

OPERATION TEST REPORT ON TDK CERAMIC RESONATOR

(CCR10.0MXC8)

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

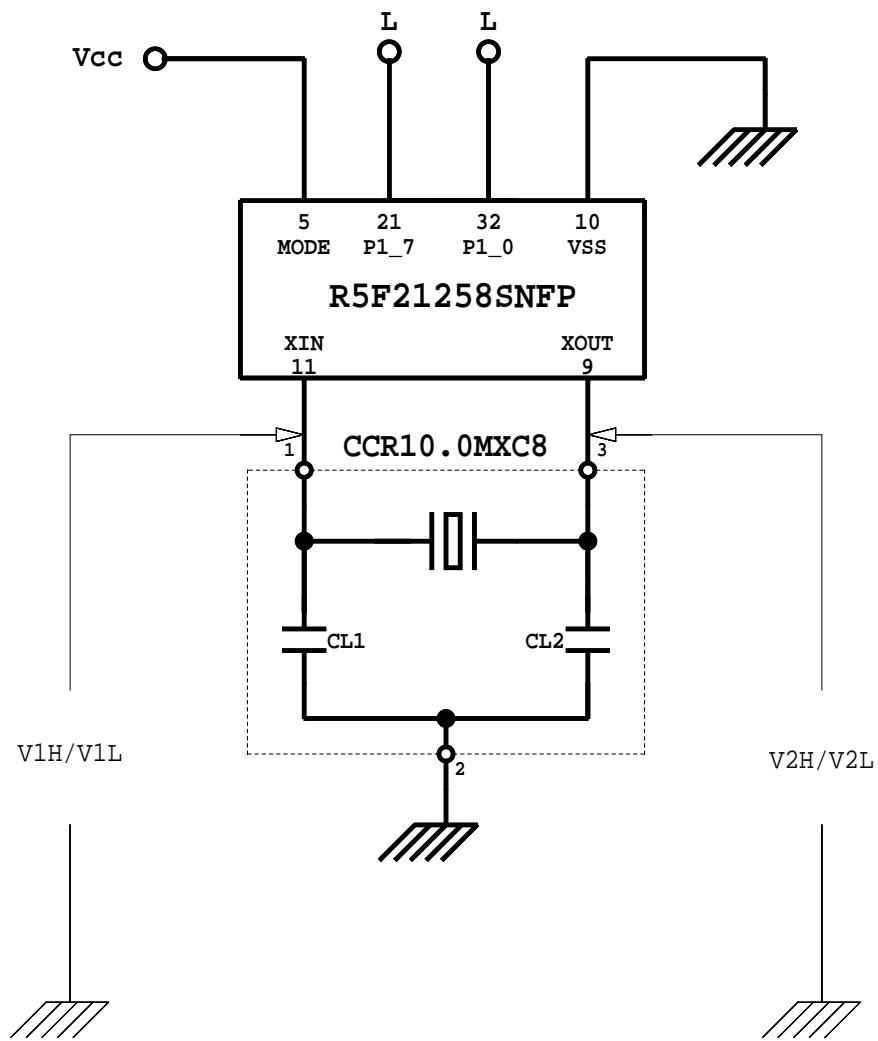
2.Test Conditions

IC	:	R5F21258SNFP-LOW (Renesas Technology)
Ceramic Resonator	:	CCR10.0MXC8 (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	:	2.3(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=18/18pF +/-20%

