

OPERATION TEST REPORT ON TDK CERAMIC RESONATOR

(CCR20.0MXC7)

IC R5F21258SNFP-LOW
(Renesas Technology)

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1.Contents

(1) Oscillating circuit for evaluation	P.3
(2) IC dependence of oscillating characteristics	p.4
(3) Power supply voltage dependence of oscillating characteristics	P.5
(4) Temperature dependence of oscillating characteristics	P.6-7
(5) Open loop characteristics	P.8-9

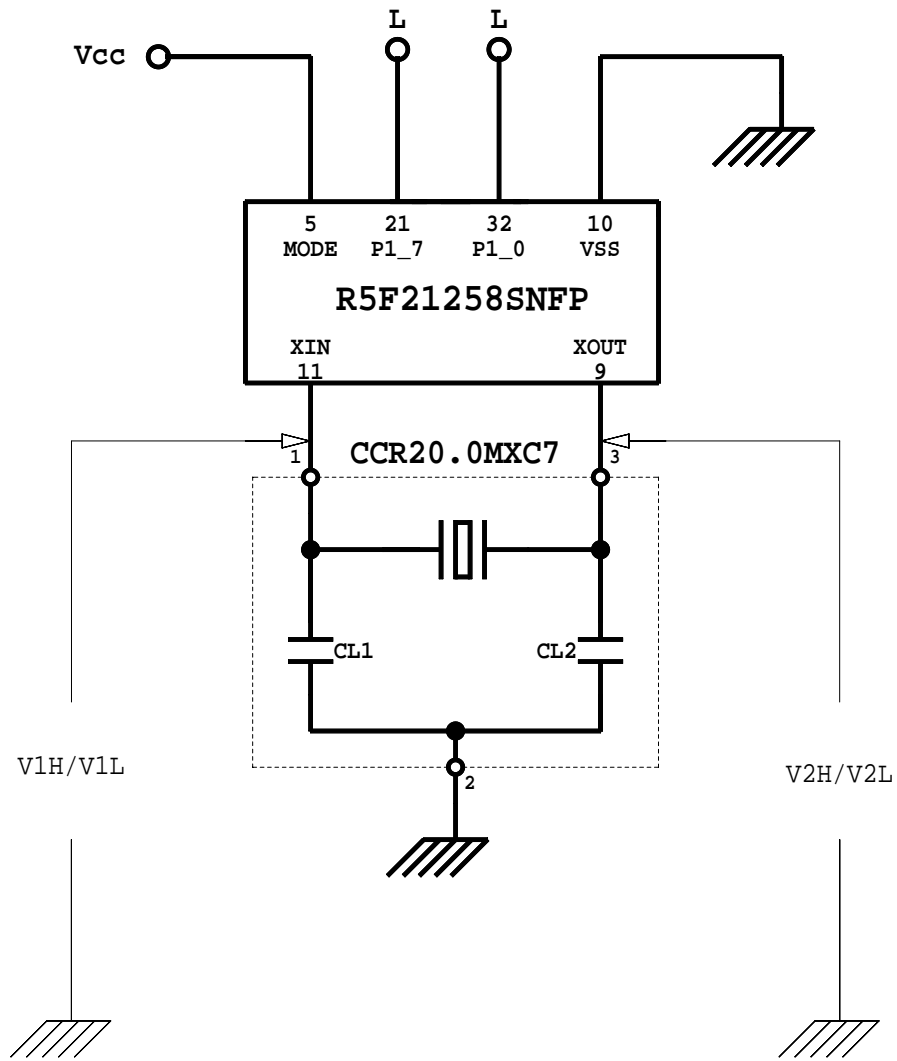
2.Test Conditions

IC	:	R5F21258SNFP-LOW (Renesas Technology)
Ceramic Resonator	:	CCR20.0MXC7 (Typical and worst sample are tested)
Power Supply Voltage range	:	3.0(V) - 5.5(V)
Temperature Range	:	-45(degC) - +90(degC)

3.Conclusions and recommendable circuit constant

We could confirm the operation satisfactory under
the following test conditions.

