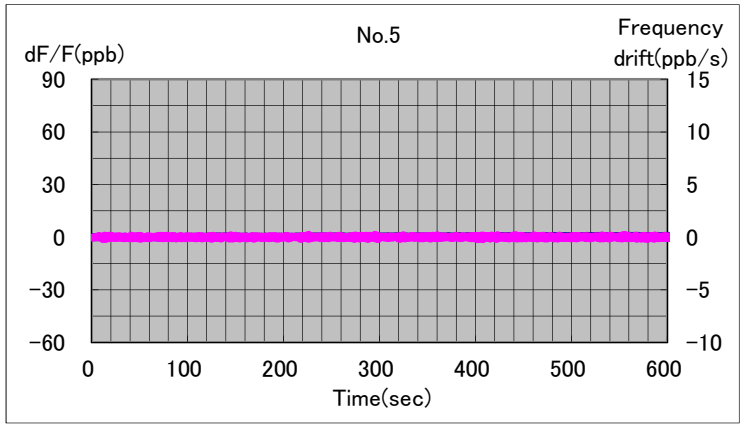
Confidential

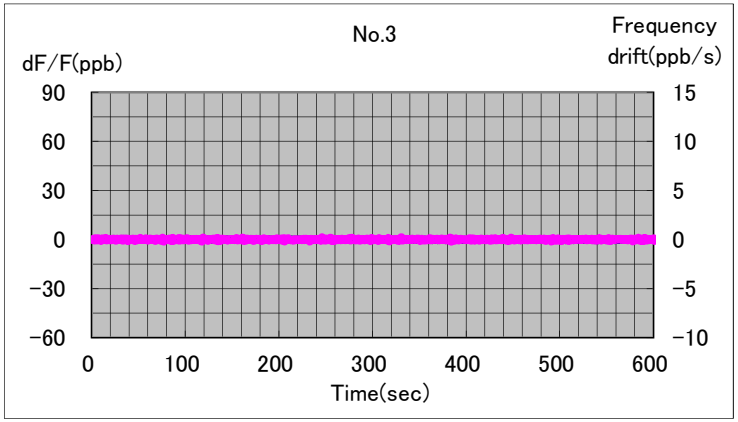
TCXO frequency drift rate test at 25℃

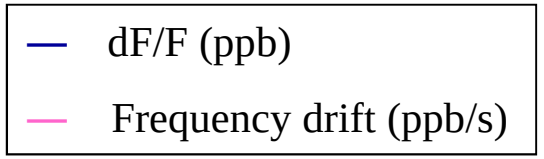






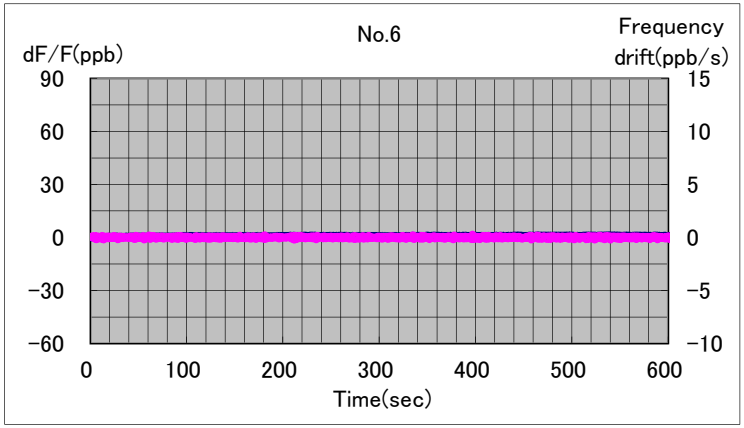