Oscillating circuit for evaluation

IC dependence of oscillating characteristics

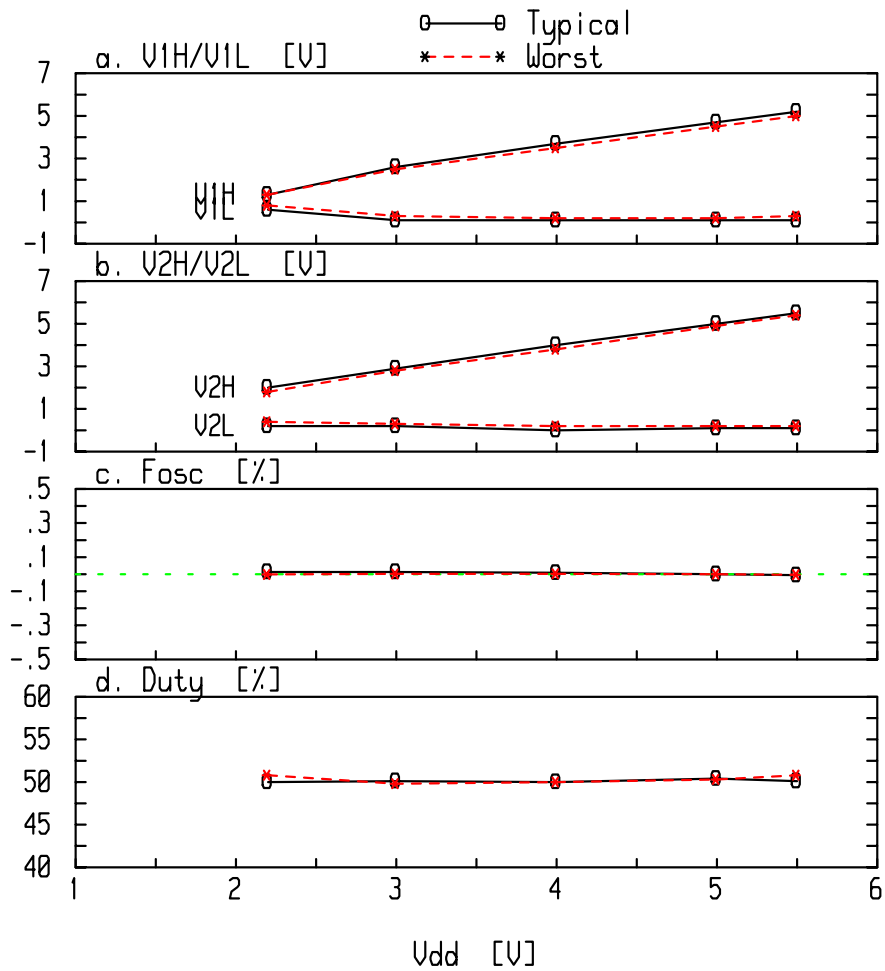
R5F21258SNFP
CCR10.0MXC8 - S

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	4.7 0	5 .1	10.02541		51	1.69	1.68
LH	4.7 0	5.1 .1	10.0253		49.8	1.78	1.78
TYP(LOW)	4.7 .1	5 .1	10.02484		50.4	1.8	1.79
HL	4.6 .1	5 0	10.025		50.9	1.81	1.81
HH	4.7 0	5.1 .1	10.02499		49.8	1.89	1.89

R5F21258SNFP - TYP(LOW)

CCR10.0MXC8
 $T_a = 25$ [deg]