Power Supply Voltage range	:	3.1(V) - 5.5(V)
Temperature Range	:	-45(degC) - +90(degC)
Load capacitance(CL1/CL2)	:	Built-in [18(pF)]
Damping resistance(Rd)	:	short (0ohm)
Feedback resistance(Rf)	:	Built-in(IC side)



*BUILT-IN LOADING CAPACITOR
 CL1/CL2=9/9pF +/-20%

Oscillating circuit for evaluation

IC dependence of oscillating characteristics

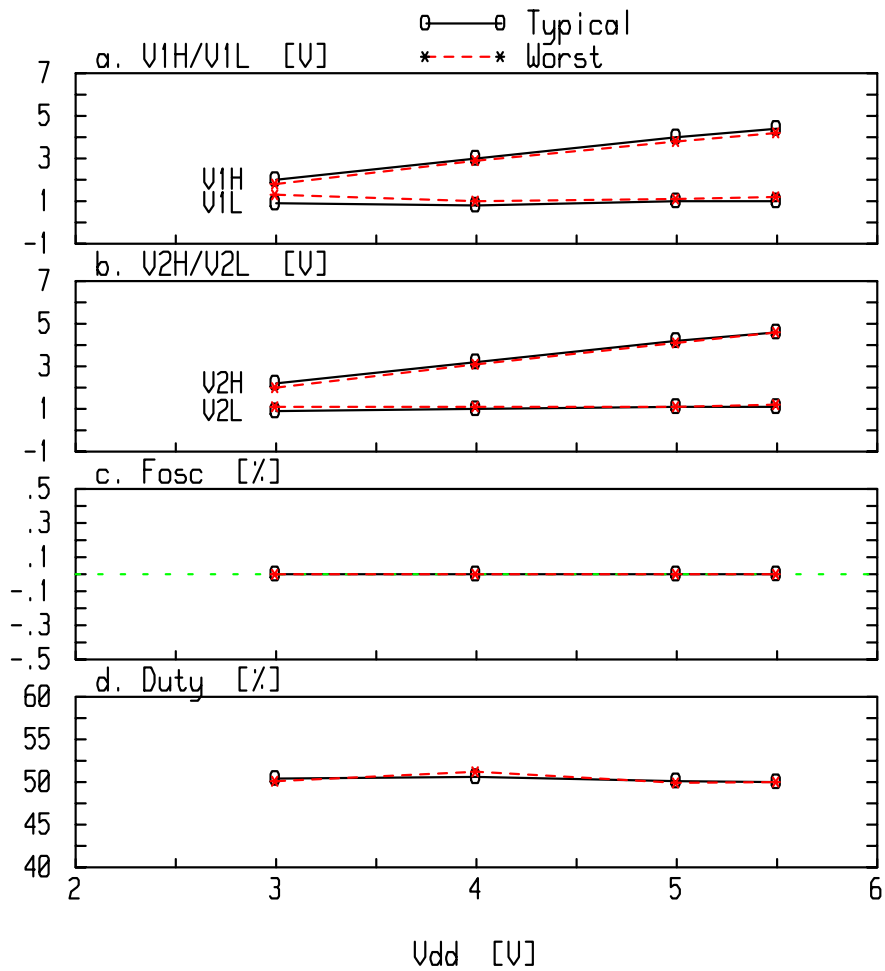
R5F21258SNFP
CCR20.0MXC7 - S

Room Temp.
Vdd [V] 5 (item a~e)

item IC NO	a. [V] V1H/V1L	b. [V] V2H/V2L	c. [MHz] Fosc	d. [uS] Trise	e. [%] Duty	f. [V] Vstart	g. [V] Uhold
LL	4 1	4.3 1	20.03399		50	2.38	2.34
LH	4 .9	4.3 1	20.03378		49	2.46	2.46
TYP	4 1	4.2 1.1	20.03337		50.1	2.47	2.46
HL	4 .9	4.2 .9	20.03383		50	2.49	2.48
HH	4 .9	4.3 1	20.03378		50.6	2.64	2.61

R5F21258SNFP - TYP(LOW)

