OCXO 8660/ 8661
Oven Controlled Crystal Oscillator

Product description

The 866x series is a double oven crystal oscillator featuring an AT cut 3rd overtone resonator.

Features

- 3rd overtone crystal resonator
- Wide operating temperature range (- 20°C to 70°C)
- Sine or HC-MOS / TTL-compatible output

Benefits

- Selectable long term stability
- Optimal for use in adverse conditions
- Easily interfaces with analogue or digital circuits
- Fits all telecommunications requirements

Applications

- Precise time keeping and navigation equipment :
  GPS, Loran-C and OMEGA receivers
- Low phase noise frequency synthesizers spectrum analysers and test instruments
- Reference clock for digital telecommunications equipment:
  Switching, MUX, PABX, DACS
- Cellular/Paging control/Transceiver stations
  BCS/BTC
- Clock reference for equipment calibration

Edition April 2003

OSCILLOQUARTZ
A COMPANY OF THE SWATCH GROUP

Oscilloquartz S.A. Rue des Brévards 16, 2002 Neuchâtel, Switzerland / Tel +41 32 722 55 55 / Fax +41 32 722 55 12
Email: osa.xo@oscilloquartz.com / Internet: www.oscilloquartz.com

OCXO 8660/ 8661
Technical Specification

Standard / Option	Standard	Option
Crystal resonator	AT-cut, 3rd overtone	
Standard frequencies	4.096/5/8.192/10/16.384 MHz	6.4/12.8/12.96/13/13.5 MHz
Operating temperature range (X)	**A** : - 20°C to +70°C	**B** : 0°C to +70°C **C** : 0°C to +60°C
Frequency stability (Δf/f)		
Long term stability (aging after 30 days of continuous operation)	5 x 10^{-10}/day 1.2 x 10^{-9}/month 1 x 10^{-7}/year	**G** : 2 x 10^{-10}/day see table
Over temperature range (Y)	Std : < 8 x 10^{-9} pp	**4** : < 4 x 10^{-9} pp see table
Versus supply voltage changes (Vcc ± 5%)	< 5 x 10^{-10}	
Versus load changes (50Ω ± 10%)	< 5 x 10^{-11}	
Short term stab. σ (τ) (0.2 to 10s)	< 5 x 10^{-11}	
Electronic frequency control	> ± 1.0 ppm (0 to +10 Volts) / Maximum slope deviation < 10%	
Power Supply (P)		
Input voltage range (DC)	**8660:** +24 Volts ± 5% **8661:** +12 Volts ± 5%	Consult factory for other voltages
Power consumption	< 2.5 W after warm-up at +25°C. < 8W during warm-up	
Environment		
Storage temperature	- 40°C to +125°C	
Vibration	MIL-STD 167-1	
Shock	50 g, 11ms, 3 shocks in each direction of the main axis	
Size (L x W x H)	51.1 x 41.1 x 31 mm (2.01" x 1.62" x 1.22")	
Weight	100 g	
Outline and electrical connections	See drawing	
Outputs Characteristics (Z)	**S**	**T**
Wave form	Sine	Square
Level (Tol.) / Impedance	0.2 Vrms (-10 +20%) / 50Ω	HCMOS / TTL compatible
Phase noise	see table	consult factory
Harmonics	< - 25 dBc	not applicable
Spurious	< - 70 dBc	not applicable
Symmetry	not applicable	40% - 60%
Rise / Fall time (10 / 90%, 12pF)	not applicable	10 ns
Internal reference voltage		
Pin 3 : Vref out (R_{Load} > 20 kΩ)	6.5 to 8.5 Volts (source resistance 1 kΩ)	
Stability vs temperature range	Vref out ± 3 mV	

Edition April 2003

OSCILLOQUARTZ
A COMPANY OF THE SWATCH GROUP

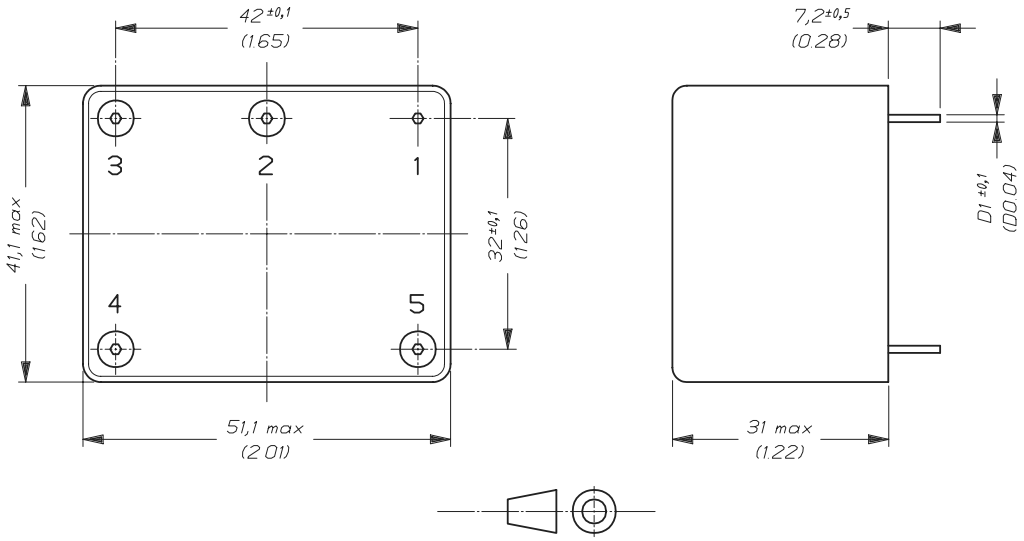
Phase noise (BW = 1 Hz)

Frenquencies		5 MHz	8.192 MHz	10 MHz
Phase noise	**1Hz**	- 95 dBc	- 90 dBc	- 90 dBc
	10Hz	-125 dBc	-120 dBc	-120 dBc
	100Hz	-135 dBc	-135 dBc	-135 dBc
	1'000Hz	-145 dBc	-145 dBc	-150 dBc

Aging

Applicable for 5 / 8.192 / 10 MHz	**Standard**	**Option G**
Aging per day	5 × E-10/day	2 × E-10/day
Aging per year	1 × E-7/year	5 × E-8/year
after continuous operation of	30 days	30 days

Outline and Electrical connections
All dimensions in mm (inches)



Pin out connections
1: GND
2: Vc input
3: Vref out
4: +Power supply
5: Output

OCXO 8660/ 8661
Ordering Information

Example : **8660 - A - 4 - S - G - 5 MHz**

Type

Model
0: +24V $_{DC}$

Operating temperature range code
A: Standard

Frequency stability over temperature range
4: < 4E-9 peak peak

Output signal
S: Sine wave

Option aging
G: 2E-10/day

Nominal frequency output
5 MHz

OSCILLOQUARTZ
A COMPANY OF THE SWATCH GROUP

Edition April 2003