

OPERATION TEST REPORT ON TDK CERAMIC RESONATOR

(CCR8.0MXC8)

IC R5F212L4SNFP-LOW
(Renesas Technology)

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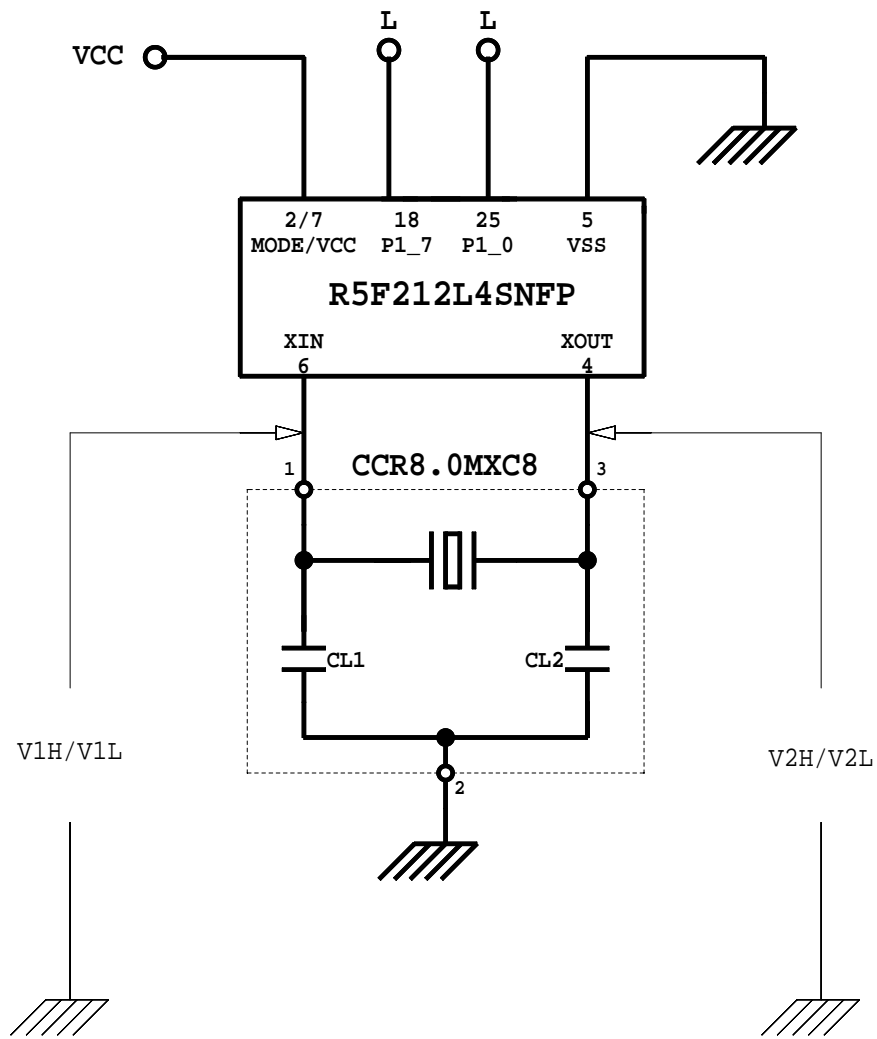
2.Test Conditions

IC	:	R5F212L4SNFP-LOW (Renesas Technology)
Ceramic Resonator	:	CCR8.0MXC8 (Typical and worst sample are tested)
Power Supply Voltage range	:	2.2 to 5.5(V)
Temperature Range	:	-45 to +110(degC)

3.Conclusions and recommendable circuit constant

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

Power Supply Voltage range	:	2.3 to 5.5(V)
Temperature Range	:	-45 to +110(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=18/18pF +/-20%