CCR20.0MXC7
T_a = 25 [deg]



e. V_{start} [V]
Typical = 2.47
Worst = 2.76

f. V_{hold} [V]
Typical = 2.46
Worst = 2.73

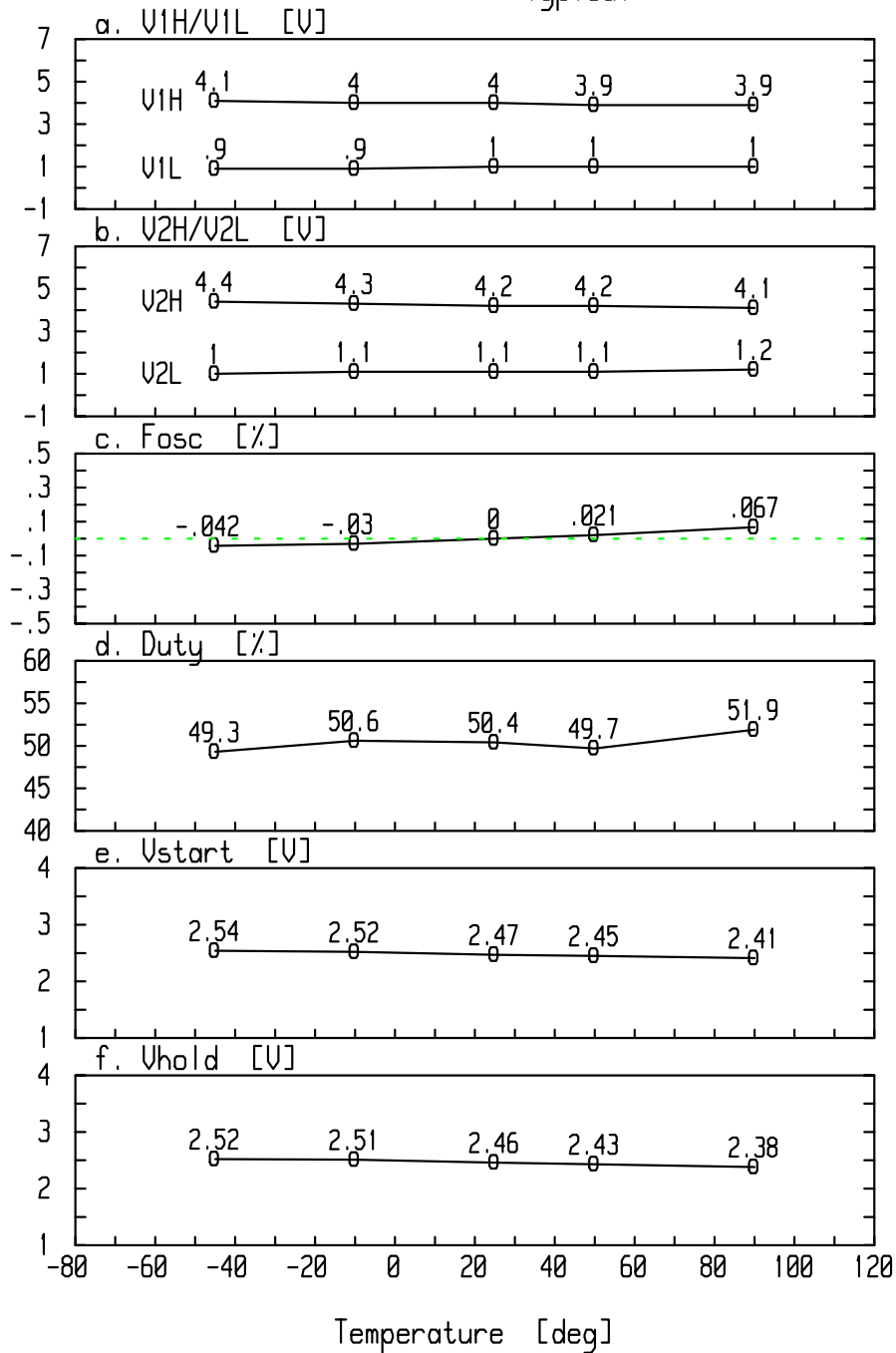
Power supply voltage dependence of oscillating characteristics

R5F21258SNFP - TYP(LOW)

CCR20.0MXC7

V_{dd}= 5 [V] (Fig.a~e)