e. Vstart [V]
 Typical = 1.8
 Worst = 1.97

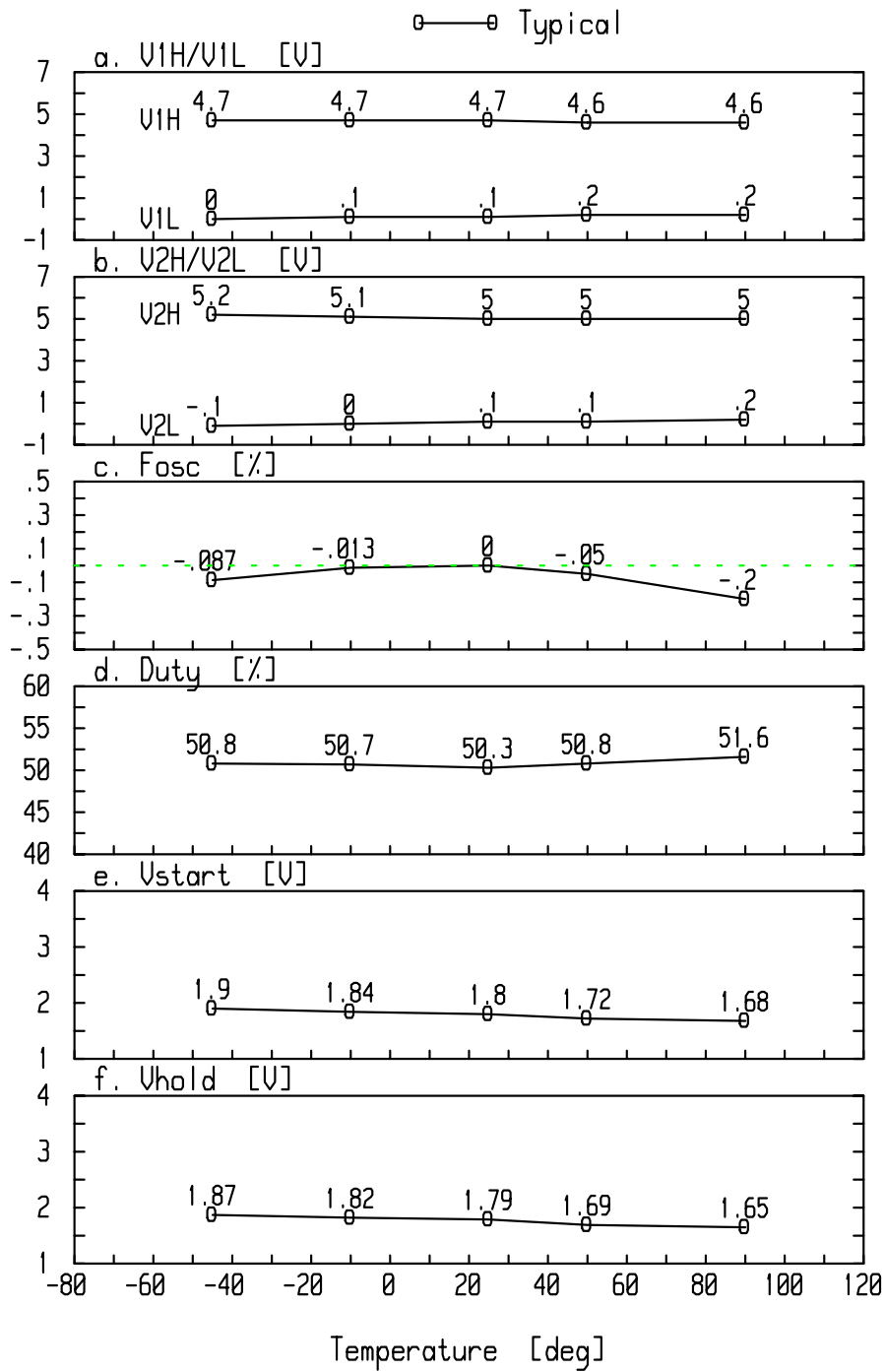
f. Vhold [V]
 Typical = 1.79
 Worst = 1.97

Power supply voltage dependence of oscillating characteristics

R5F21258SNFP - TYP(LOW)

