

PLL Model: PT626-13

Issue 2; 28th April 2022

Features

- Temperature stability to ± 5 ppb
- Very Low phase noise options
- Standard frequency range (1 to 500) MHz
- Low pre-aged options available
- Reference 10 MHz to 500 MHz, 10 MHz standard.
- Low phase noise frequency translation.
- Holdover dependant on option A, B or C
- The flexible nature of the design means that variations to suit almost any application can be developed to meet individual customer requirements



Option A

- Temperature stability ± 5 ppb over (0 to 50) $^{\circ}$ C
- Output: CMOS 15pF, 45% 55% or Sinewave 0dBm
- Voltage: 5.0V 12.0V
- Warm up Current: 560mA 390mA
- Quiescent current: 320mA 170mA

Option B

- Temperature stability : ± 10 ppb over (-20 to 70) $^{\circ}$ C
- Output: CMOS 15pF, 45% 55% or Sinewave 0dBm
- Voltage: 5.0V 12.0V
- Warm up Current: 560mA 390mA
- Quiescent current: 320mA 170mA

Option C

- Temperature stability : ± 20 ppb over (-40 to 70) $^{\circ}$ C
- Output: CMOS 15pF, 45% 55% or Sinewave 0dBm
- Voltage: 5.0V 12.0V
- Warm up Current: 560mA 390mA
- Quiescent current: 320mA 170mA

Phase Noise (typical)

- F_0+10 Hz -125 dBc/Hz
- F_0+100 Hz -145 dBc/Hz
- F_0+1 KHz -155 dBc/Hz
- F_0+10 KHz -160 dBc/Hz
- F_0+100 KHz -165 dBc/Hz

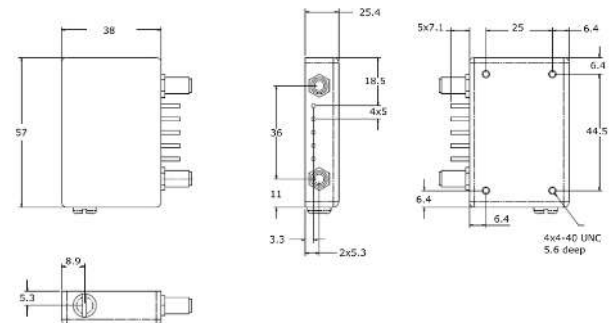
Values based on a 10MHz unit

Phase noise locked dependant on reference.

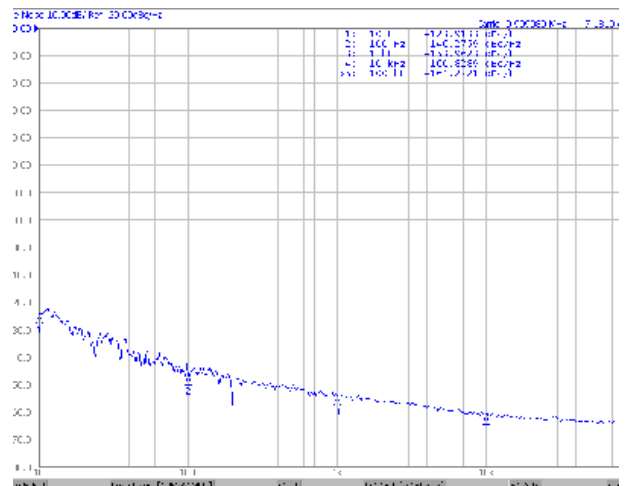
Voltage / Load change

- $\pm 5\%$ supply voltage change: ± 2 ppb
- $\pm 10\%$ load change: ± 10 ppb

Dimensions (mm)



Phase Noise Plot



Ageing:

Based on 10MHz unit after 30 days continuous operation:

- Per day: ± 0.1 ppb max.
- Per year: ± 50 ppb max.
- Warm up time: 2 minutes to within 0.1 ppm

Voltage Trim:

- 0.5ppm minimum
- Fine adjust through side screw.

Reference Options:

- N/A

Environmental

- Electrostatic-Sensitive Device (ESD)
- Storage Temperature Range: (-40 to +125) $^{\circ}$ C
- Mechanical shock: MIL standard 202F, method 213, condition J
- Thermal shock: MIL standard 202F, method 107, condition A
- Vibration: MIL standard 202F, method 204, condition B
- Solderability: 5 seconds maximum at 230 $^{\circ}$ C
- 3 seconds maximum at 350 $^{\circ}$ C

Compliance

- RoHS Status (2011/65/EU) - Compliant
- REACH Status - Compliant

Packaging

- Pack Style: Bulk

Ordering Information

- Unique customer part number and custom specification issued with each application
- PLL model: PT626-13
- Frequency: (1 to 500) MHz
- Stability/Output/Voltage Option: A, B or C
- Supply voltage code: V2= +5Vd.c. supply
- V3= +12Vd.c. supply

Connections

Reference Input

#1 Lock Detect

#2 Reference Detect

#3 Vcc

#4 Tune

#5 ground

RF out

Reference input > -10 dBm

Lock Status

Ref DT

Lock DT

high

low

Reference present, no lock

low

high

Spurious lock

high

high

Full operational lock

Test Circuit - Sinewave