Oscillating circuit for evaluation

IC dependence of oscillating characteristics

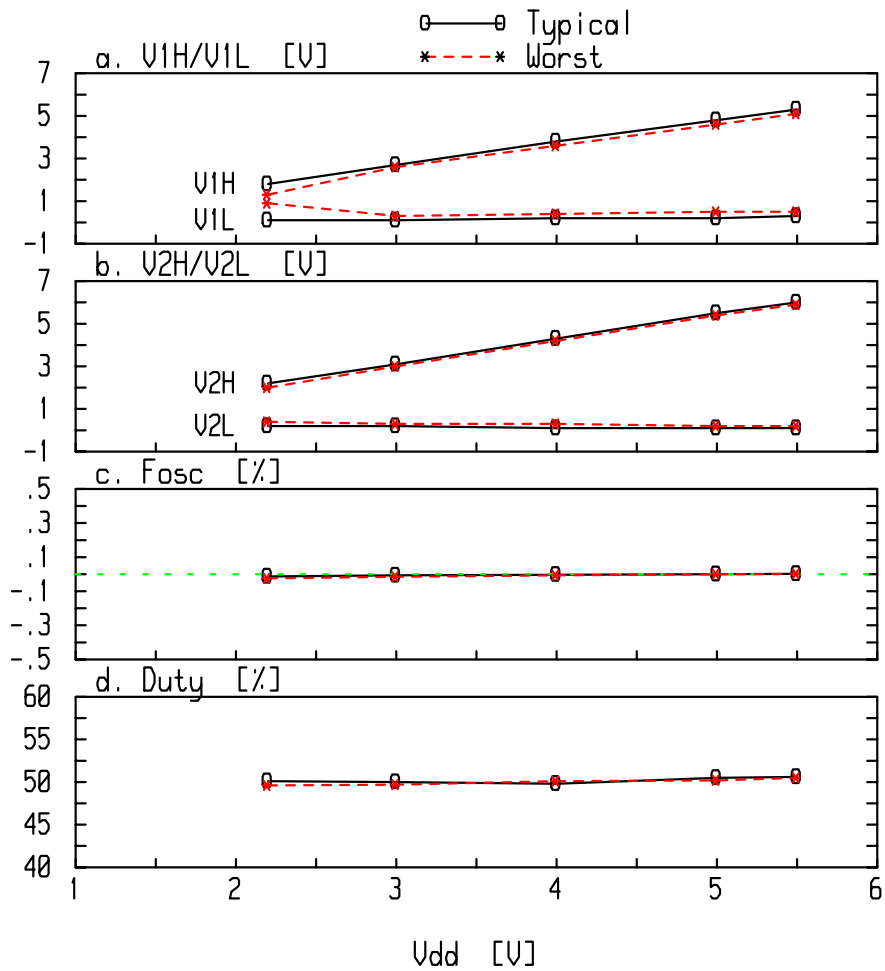
R5F212L4SNFP
CCR8.0MXC8 - S

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	4.8 .2	5.5 0	8.01744		50.7	1.54	1.54
LH	4.8 .3	5.5 .1	8.01717		50.2	1.66	1.66
TYP	4.8 .2	5.5 .1	8.01692		50.5	1.67	1.67
HL	4.7 .2	5.4 0	8.01739		50.4	1.68	1.67
HH	4.8 .2	5.5 .1	8.01725		50.6	1.77	1.77

R5F212L4SNFP - TYP(LOW)

CCR8.0MXC8
 $T_a = 25$ [deg]



