




Technical Data of Ceramic Resonator

MURATA Part No.: CSTCE20M0V53-R0

Applied to R5F21194SP(High)

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Product Engineering Service Section VI
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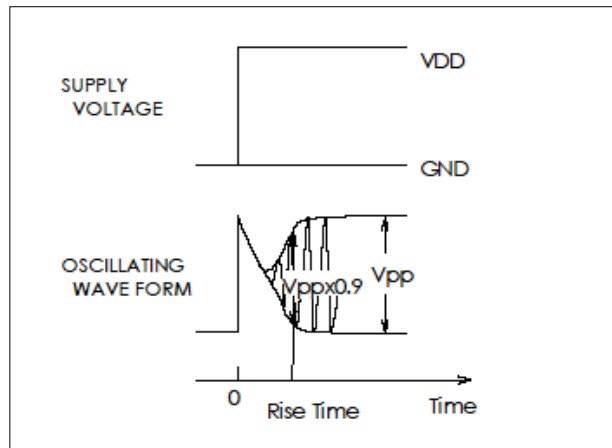
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Note : Rise Time

"Rise time" is defined as the time when oscillation voltage reaches 90% of full voltage swing after Vdd(Vset) is supplied.

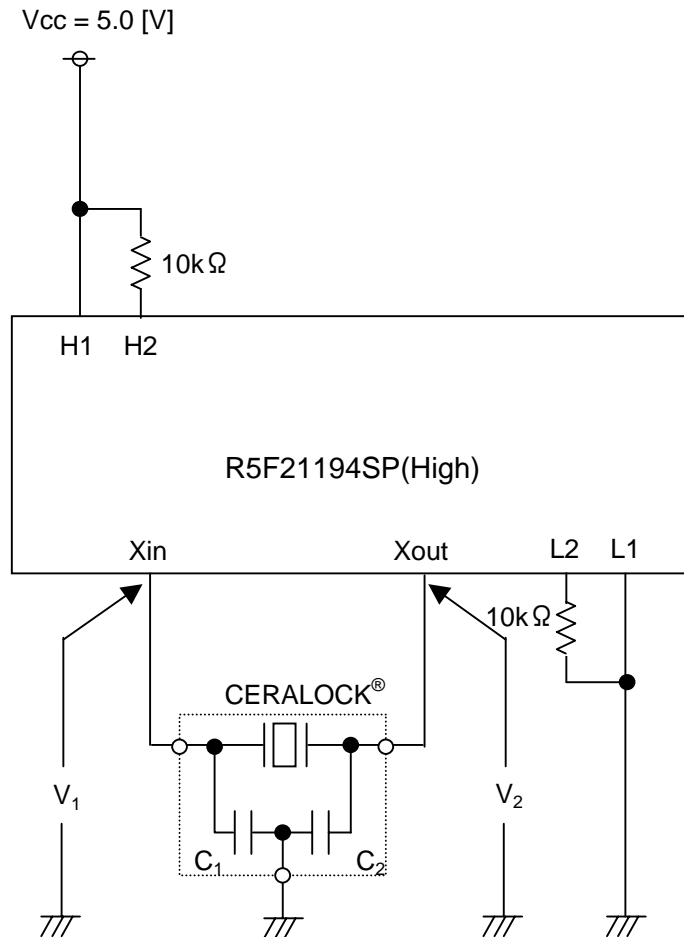


In the case that rising time of Vdd(Vset) is slow comparing to resonator's rise time due to the bypass capacitor, resonator's rise time is also slow because it depends on rising time of Vdd(Vset).

Also, in the case that the time supplying voltage to the oscillator circuit takes a certain time by reset time etc after Vdd(Vset) is applied, resonator's rise time is also slow.

In these case, we will describe "Unable to measure" in rise time data, because we can not measure resonator's rise time correctly.

