

Specification	AXON20	Issue: 01	Date: 2008-08-13
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Oscillator type : PLO - Phase-Locked Crystal Oscillator
Low phase noise through internal VCXO at output frequency

Parameter	min.	typ.	max.	Unit	Condition
Reference frequency (input) f_{Ref}	1		50	MHz	
Output frequency f_{Out}	10		125	MHz	
Frequency stability				ppm	
Stability vs. operating temperature			± 10	ppm	Note 2
vs. supply voltage variation			± 2	ppm	$V_S \pm 5\%$, Note 2
vs. load change			± 2	ppm	Load $\pm 10\%$, Note 2
long term (aging) per year			± 2	ppm/year	@ +40°C, Note 2
Frequency locking					
VCXO Control Voltage (V_C) output	0.65		2.65	V	$R_{in} = 470\text{ k}\Omega$, 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 Φ_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			k Ω	
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	@ $N \cdot f_{Ch}$ and @ $f_{Out} \pm N \cdot f_{Ch}$
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

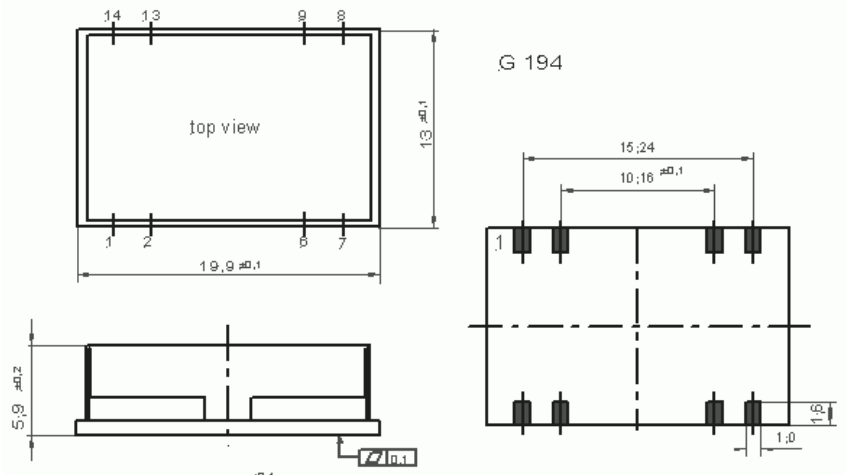
Notes:

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