e. V_{start} [V]
Typical = 1.67
Worst = 1.86

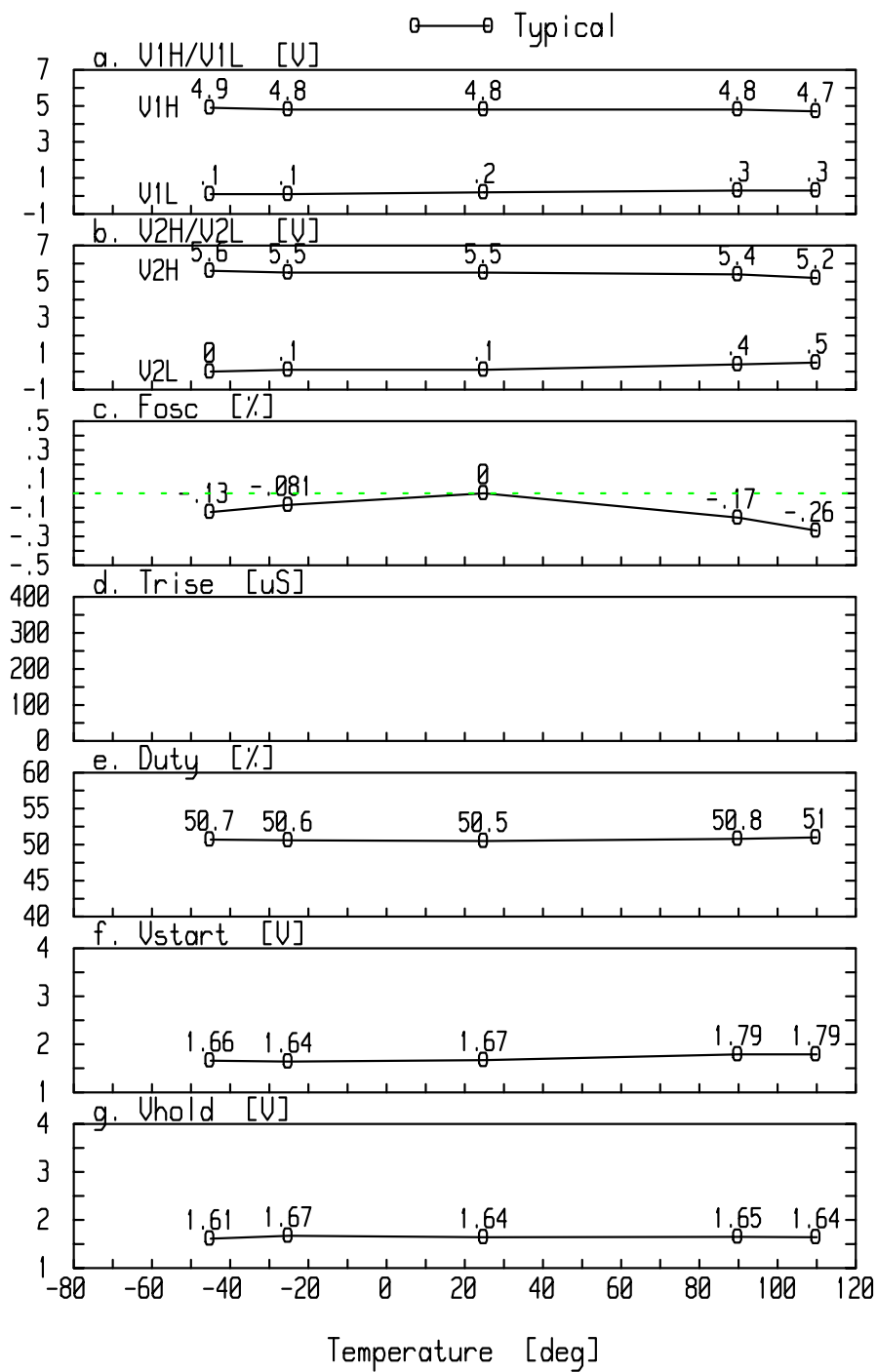
f. V_{hold} [V]
Typical = 1.67
Worst = 1.86

Power supply voltage dependence of oscillating characteristics

R5F212L4SNFP - TYP(LOW)