○—○ Typical

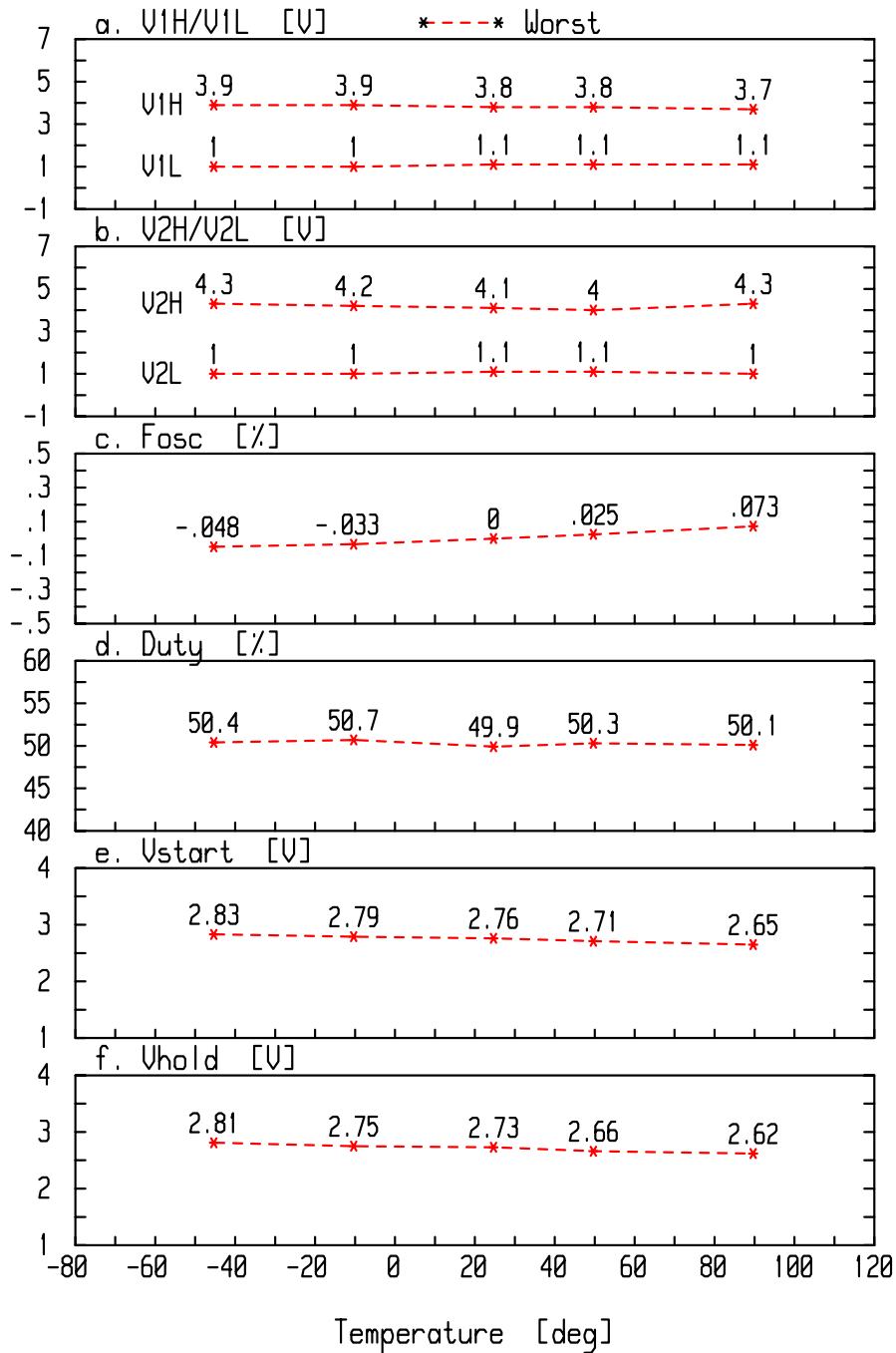


Temperature dependence of oscillating characteristics

R5F21258SNFP - TYP(LOW)