CCR10.0MXC8

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

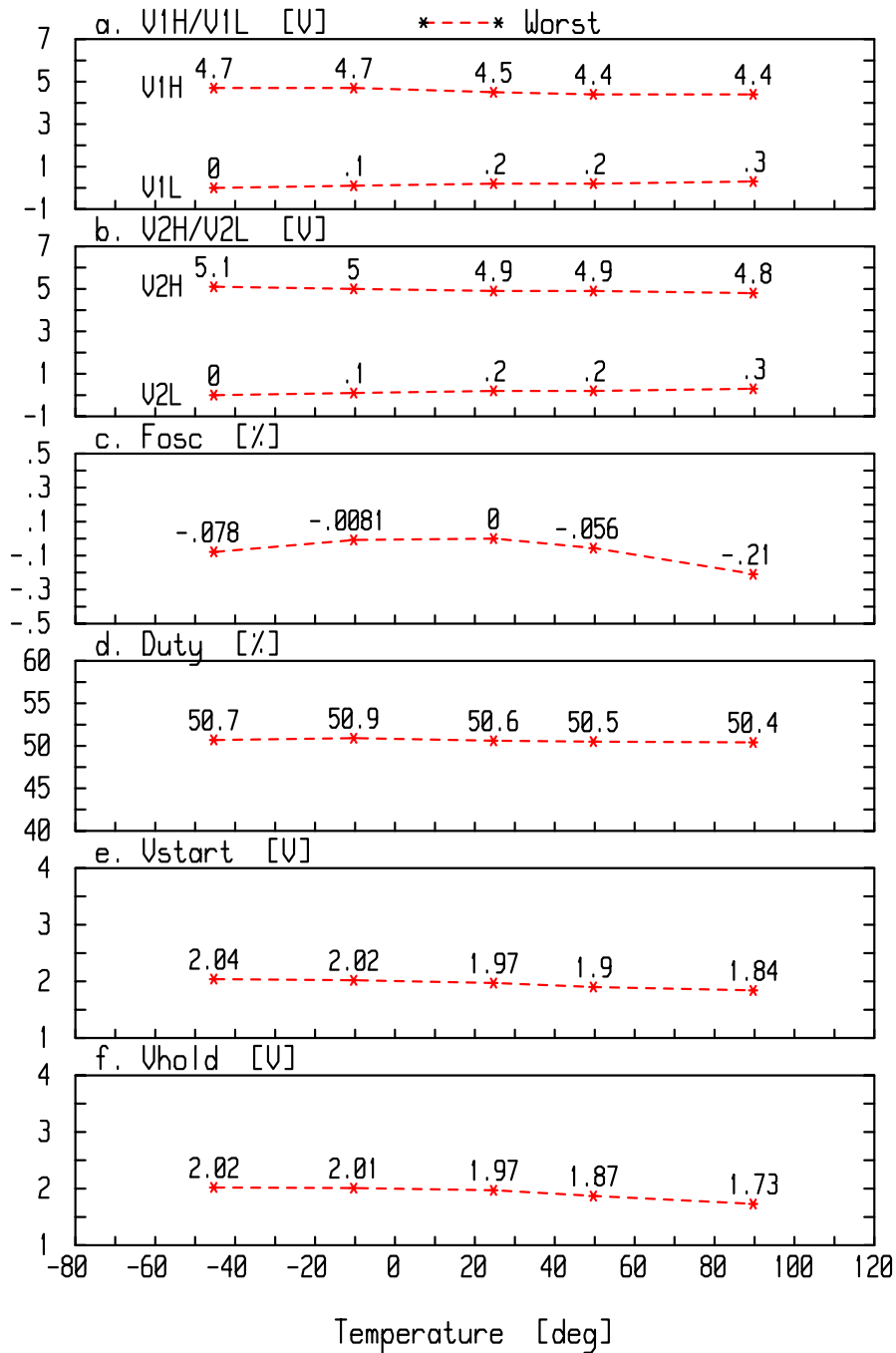


Temperature dependence of oscillating characteristics

R5F21258SNFP - TYP (LOW)