CCR8.0MXC8

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

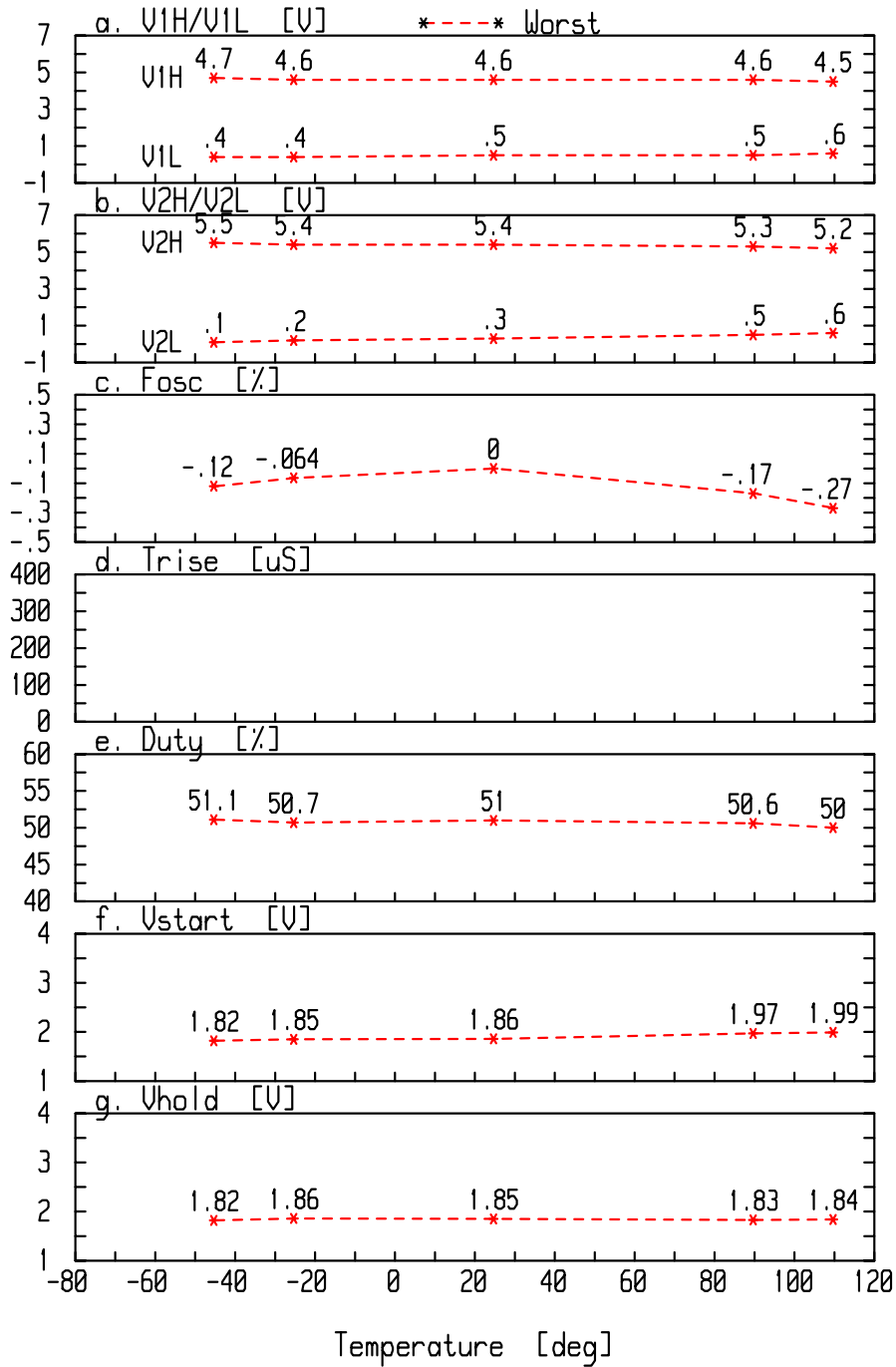


Temperature dependence of oscillating characteristics

R5F212L4SNFP - TYP(LOW)

