

OPERATION TEST REPORT ON TDK CERAMIC RESONATOR

(CCR8.0MXC8)

IC R5F21258SNFP-HIGH
(Renesas Technology)

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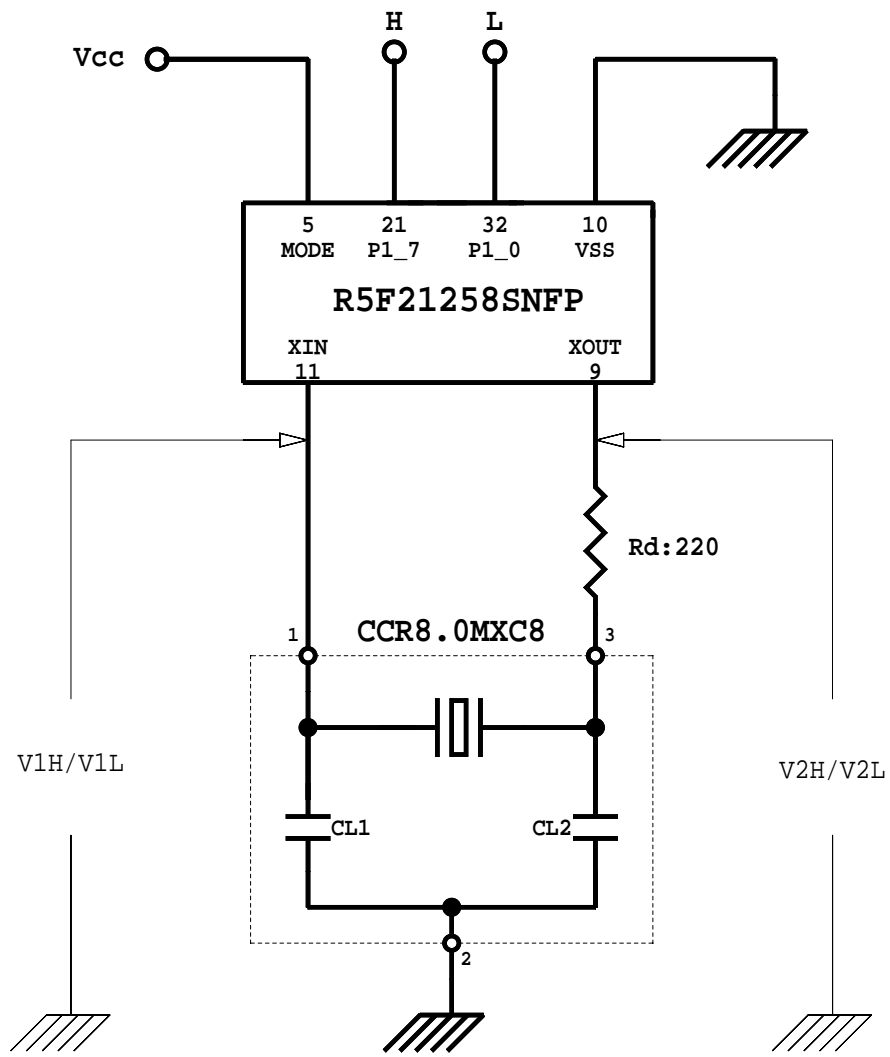
2.Test Conditions

IC	:	R5F21258SNFP-HIGH (Renesas Technology)
Ceramic Resonator	:	CCR8.0MXC8 (Typical and worst sample are tested)
Power Supply Voltage range	:	2.2(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	:	2.2(V) - 5.5(V)
Temperature Range	:	-45(degC) - +90(degC)
Load capacitance(CL1/CL2)	:	Built-in [18(pF)]
Damping resistance(Rd)	:	220(ohm)
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