CCR10.0MXC8

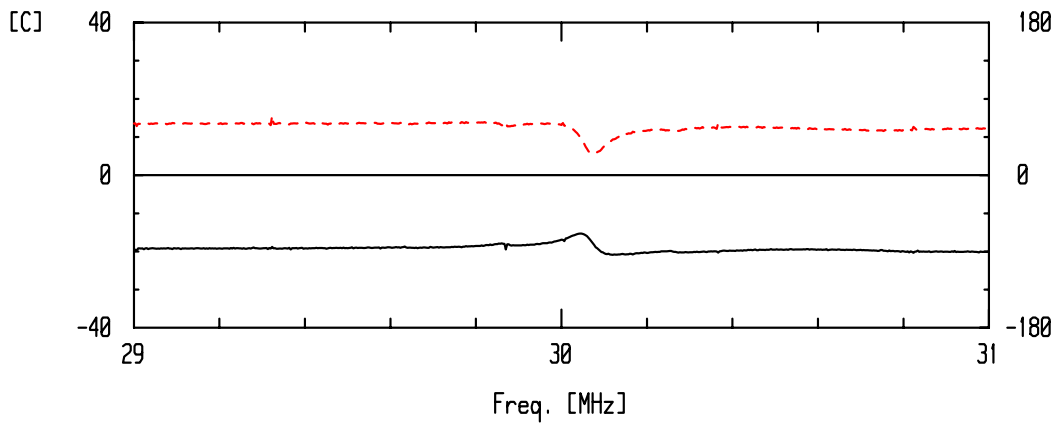
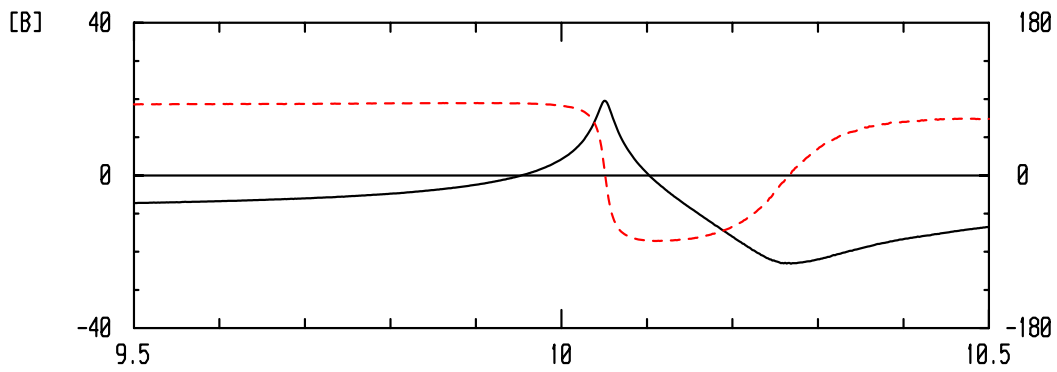
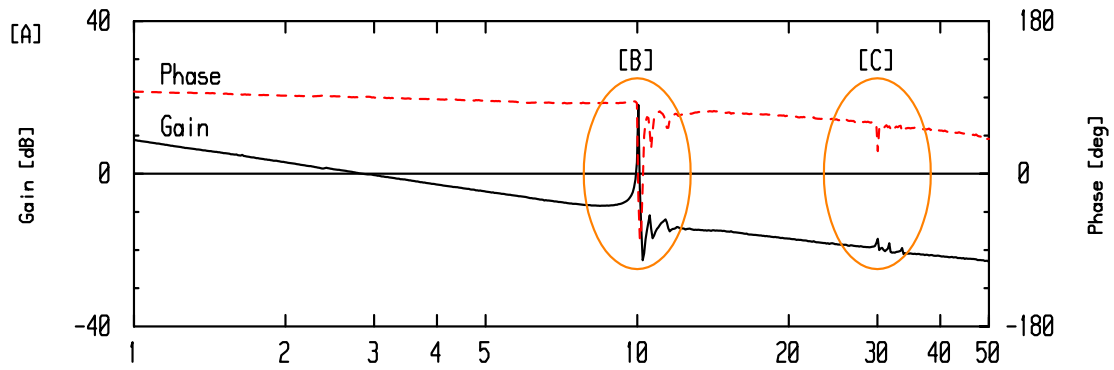
V_{dd} = 5 [V] (Fig. a~e)