Test Circuit



Xin : 6

Xout: 4

H1 : 3,7

L1 : 5

H2 : 8,10

L2 : 2

Recommended Value

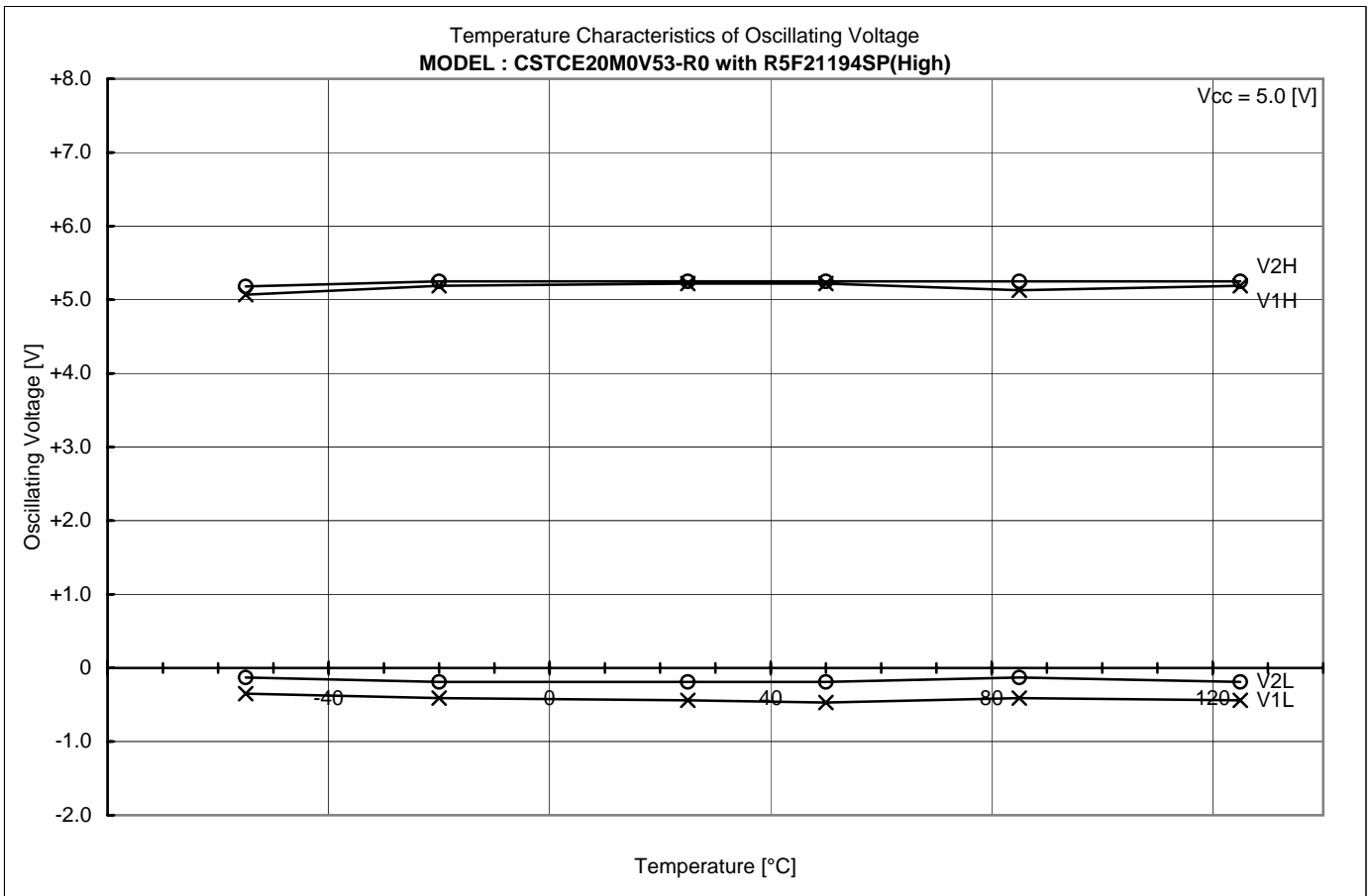