CCR20.0MXC7

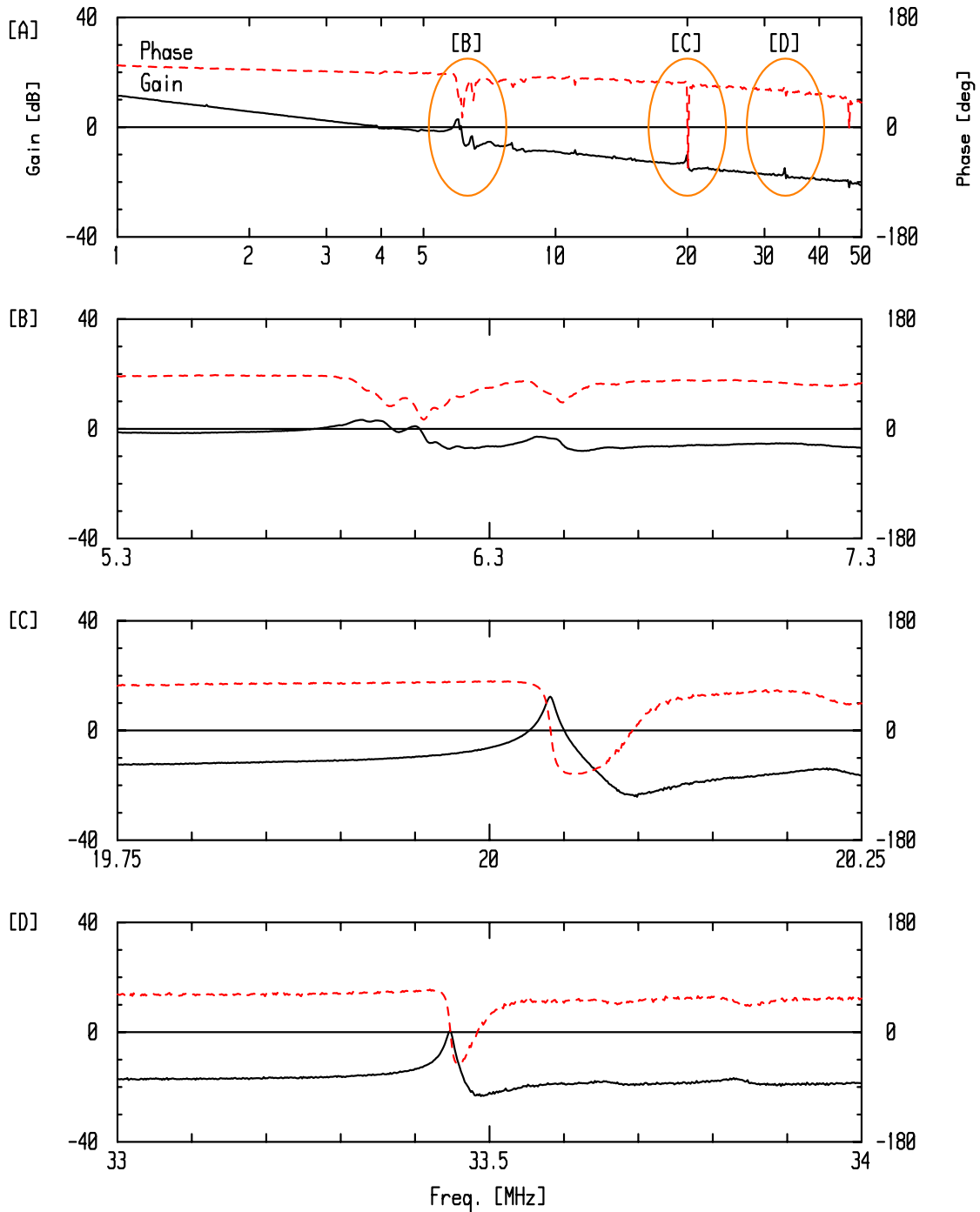
V_{dd}= 5 [V] (Fig.a~e)