R5F21258SNFP
CCR8.0MXC8 - S

Room Temp.
Vdd [V] 5 (item a~e)
Rd [ohm] 220

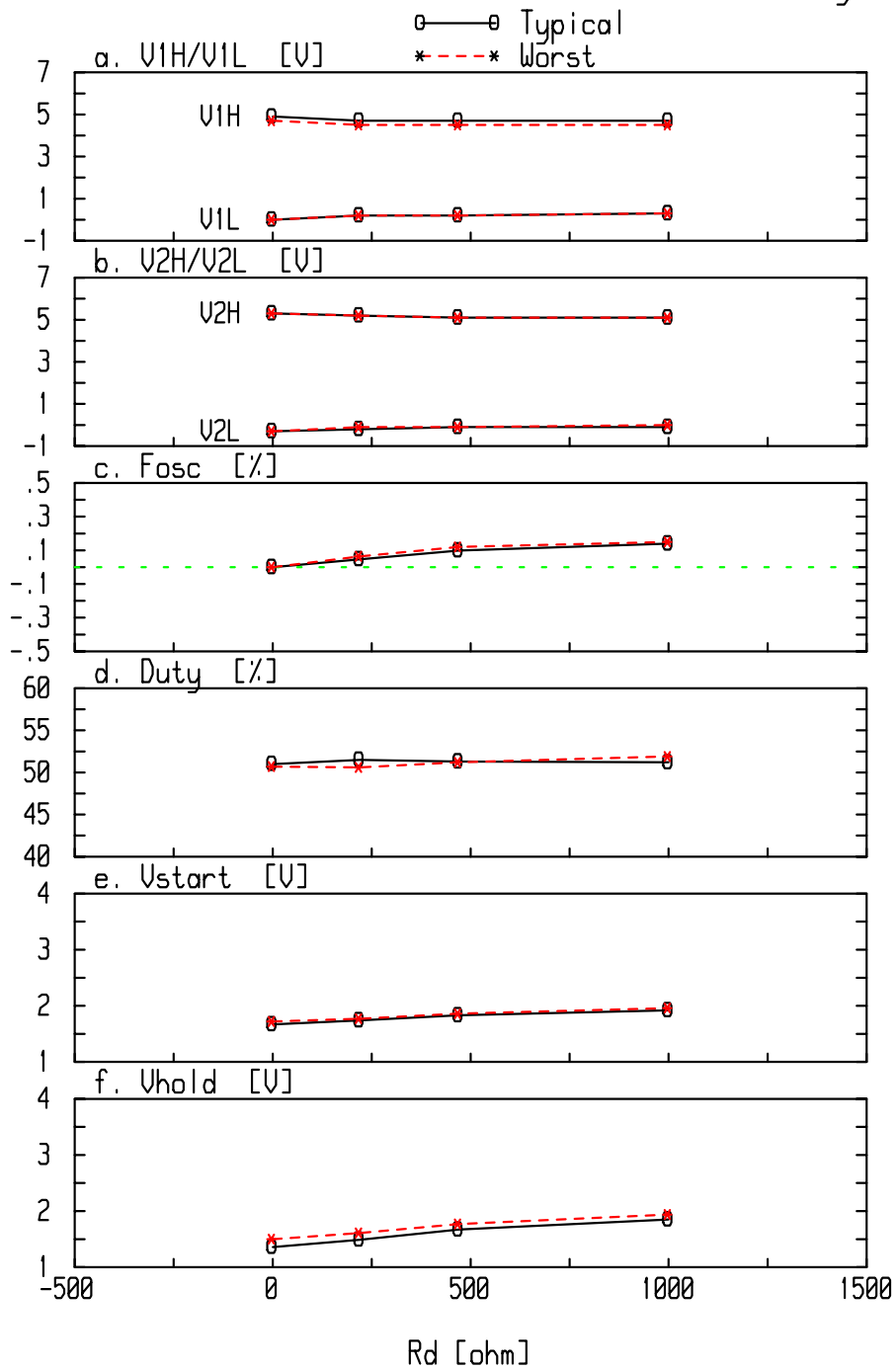
item IC NO	a. [V] V1H/V1L	b. [V] V2H/V2L	c. [MHz] Fosc	d. [uS] Trise	e. [%] Duty	f. [V] Vstart	g. [V] Uhold
LL	4.7 0	5.2 -.3	8.01975	10	50.9	1.62	1.41
LH	4.7 0	5.2 -.2	8.01905	11	50.6	1.73	1.49
TYP	4.7 0	5.2 -.2	8.01982	12	50.8	1.73	1.49
HL	4.7 -.1	5.2 -.2	8.01928	11	50.1	1.75	1.53
HH	4.7 0	5.2 -.2	8.01873	12	51.1	1.86	1.59