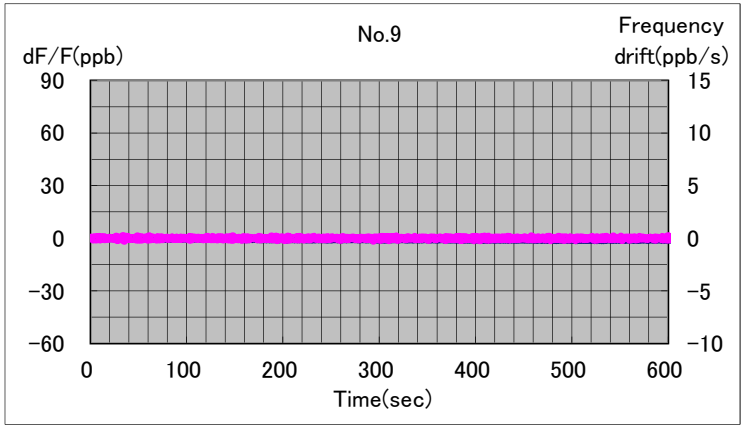


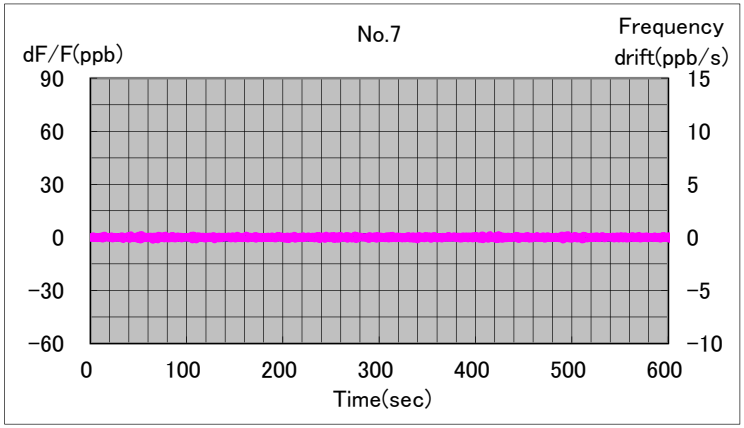


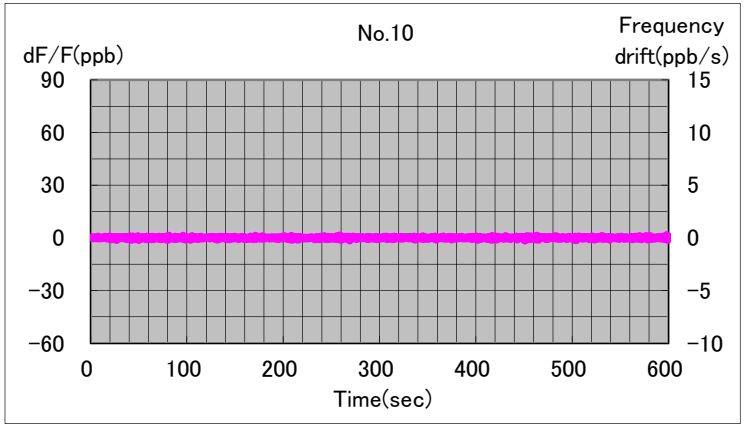
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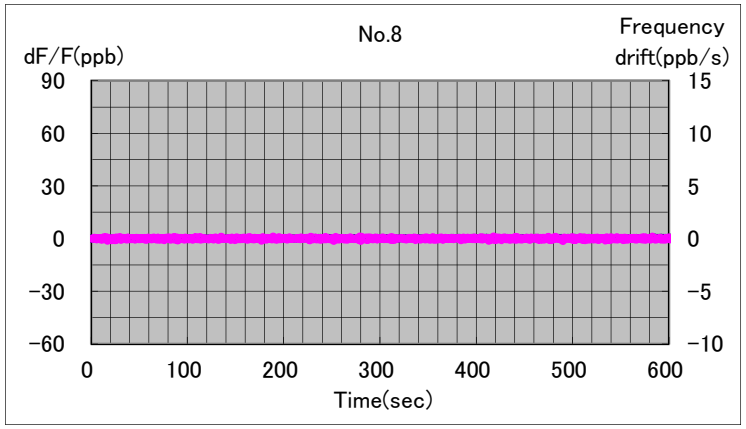
TCXO frequency drift rate test at 25℃

