



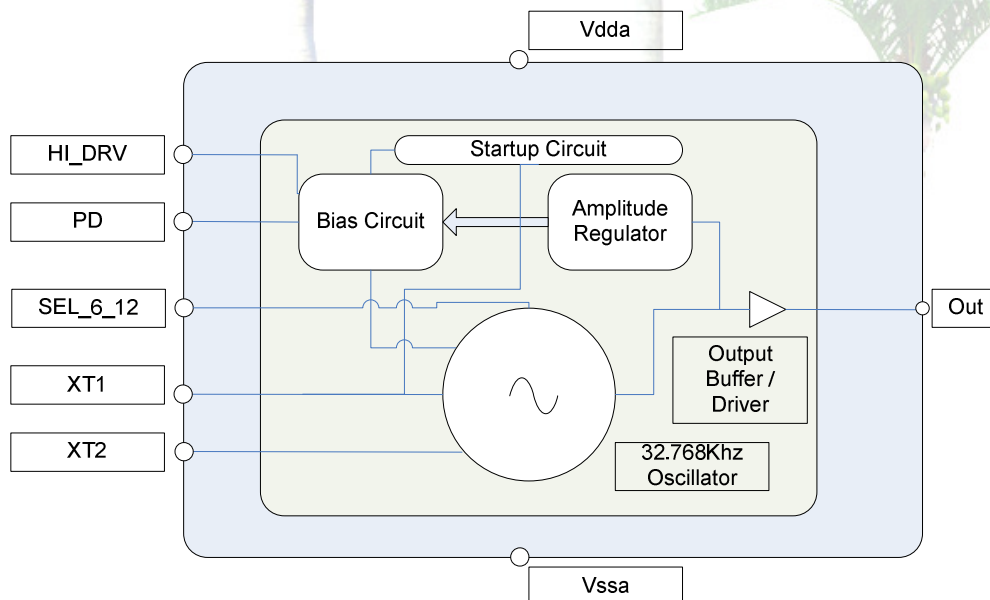
CoCo ChIP Ultra NanoPower 32.768 Khz Quartz Oscillator Specifications

Functional Description

- This is a 32.768Khz Quartz crystal oscillator with ultra low power
- Typical supply current less than 35nA with “average” Q-factor quartz crystals (Q>40,000)
- Oscillator includes built-in output buffer that generates rail-to-rail output for driving CMOS gate
- Quartz load caps built-in internal to the oscillator block
- Designed for IBM 0.18uM process (Ask CoCo about other process conversions)
- Oscillator is self biased and requires NO external feedback resistor
- Can be driven by external signal (up to 50Mhz) at XT1 input for test or bypass mode
- Vdd can be 1.8V or lower down to 1.2V
- Built-in Proactive Start Up Circuit ensures reliable start-up
- Selectable 6pF or 12pF load cap 32Khz quartz crystal types
- High Drive input boosts crystal drive level if desired

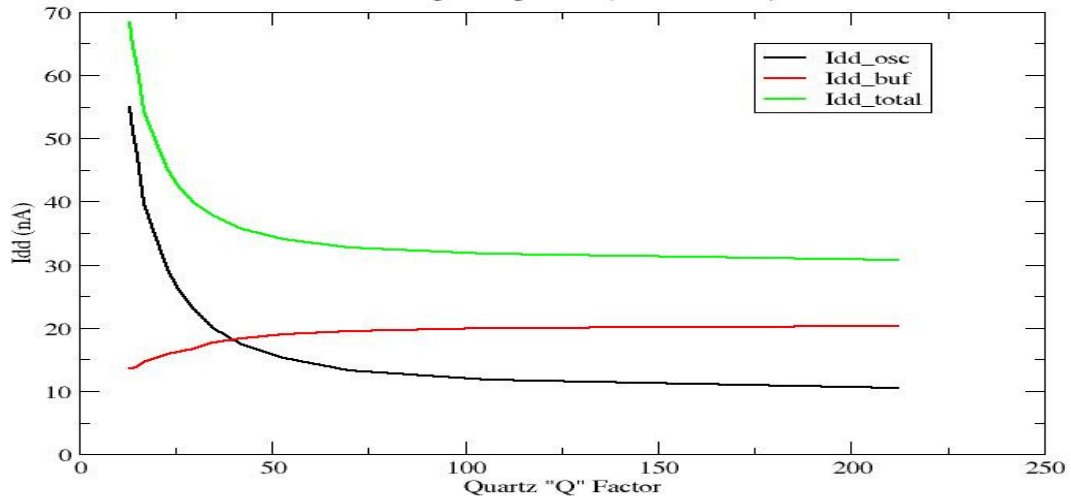
Connections

Pin	Type	Function
PD	DI	Power Down, Active High
Out	DO	32Khz Clock output
Vdda	Supply	Positive analog supply voltage
XT1	Analog	Quartz Crystal Node #1
XT2	Analog	Quartz Crystal Node #2
SEL_6_12	DI	Select 6pF or 12pF 32Khz XTAL types
HI_DRV	DI	Selects High XTAL Drive Power Level
Vssa	Supply	Negative Analog supply voltage