R5F21258SNFP - TYP(HIGH)

CCR8.0MXC8

Vdd= 5 [V] (Fig.a~d)

Ta= 25 [deg]



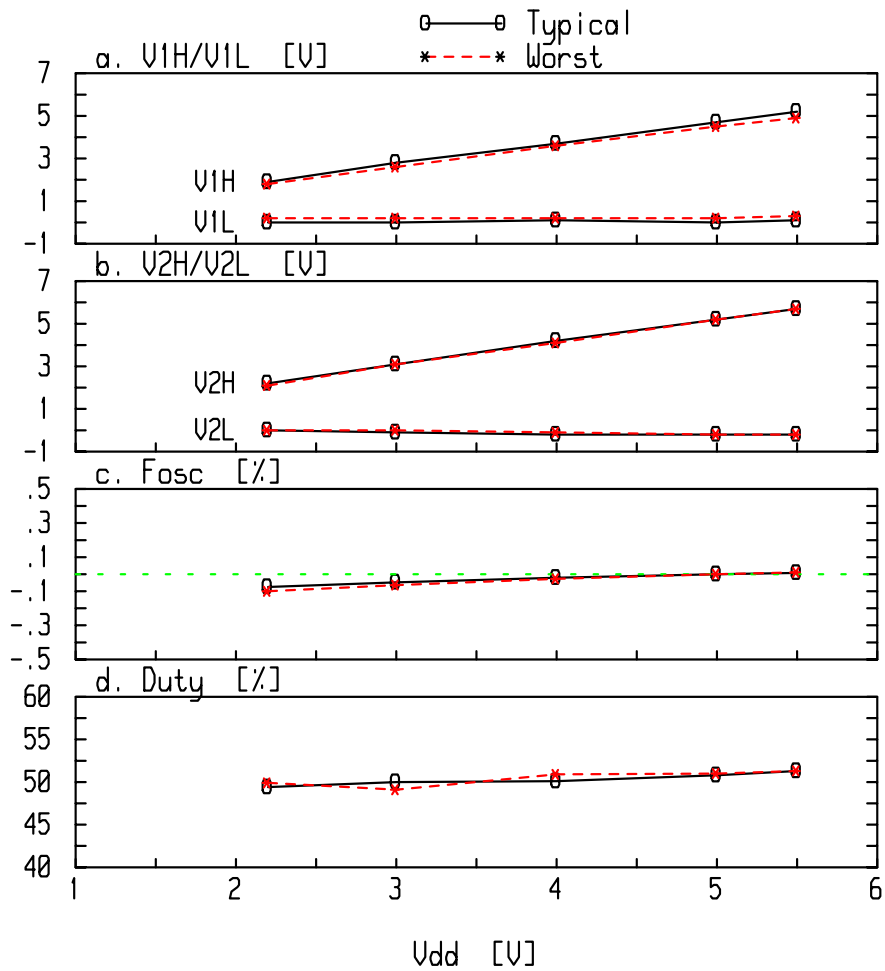
Damping resistance(Rd) dependence of oscillating characteristics

R5F21258SNFP - TYP(HIGH)

Rd [ohm] 220

CCR8.0MXC8

Ta= 25 [deg]