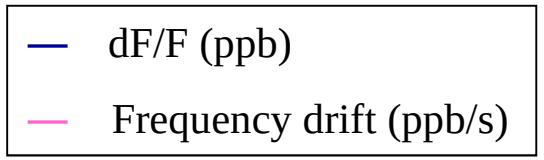








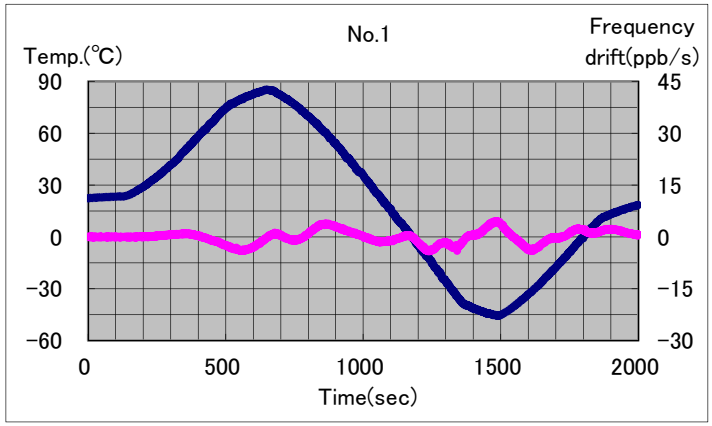


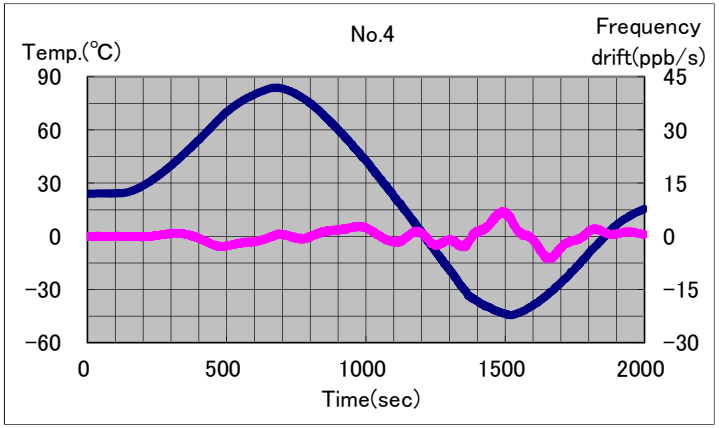


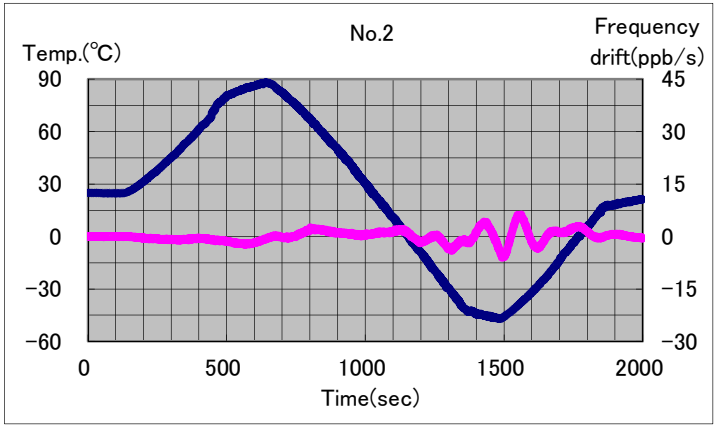
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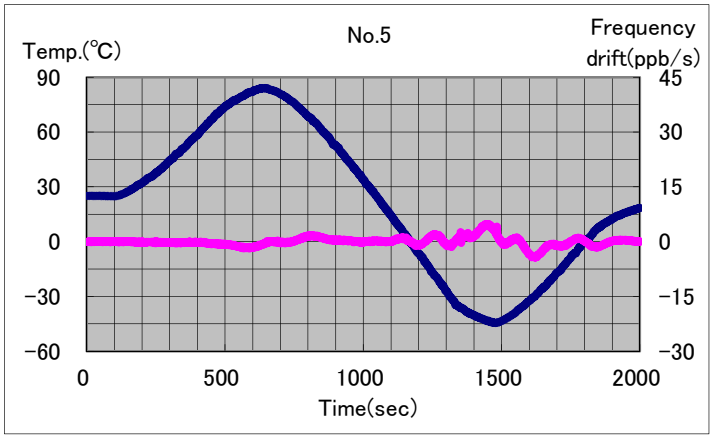
TCXO frequency drift rate over operation temperature