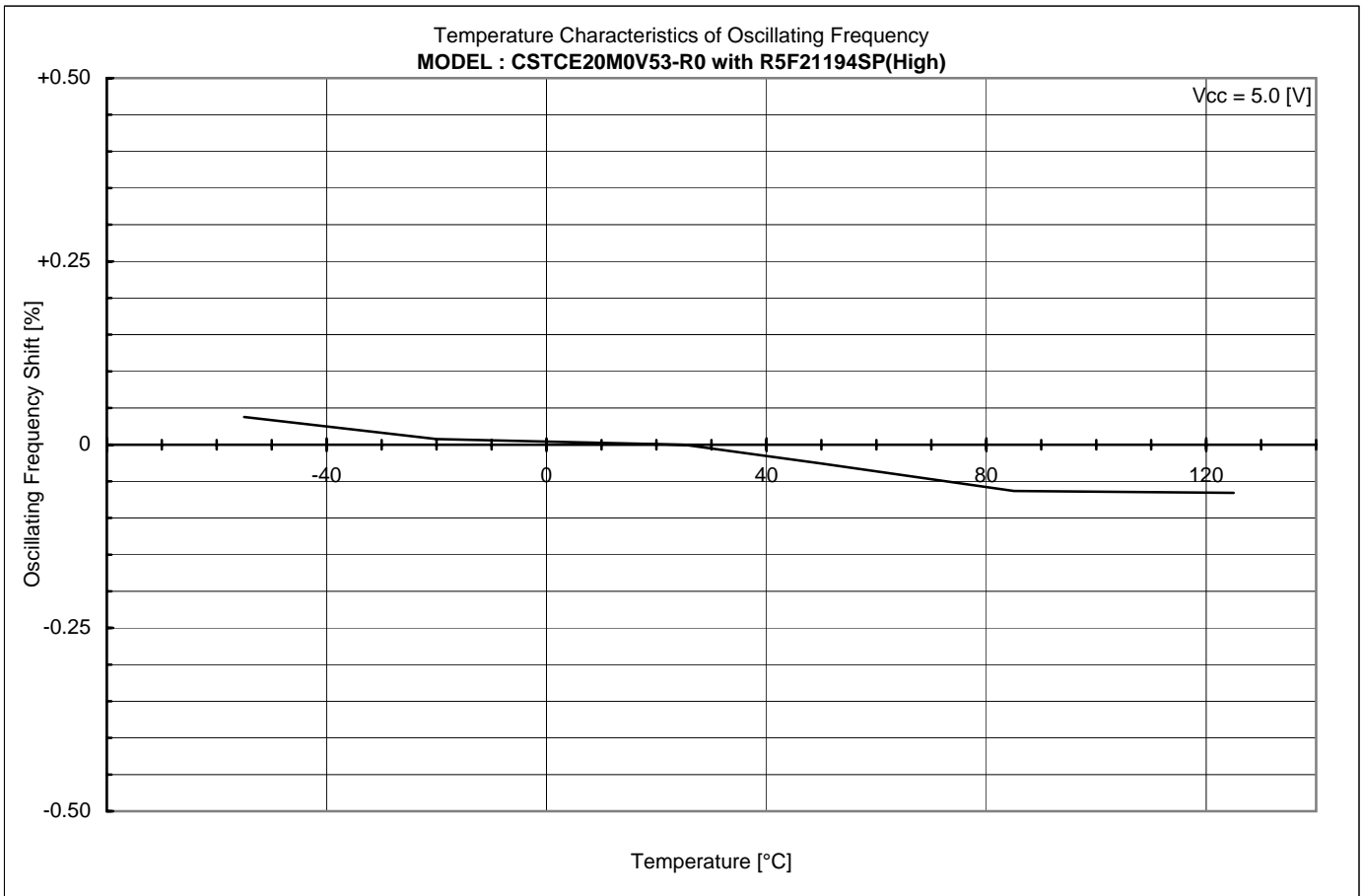
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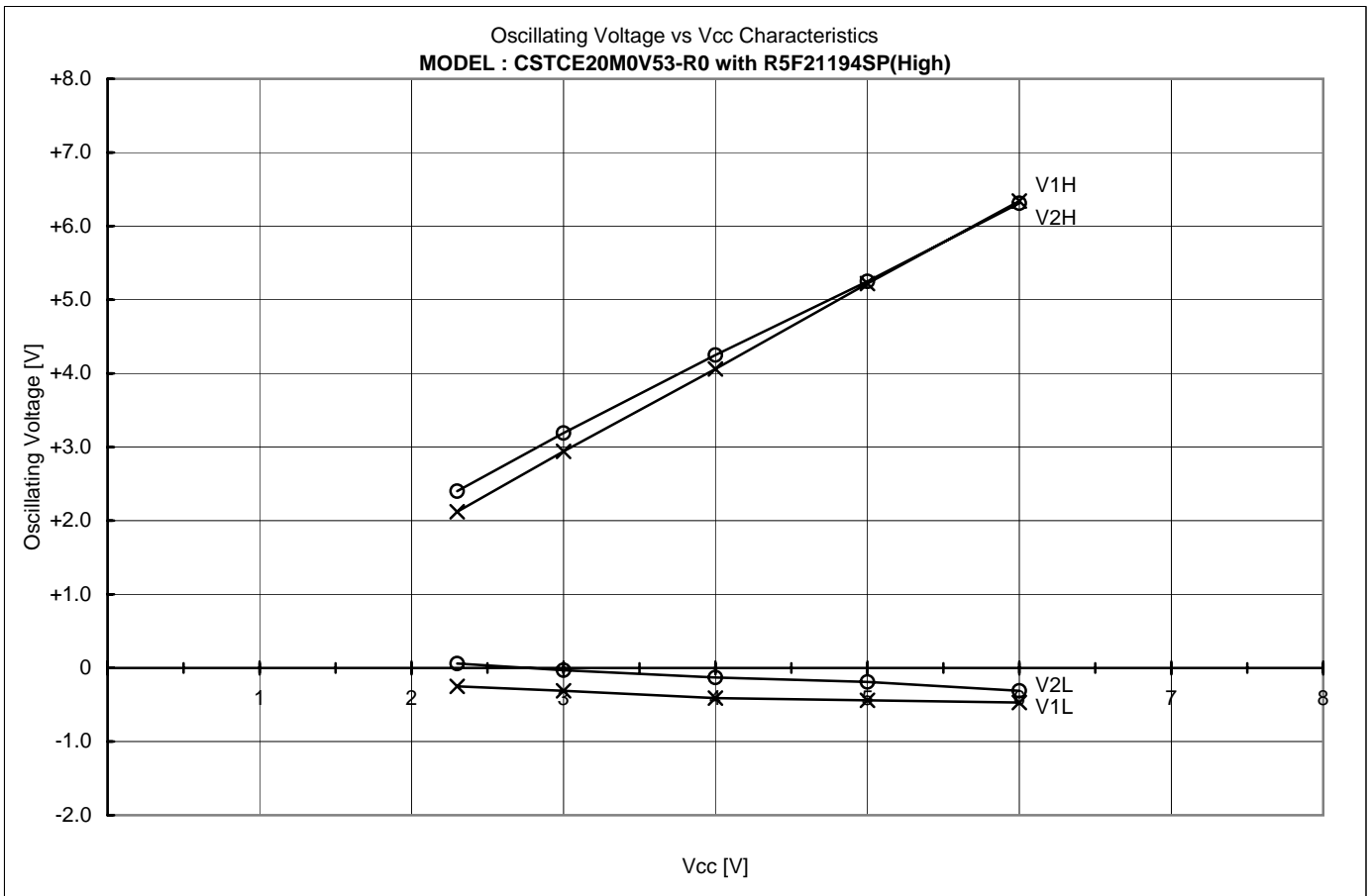