e. Vstart [V]
Typical = 1.73
Worst = 1.79

f. Vhold [V]
Typical = 1.49
Worst = 1.6

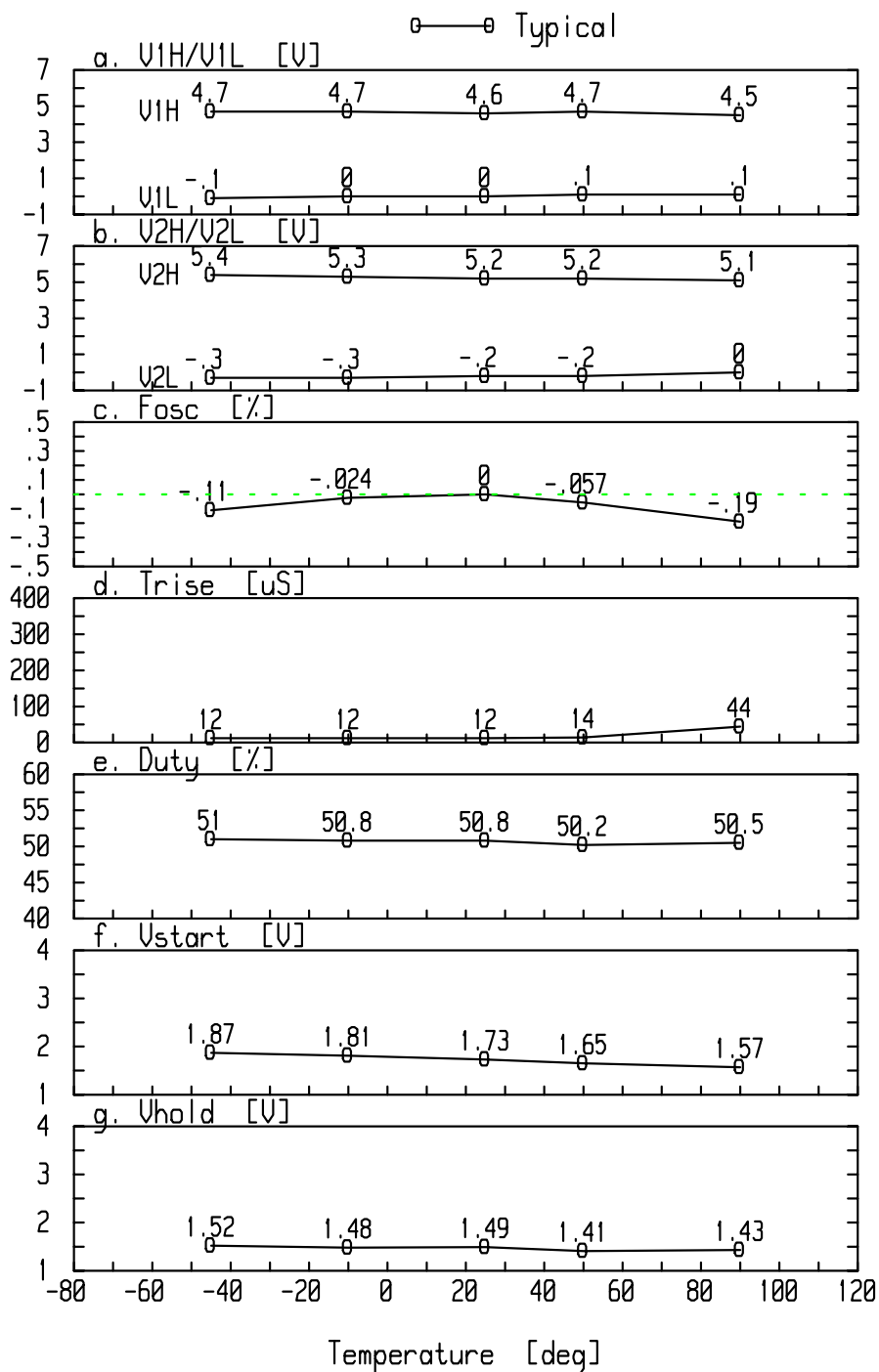
Power supply voltage dependence of oscillating characteristics

R5F21258SNFP - TYP(HIGH)

Rd [ohm] 220

CCR8.0MXC8

Vdd= 5 [V] (Fig.a~e)



