



OXC0 8682 / 8683

Oven Controlled Crystal Oscillator

Product Description

The 8682/3 series offer superior stability performances in a 50.8 x 50.8 x 25mm (2"x2"x0.98") industry standard package.

Its frequency drift due to temperature variations is minimized by using SC Cut crystals and double oven technology. This technique enables the crystal resonator to operate at a constant temperature, leading to a minimum frequency deviation (down to 2×10^{-10}) regardless of the ambient temperature range.

The guaranteed aging performance is between 1 and 3 E-8/year. The long term stability of the OXC0 allows a reachable operational period of up to 15-20 years.

Sine or HC-Mos compatible outputs are available. Furthermore, with a US industry standard footprint, the oscillator will provide a compact solution for new developments and an excellent second source for existing designs.

Phase noise L (f) (BW = Hz)		
Frequency	5 MHz	10 MHz
Phase noise 1Hz	- 100 dBc	- 90 dBc
10 Hz	- 130 dBc	- 120 dBc
100 Hz	- 140 dBc	- 135 dBc
1k Hz	- 145 dBc	- 145 dBc
10k Hz	- 145 dBc	- 145 dBc
100k Hz	- 145 dBc	- 145 dBc

Frequency stability vs temperature range	Standard	Option 1	Option 6	Option 2
Frequency stability (peak to peak)	4×10^{-9} pp	1×10^{-9} pp	6×10^{-10} pp	2×10^{-10} pp
Valid for temperature range	A / B / C	A / B / C	A / B / C	A / B / C

Features

- SC cut 3rd overtone crystal resonator
- Wide operating temperature range (- 20°C to 70°C)
- Sine or HC-MOS / TTL-compatible output
- Thermal stability and ageing
- Option Low phase noise / Low ageing

Benefits

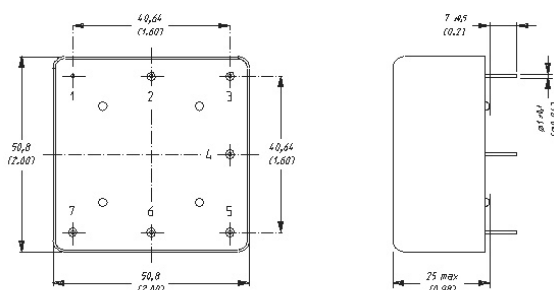
- Selectable long term stability
- Easily interfaces with analog or digital circuits
- Fits all telecommunications requirements
- Low profile 25mm (<1 inch) high

Applications

- Precise time keeping and navigation equipment:
 - GPS/GSM/UMTS/CDMA
- Stratum II & III
- Base station

Outline and Electrical connections

All dimensions in mm (inches)



Pin-out connections

- 1: GND
- 2: Oven control (option)
- 3: +Power supply
- 4: Alarm oven control (option)
- 5: Vc input
- 6: Vref out
- 7: Output frequency

Technical Specifications

OCXO 8682 / 8683

Oven Controlled Crystal Oscillator

Standard / Option	Standard	Option
Crystal Oscillator	SC-cut, 3rd overtone	
Standard frequencies	4.096/5/8.192/10/16.384 MHz	4.096 to 40.000 MHz
Operating temperature range	A: -20°C to +70°C	B: 0°C to +70°C C: 0°C to +60°C
Frequency stability (D f/f)		
Long term stability Std G : aging after 30 days of continuous operation **H : aging after 60 days of continuous operation ***J : aging after 90 days of continuous operation	2x10 ⁻¹⁰ /day 5x10 ⁻⁹ /month 3x10 ⁻⁸ /year	G : 1x10 ⁻¹⁰ /day ** H : 5x10 ⁻¹¹ /day ***J : 3x10 ⁻¹¹ /day See table
Over temperature range	Std : < 4x10 ⁻⁹ peak to peak	2: : <2x10 ⁻¹⁰ peak to peak See table
Versus supply voltage changes (Vcc ± 5%)	< 3x10 ⁻¹⁰	
Versus load changes (50Ω ± 10%)	< 5x10 ⁻¹¹	
Short term stability σ (τ) (0.2 to 10s) Allan variance	< 1x10 ⁻¹¹	
Electronic frequency control	>± 0,3 ppm (0 to +10 Volts) / Linearity < 5%	
Power Supply (P)		
Input voltage range (DC)	8682 : +24 Volts ± 5% 8683 : +12 Volts ± 5%	9V to 30V Consult factory
Power consumption	< 2.5W after warm-up at 25°C / < 8W during warm up	
Environment (Not operating)		
Storage temperature	-40°C to +125°C	
Vibration	MIL-STD 167-1	
Shock	50g, 11ms, 3 shocks in each direction of the main axis	
Size (L x W x H)	50.8 x 50.8 x 25 mm (2.00" x 2.00" x 0.98")	
Weight	100g	
Outline and electrical connections	See drawing	
Output Characteristics (Z)	S	T
Wave form	Sine	Square
Level (Tol.) / Impedance	> +4 dBm / 50Ω	HCMOS / TTL compatible
Phase noise	See table	Consult factory
Harmonics	< -25 dBc	Consult factory
Spurious in the frequency range up to 1MHz	< -70 dBc	Consult factory
Symmetry	Not applicable	40% - 60%
Rise / Fall time (10 / 90%, 12pF)	Not applicable	10 ns
Internal Reference voltage		
Pin 6 : Vref out (Rload > 20 kΩ)	Std 7.8 Volt / on request 6.0 to 8.5 Volts (source resistance 1 kΩ)	
Stability vs temperature range	Vref out ± 3 mV	

Ordering Information

868x A 1 S G 5 MHz

Model

3: +12VDC

Operating temperature range

A: Standard

Frequency stability over temperature range

1: < 1x10⁻⁹ peak to peak

Output signal

S: Sine wave

Nominal frequency output

5 MHz

Option aging

G: 1x10⁻¹⁰/day

Oscilloquartz SA reserves the right to change all specifications contained herein at any time without prior notice.



www.oscilloquartz.com



OSCILLOQUARTZ

SWATCH GROUP ELECTRONIC SYSTEMS