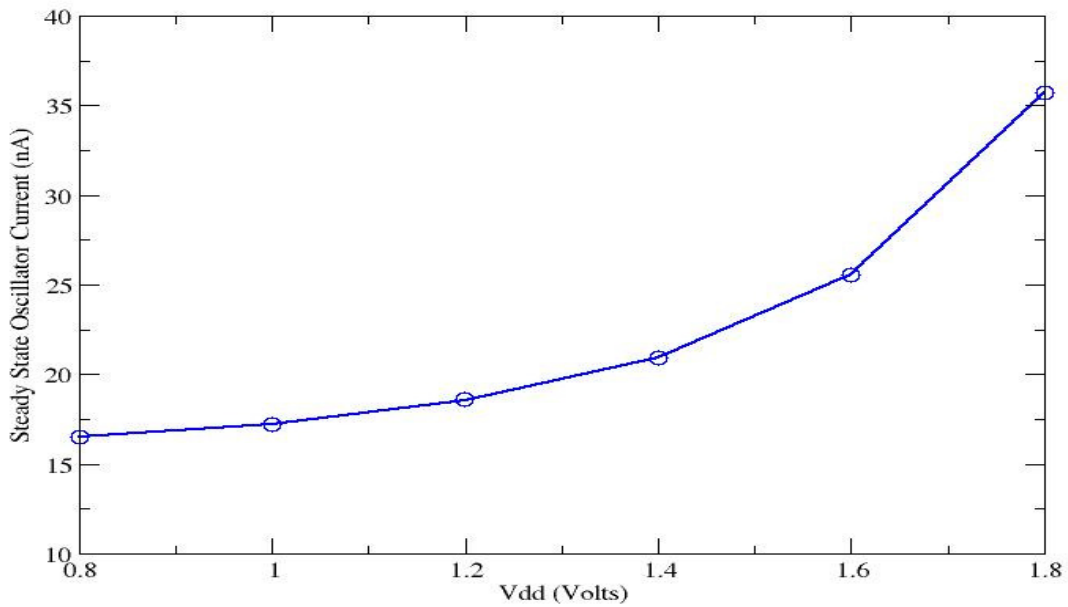


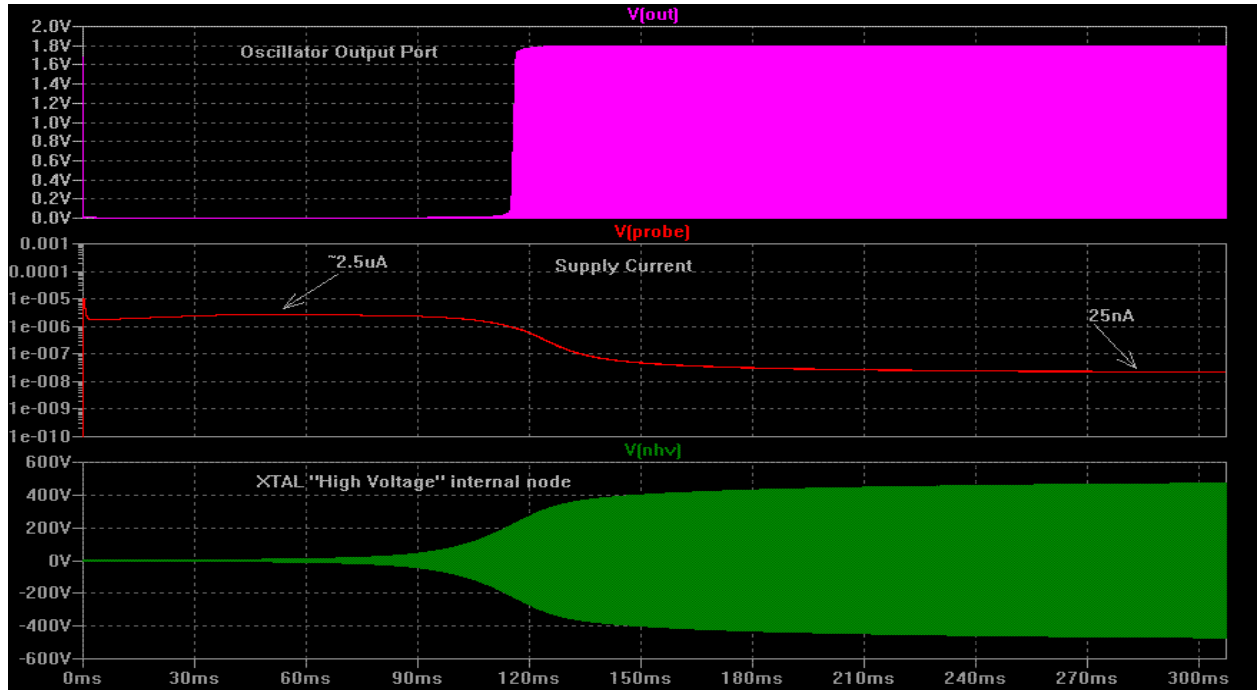


Steady State Supply Current
versus Quartz Q Factor (Vdd=1.8V TT)