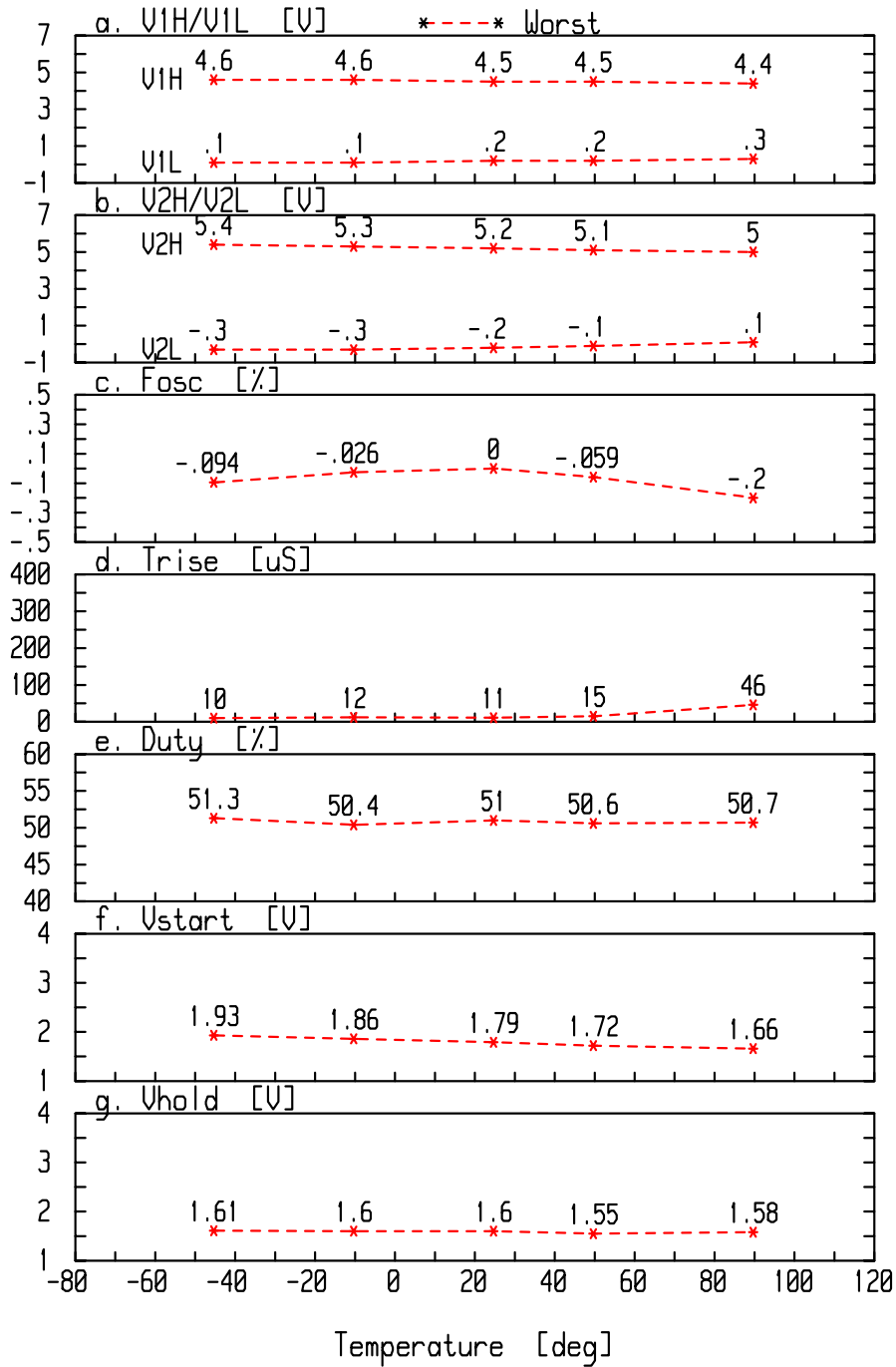
Temperature dependence of oscillating characteristics

R5F21258SNFP - TYP(HIGH)

Rd [ohm] 220

CCR8.0MXC8

Vdd= 5 [V] (Fig.a~e)