CCR8.0MXC8

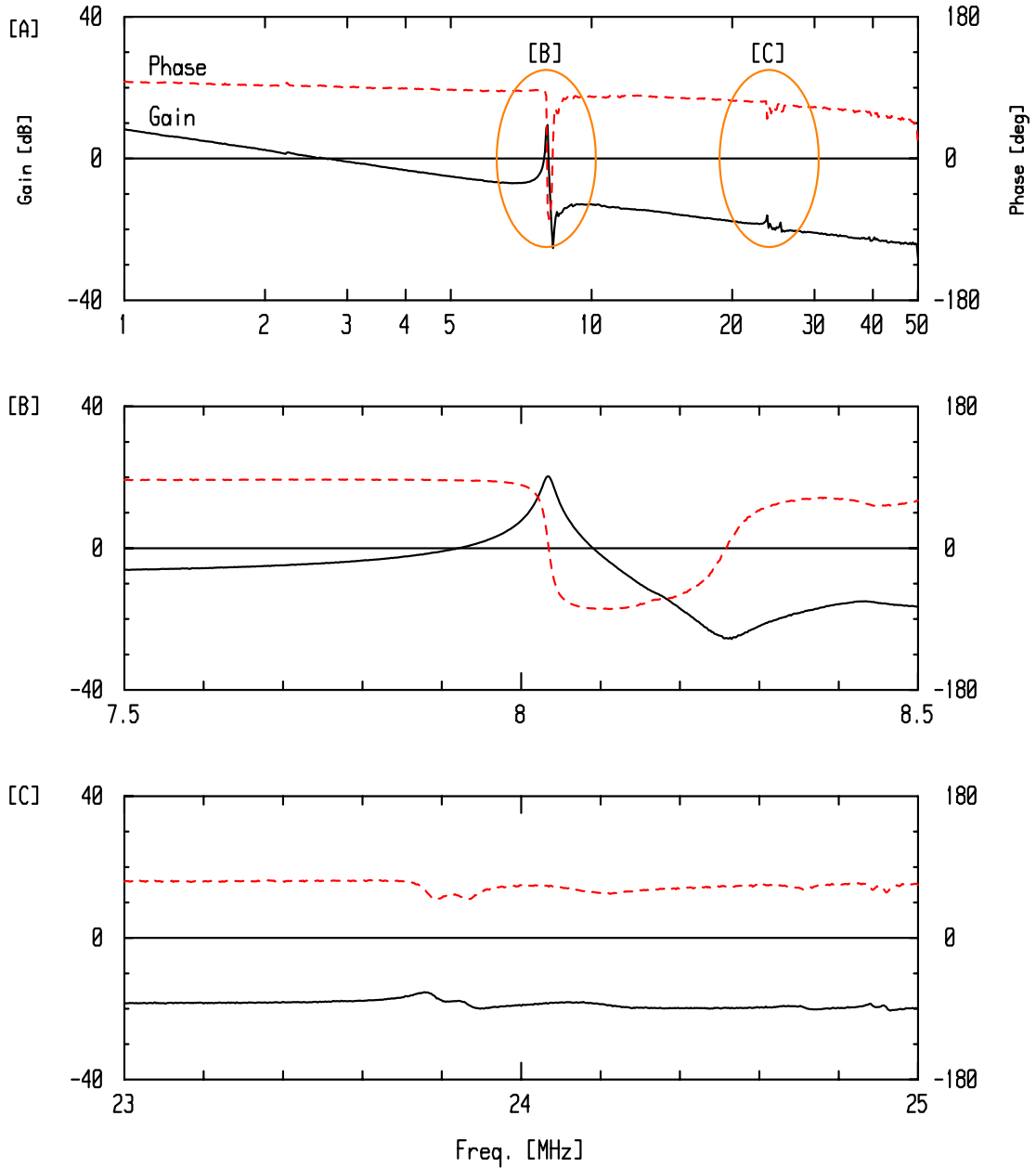
V_{dd}= 5 [V] (Fig. a~e)