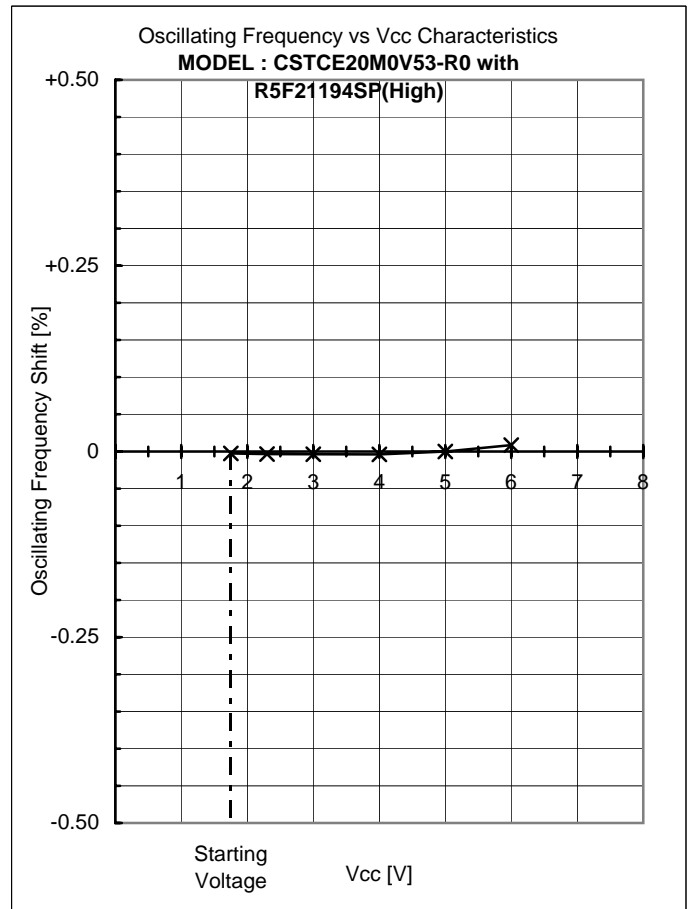
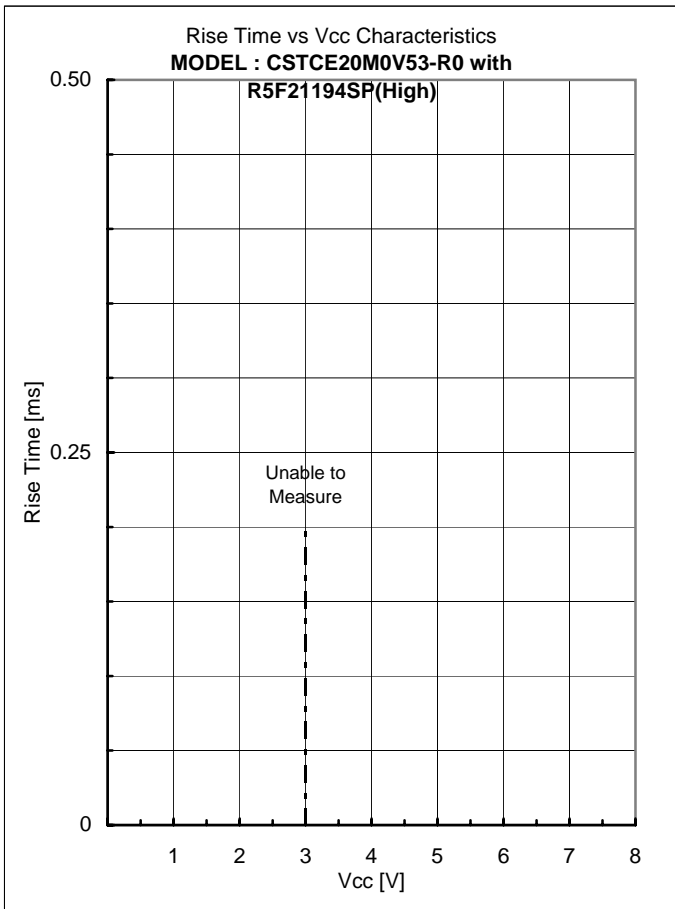
Vcc = 2.7 to 5.5 [V]