Temperature dependence of oscillating characteristics

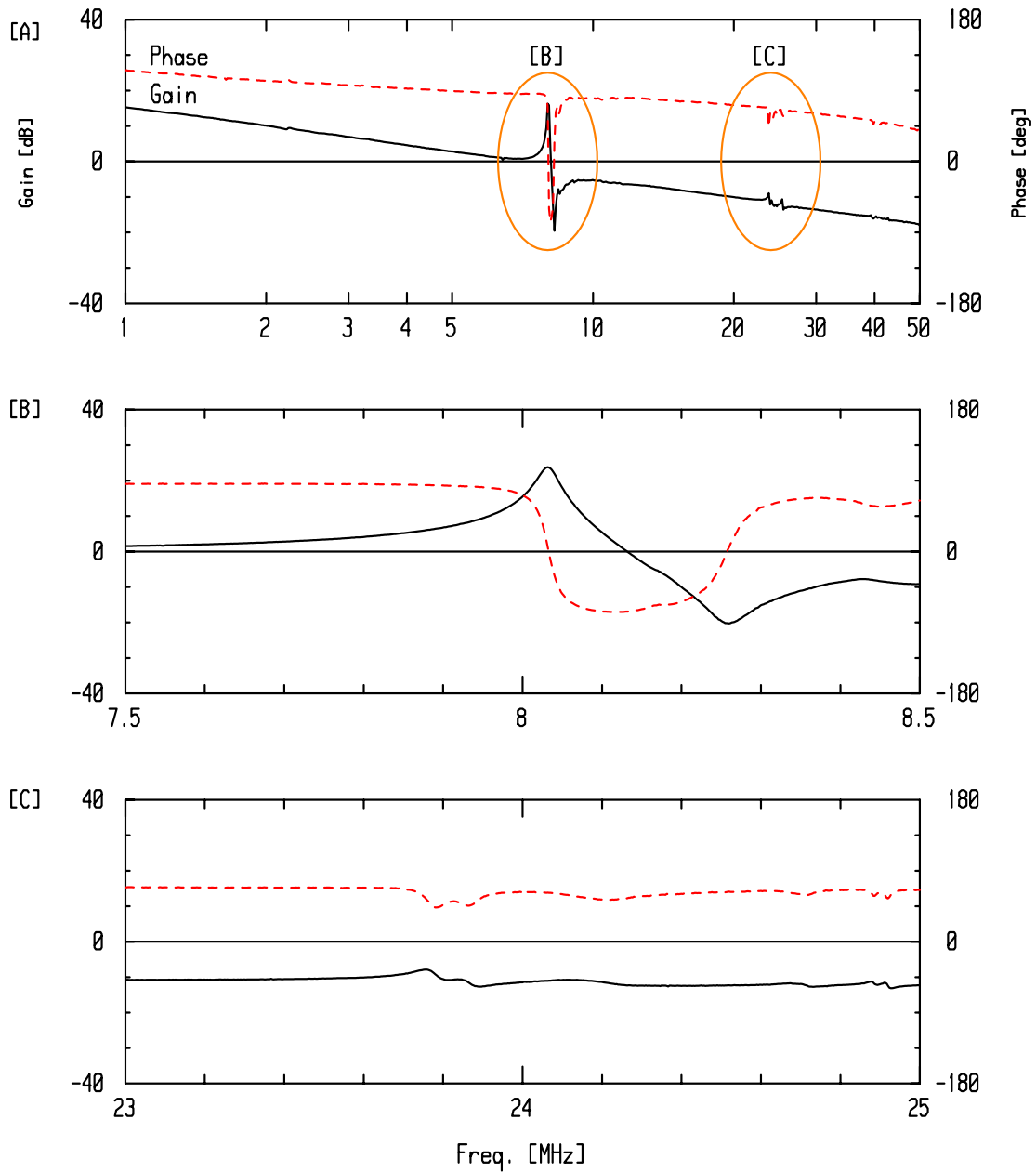
R5F21258SNFP - TYP(HIGH)

CCR8.0MXC8 - Typical

Vdd [V] 5

Rd [ohm] 220

	[B]	[C]
Gmax [dB]	23.8	-7.9
LGM [dB]	23.8	0
FLGM [MHz]	8.0337	0
LPM [deg]	-76.9	53



Open loop characteristics (Typical Sample)

