PHASE LOCKED CRYSTAL OSCILLATOR

Datasheet

AXON20

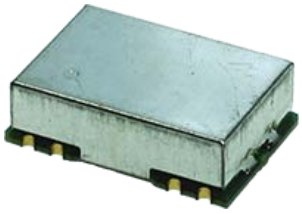
PLO - PHASE LOCKED CRYSTAL OSCILLATOR

Low phase noise through internal VCXO at output frequency

FEATURES

- SMD Package, size 20 x 13.1 x 6.1 mm.
- Phase Locked Crystal Oscillator (PLO)
- Low Phase Noise through internal VCXO at output frequency
- HCMOS Output logic
- Output frequency 10 to 160 MHz - Ref. freq. input 1 to 50 MHz

20 x 13.1 x 6.1 mm max.



Parameter	min.	typ.	max.	Unit	Condition
Reference frequency (input) f_{Ref}	1		50	MHz	
Output frequency f_{Out}	10		160	MHz	
Frequency stability				ppm	
Stability vs. operating temperature			± 10	ppm	Note 2
vs. supply voltage variation			± 2	ppm	V_S ± 5 %, Note 2
vs. load change			± 2	ppm	Load ± 10 %, Note 2
long term (aging) per year			± 2	ppm/y	@ +40°C, Note 2
Frequency locking					
VCXO Control Voltage (V_C) output	0.65		2.65	V	R_{in} = 470 k , Note 3
Frequency locking range	Lock on f_{Ref} under worst conditions over 10 years				
Lock detect (LD) output	LD = H PLL locked LD = L PLL out of lock				HCMOS levels
Loop filter Parameters					
Natural loop frequency f_N		TBD		Hz	Note 5
Phase margin F_R		TBD		°	Note 5
Channel spacing f_{Ch}		TBD		kHz	Note 5
Lock-in time			3	s	Note 5
Reference Input					
Frequency accuracy			± 2	ppm	
Level (peak-to peak)	0.5			V	Note 4
Input impedance	2			KΩ	
RF output					
Signal waveform		HCMOS			
Load		15		pF	
Rise & decay time			5	ns	
Symmetry (duty cycle)	40		60	%	@ V_S/2
Suppression of channel frequency spurs	80			dBc	@N·f_{Ch} and @f_{Out}±N· f_{Ch}
Other non harmonic spurious	100			dBc	
Phase noise		TBD			Note 6
Supply voltage V_S	3.13	3.3	3.47	V	
Current consumption (steady state)			50	mA	@ +25°C
Operating temperature range	-20		+70	°C	
Storage temperature range	-40		+85	°C	
Enclosure (see drawing)		20x13.1x6.1 max.		mm	IEC 61837-4 CO 29
Weight			9	gram	
Packing		Tape & reel			IEC 60286-3
ESD Sensitivity	1500			V	HBM as in IEC 61000-4-2

FCD-Tech B.V.
Stationsplein 99/259
1703 WE Heerhugowaard
Netherlands

Phone: +31 (0)20 8932140
Email: sales@fcd-tech.com
Website: www.fcd-tech.com

Datasheet

AXON20

PLO - PHASE LOCKED CRYSTAL OSCILLATOR

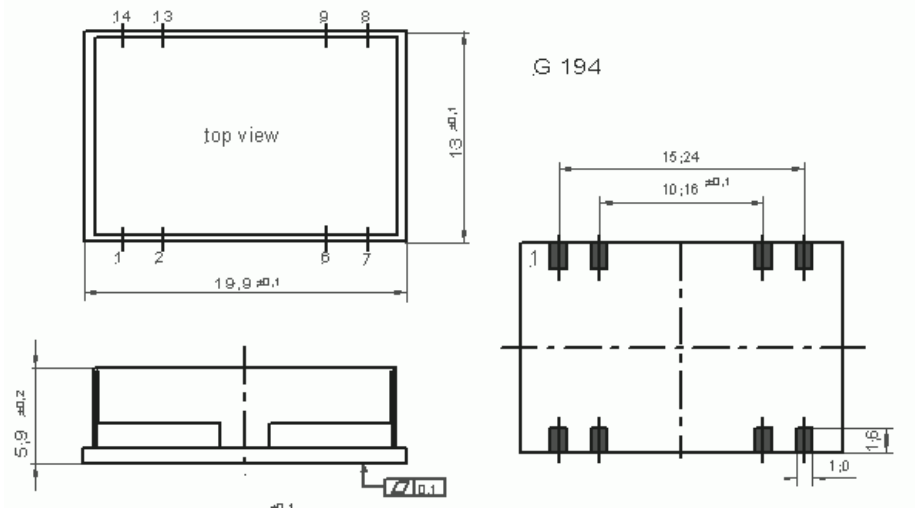
Notes:

1. Terminology and test conditions are according to IEC standard IEC60679-1, unless otherwise stated
2. Frequency not locked
3. Frequency locked
4. Sine wave or square wave
5. To be optimized to application w.r.t to phase noise and settling performance
6. Depends on Output frequency

Ordering Code

Model (Specification)	Input Frequency [MHz]	Output Frequency [MHz]
AXON20	10.000	61.840

Enclosure drawing



Pin connections (proposal):

Pin #	Symbol	Function
1	VC	VCXO Control Voltage Output
2	LD	Lock Detect Output
6	GND	Ground
7	GND	Ground
8	RF OUT	RF Output
9	GND	Ground
13	FREF	Reference frequency Input
14	VS	Supply Voltage

Environmental conditions

Test	IEC 60068 Part ...	IEC 60679-1 clause ...	Test conditions
Solderability Resistance to soldering heat	2-20 2-58	4.6.3	Test Ta (235 ± 5)°C Method 1 Test Tb Method 1A, 5s
Shock*	2-27	4.6.8	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	4.6.7	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Endurance tests - ageing - extended aging		 4.7.1 4.7.2	 30 days @ 85°C, OCXO @25°C 1000h, 2000h, 8000h @85°C

Rev. 1.2 Date : 01-10-2012

FCD-Tech B.V.
Stationsplein 99/259
1703 WE Heerhugowaard
Netherlands

Phone: +31 (0)20 8932140
Email: sales@fcd-tech.com
Website: www.fcd-tech.com