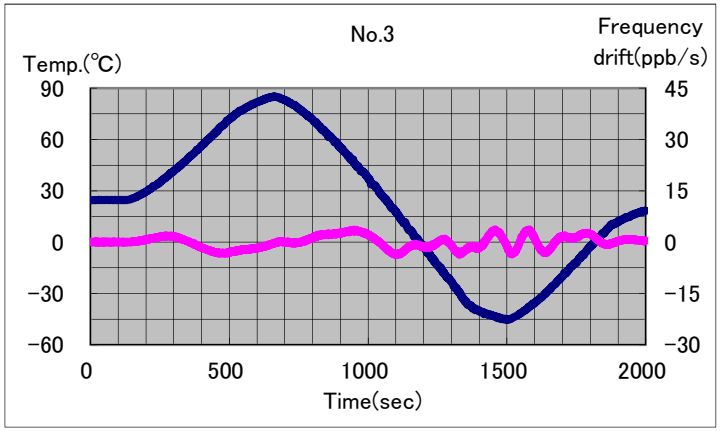
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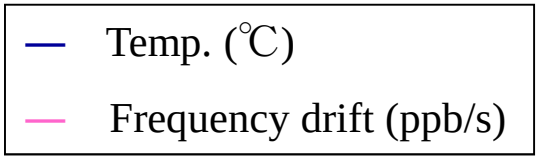