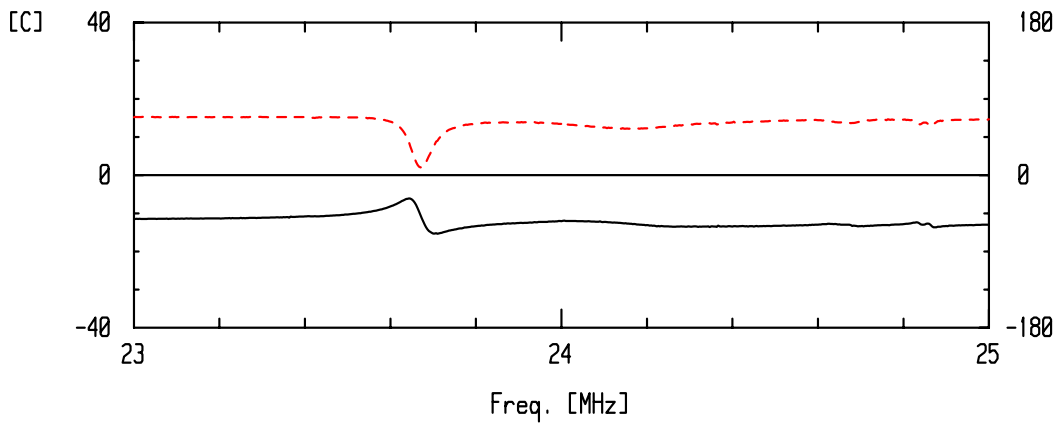
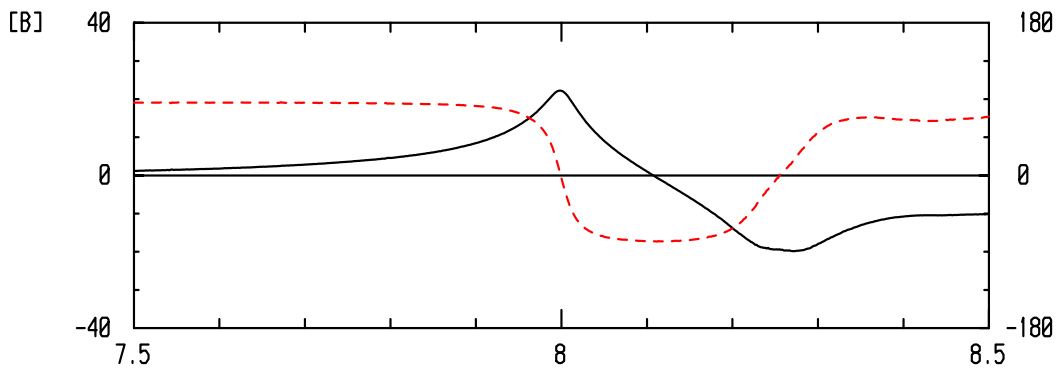
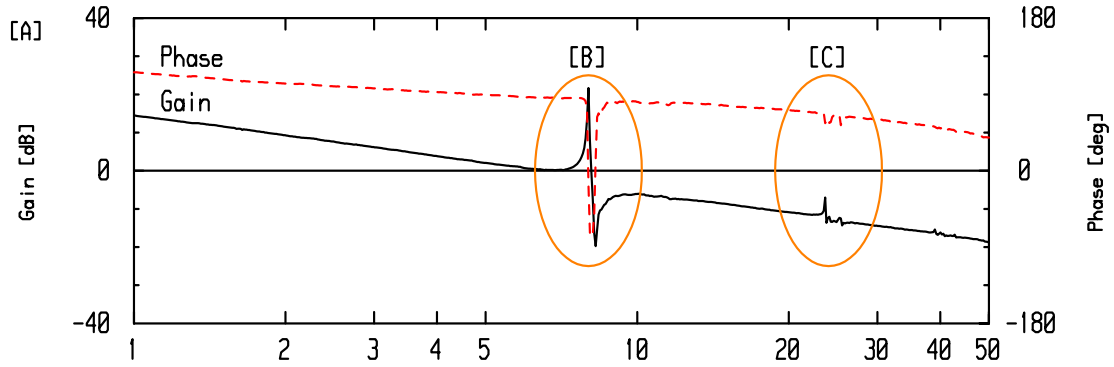
R5F21258SNFP - TYP(HIGH)

CCR8.0MXC8 - Worst

Vdd [V] 5

Rd [ohm] 220

	[B]	[C]
Gmax [dB]	22.2	-6.1
LGM [dB]	22.2	0
FLGM [MHz]	8	0
LPM [deg]	-77.7	54.2



Open loop characteristics (Worst Sample)