Temperature dependence of oscillating characteristics

R5F212L4SNFP - TYP(LOW)
 CCR8.0MXC8 - Typical
 Vdd [V] 5

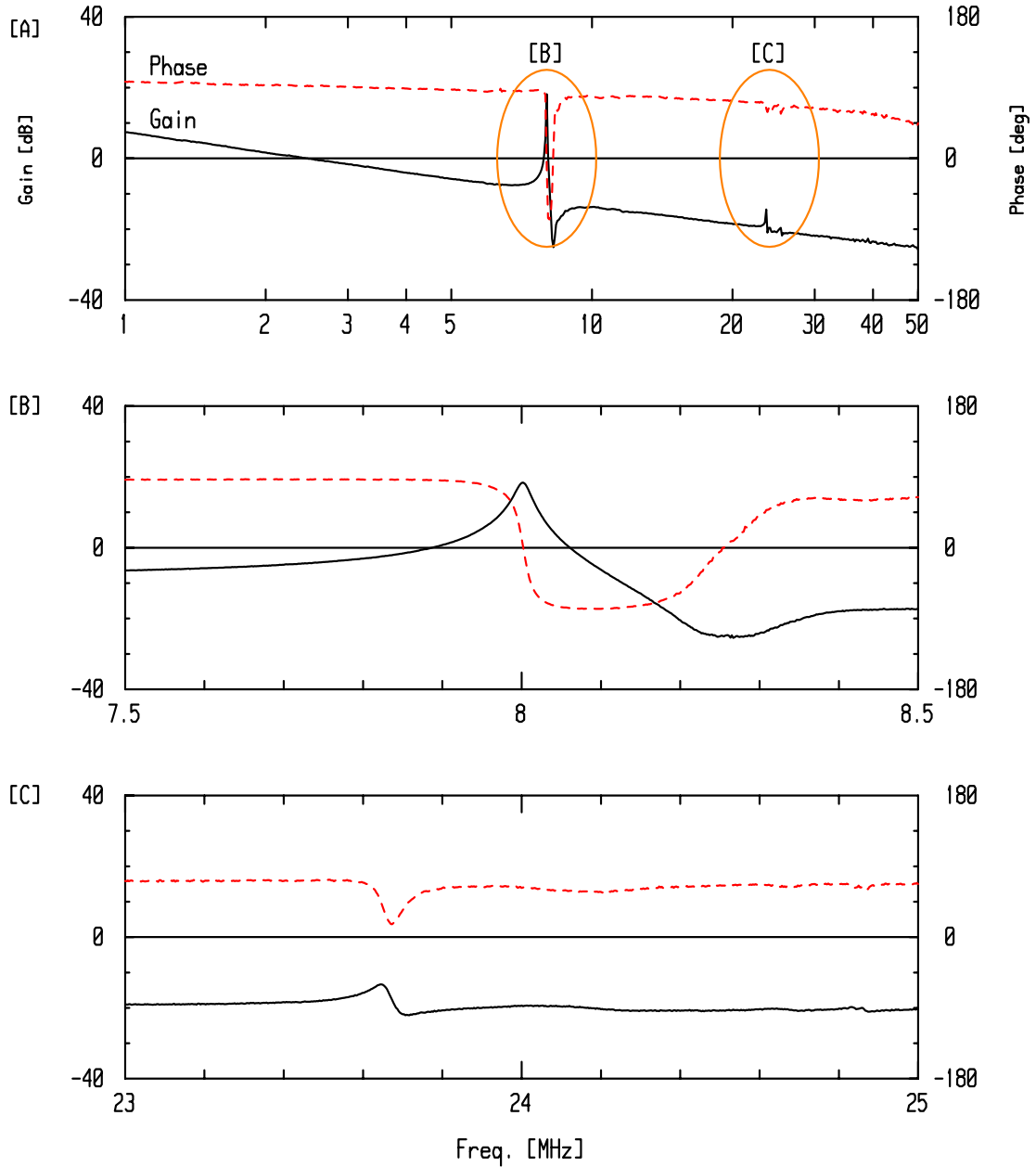
	[B]	[C]
Gmax [dB]	20.3	-15.3
LGM [dB]	20.3	0
FLGM [MHz]	8.0355	0
LPM [deg]	-76.6	57.9



Open loop characteristics (Typical Sample)

R5F212L4SNFP - TYP(LOW)
 CCR8.0MXC8 - Worst
 Vdd [V] 5

	[B]	[C]
Gmax [dB]	18.4	-13.4
LGM [dB]	18.3	0
FLGM [MHz]	8.0028	0
LPM [deg]	-76.7	58.6



Open loop characteristics (Worst Sample)