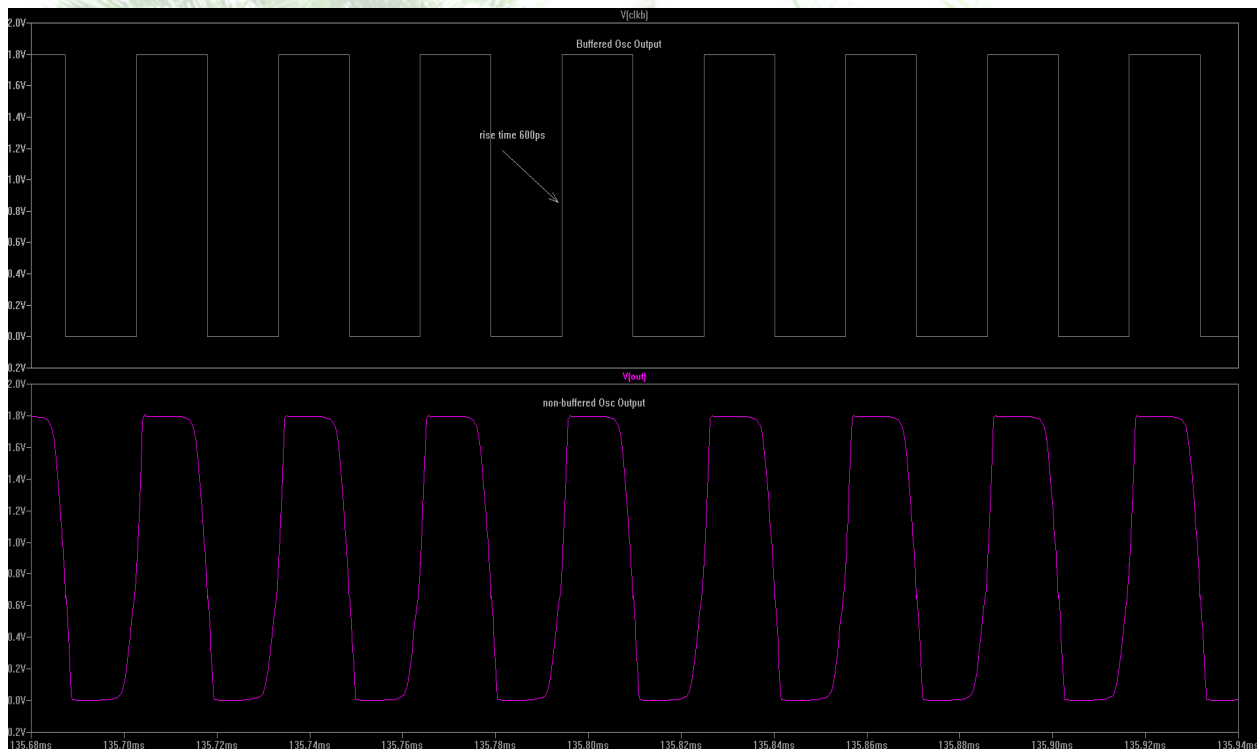


Oscillator Idd versus Vdd





Oscillator Start-up Waveforms



Zoomed Oscillator Waveforms after stabilization