Temperature dependence of oscillating characteristics

R5F21258SNFP - TYP(LOW)
 CCR10.0MXC8 - Typical
 Vdd [V] 5

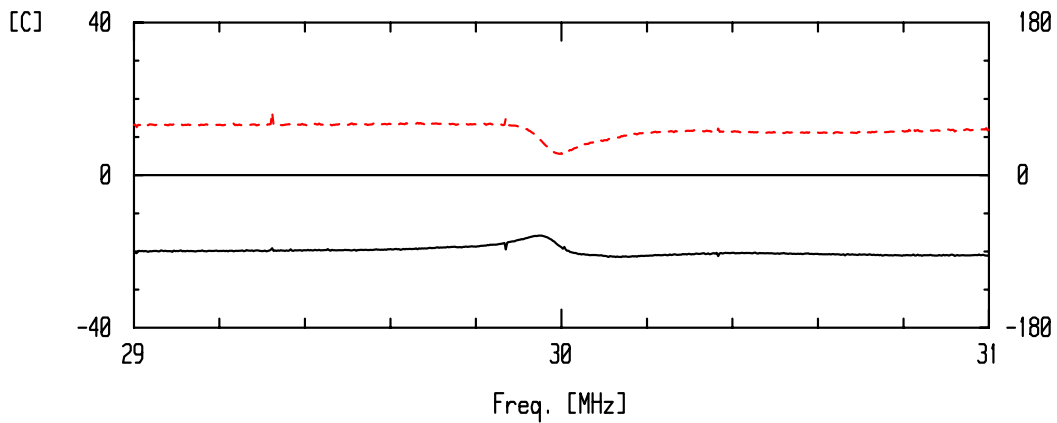
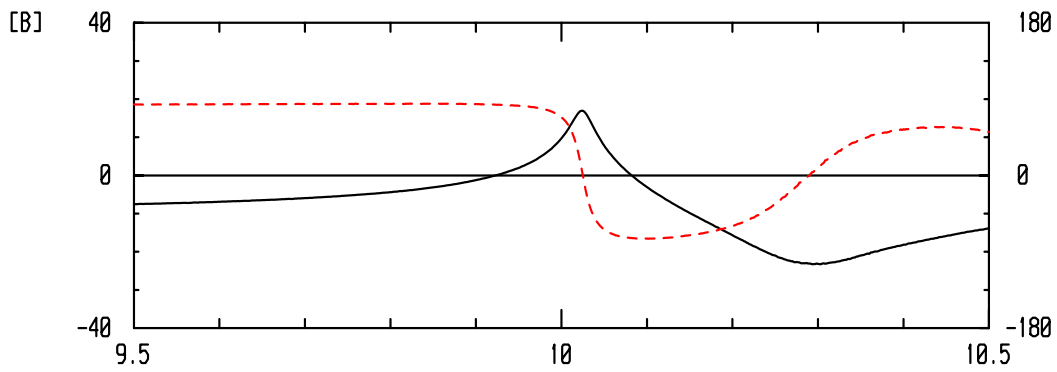
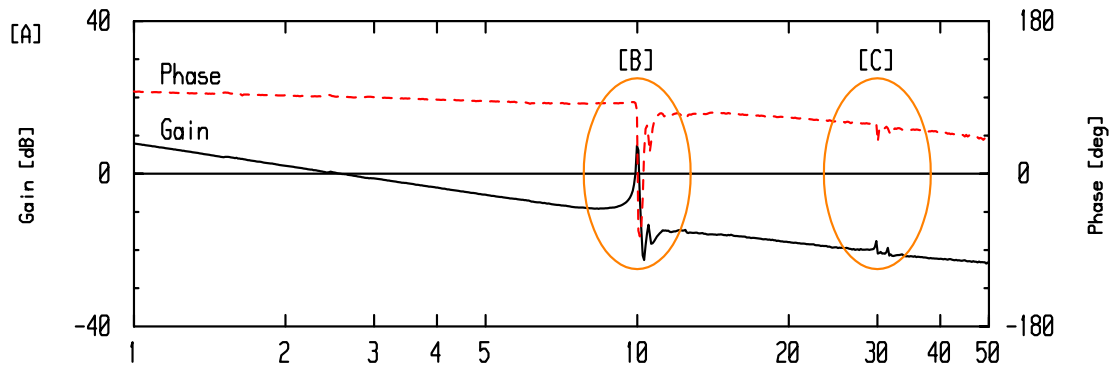
	[B]	[C]
Gmax [dB]	19.6	-15.3
LGM [dB]	19.6	0
FLGM [MHz]	10.052	0
LPM [deg]	-76.8	35.3



Open loop characteristics (Typical Sample)

R5F21258SNFP - TYP(LOW)
 CCR10.0MXC8 - Worst
 Vdd [V] 5

	[B]	[C]
Gmax [dB]	17	-15.9
LGM [dB]	17	0
FLGM [MHz]	10.0258	0
LPM [deg]	-73.8	35.5



Open loop characteristics (Worst Sample)