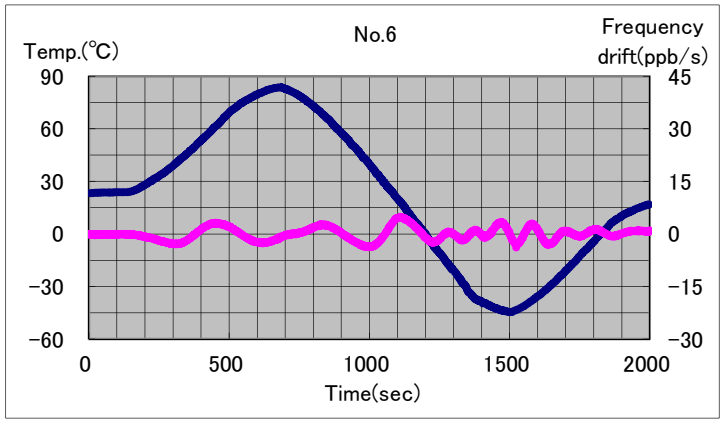


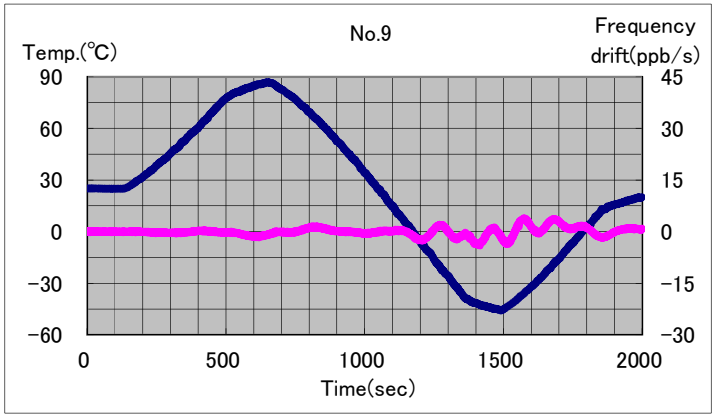


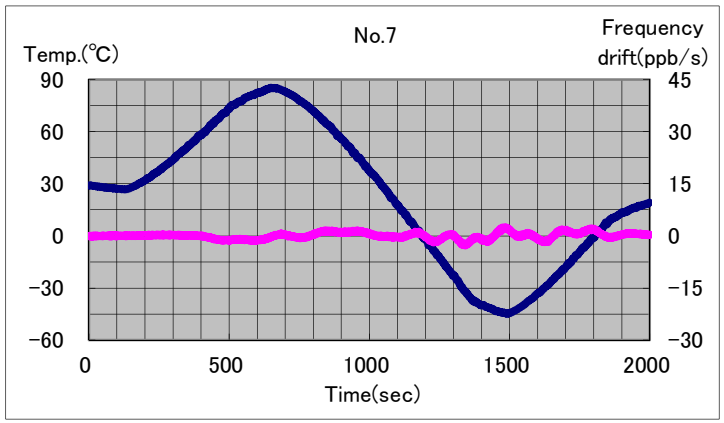


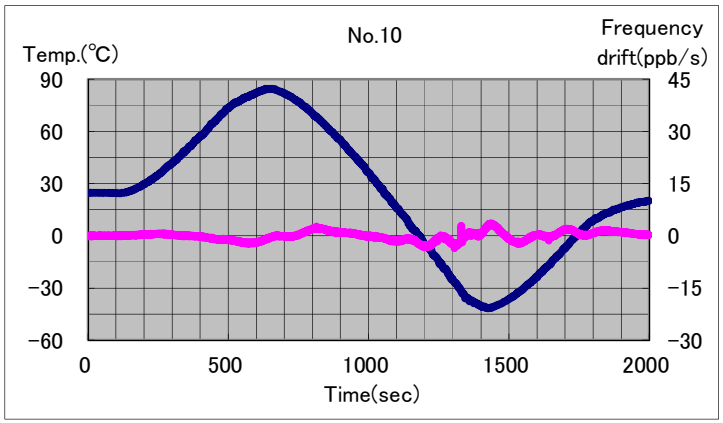
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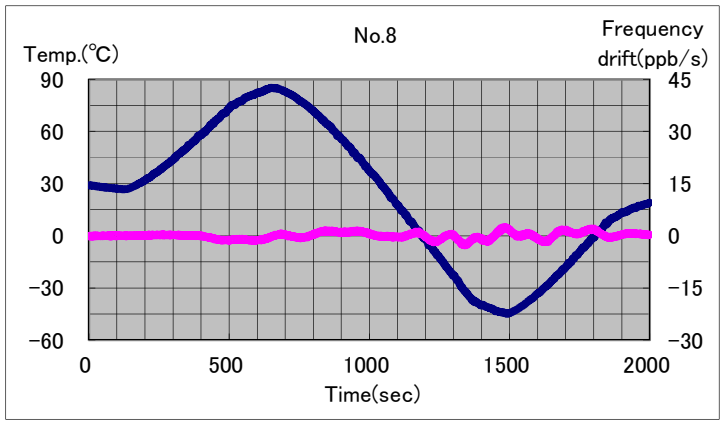
TCXO frequency drift rate over operation temperature

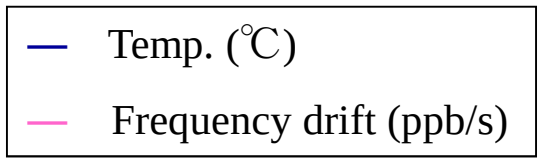












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