Temperature dependence of oscillating characteristics

R5F21258SNFP - TYP(LOW)
 CCR20.0MXC7 - Typical
 Vdd [V] 5

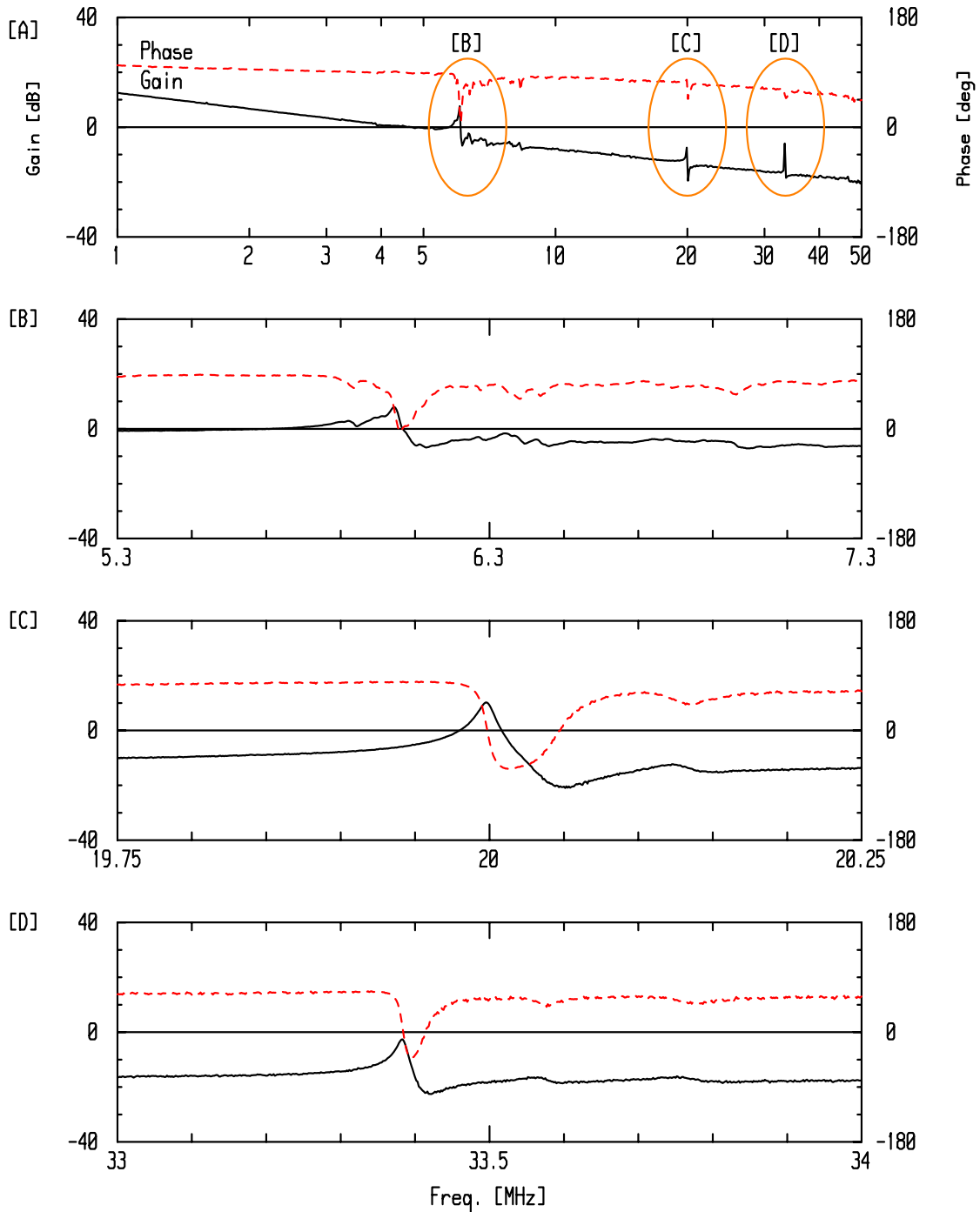
	[B]	[C]	[D]
Gmax [dB]	3.3	12.4	.4
LGM [dB]	0	12	.1
Pmin [deg]	15.1	-71.5	-51.8
LPM [deg]	15.1	-69	0



Open loop characteristics (Typical Sample)

R5F21258SNFP - TYP(LOW)
 CCR20.0MXC7 - Worst
 Vdd [V] 5

	[B]	[C]	[D]
Gmax [dB]	8	10.2	-2.7
LGM [dB]	5.1	9.9	0
Pmin [deg]	-5.3	-63.4	-42.1
LPM [deg]	-5.3	-58.6	0



Open loop characteristics (Worst Sample)