C1 = 15 [pF] (Typ.)

C2 = 15 [pF] (Typ.)

Ta = -40 to 85 [°C]





Appendixes

4. Comparison Table

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Comparison Table

IC : No	V1H [V]	V1L [V]	V1p-p [V]	V2H [V]	V2L [V]	V2p-p [V]	Fosc [kHz]	Trise [ms]	Vstart [V]
TYP	5.22	-0.44	5.66	5.25	-0.19	5.44	20012.639	Unable to	1.75
LL	5.28	-0.41	5.69	5.25	-0.19	5.44	20013.851	Measure	1.55
LH	5.16	-0.44	5.60	5.31	-0.13	5.44	20011.279		1.69
HL	5.28	-0.41	5.69	5.19	-0.19	5.38	20011.239		1.69
HH	5.22	-0.44	5.66	5.25	-0.19	5.44	20012.325		1.79

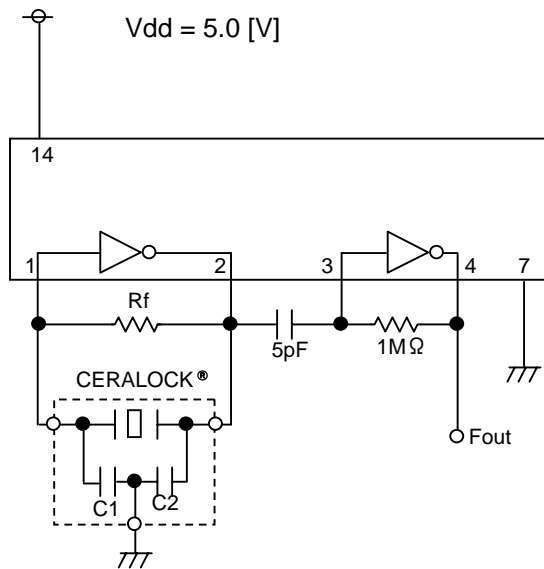
Ref.

Performance described page 2 to 3 were measured with IC No. TYP

Frequency Correlation Data

Sample No.	R5F21194SP(High) Fosc [kHz]	TC74HCU04AP Fosc [kHz]	Shift [%]
1	20027.798	19986.200	0.2081
2	20029.196	19984.200	0.2252
3	20003.047	19955.300	0.2393
4	20000.342	19956.100	0.2217
5	20021.326	19976.800	0.2229
\bar{X}	20016.342	19971.720	0.2234

muRata Standard Circuit



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C1 = 15 [pF]

C2 = 15 [pF]

Rf = 1 [Mohm]