

List of Abbreviations

ADC	Analog to Digital Converter
DSP	Digital Signal Processor
CT	Continuous Time
OTA	Operational Transconductance Amplifier
OTA-C	Operational Transconductance Amplifier and Capacitor
BiCMOS	Bipolar Complementary Metal Oxide Semiconductor
CMOS	Complementary Metal Oxide Semiconductor
GaAs	Gallenium Arsenide
MLF	Multiple Loop Feedback
LC	Inductor Capacitor
IF	Intermediate Frequency
SAW	Surface Acoustic Wave
Gm-C	Transconductance Amplifier and Capacitor
FM	Frequency Modulation
GSM	Global System for Mobile Communication
TSMC	Taiwan Semiconductor Manufacturing Corporation
CMOS	Complementary Metal Oxide Semiconductor
SoC	System on Chip
OP-AMP	Operational Amplifier
PC	Personal Computer
SC	Switched Capacitor
LTI	Linear Time Invariant
RF	Radio Frequency
LO	Local Oscillator
LNA	Low Noise Amplifier
VGA	Variable Gain Amplifeir
PLL	Phase Lock Loop
VCO	Voltage Controlled Oscillator
GBW	Gain Bandwidth

WLAN	Wireless Local Area Network
LHP	Left Hand Pole
LCMFB	Local Common Mode Feedback
CAD	Computer Aided Design
PSRR	Power Supply Rejection Ratio
CMRR	Common Mode Rejection Ratio
SR	Slew Rate
THD	Total Harmonic Distortion
SFDR	Spurious Free Dynamic Range
ICMR	Input Common Mode Range
GVO	Gate Voltage Overdrive
LF	Leapfrog
PRB	Primary Resonator Block
FLF	Follow the Leader Feedback
WCDMA	Wireless Code Division Multiple Access
NSDR	Negative Source Degeneration
RF	Radio Frequency
WCM	Wilson Current Mirror
CCM	Cascode Current Mirror
LHP	Left Half Plane
RHP	Right Half Plane
VCF	Voltage Controlled Filter
VCO	Voltage Controlled Oscillator
PLL	Phase Lock Loop
CA	Capacitor Array
3G	Third Generation
4G	Fourth Generation
dB	Decibel
GBW	Gain Bandwidth

List of Symbols

f_{clk}	Clock Frequency
V-I	Voltage to Current Convert
T_s	Sampling Period
f_{IF}	Intermediate Frequency
Q	Quality Factor
C	Capacitance
ϵ_0	Permittivity
ϵ_r	Relative Permittivity
W	Width of Transistor
L	Length of Transistor
C_{ox}	Oxide Capacitance
g_m	Transconductance
A	Feedback Gain
V_i	Input Voltage
i_0	Output Current
I_D	Drain current
Φ_F	Fermi Potential
γ	Body Constant
V_{TH}	Threshold Voltage
V_{GS}	Voltage between Gate and Source
μ_n	Mobility of Electron
p	Pole
z	Zero
A_{DM}	Differential gain
A_{CM}	Common mode gain

φ_m	Phase margin
β	Feedback factor
$\frac{dV_{out}}{dt}$	Rate of change of output voltage with respect to time
p_n	Power of the nth harmonic
s_n	Spectral Density
H_n	Magnitude Response
P_{signal}	Signal Power
P_{Noise}	Noise Power
C_L	Load Capacitor
R_i	Input Resistance
R_o	Output Resistance
I_{SS}	Bias Current
f_t	Cutoff Frequency
C_T	Tail Capacitor
C_M	Mirror Capacitor
λ_p	Channel length modulation for PMOS
λ_n	Channel length modulation for NMOS
T	Temperature
K	Constant
q	Charge
K_f	Flicker Coefficient
Δf_n	Noise Bandwidth
I_{nd}^2	Drain Thermal Noise
V_{ng}^2	Gate Thermal Noise
$1/f$	Corner frequency

τ_w	Delay
S_x^p	Sensitivity in p
N(s)	Numerator Polynomial
D(s)	Denominator Polynomial
S_{11}	Input Reflection Coefficient
S_{12}	Reverse Transmission
S_{21}	Forward Transmission
S_{22}	Output Reflection Coefficient