

# AXTAL ADVANCED XTAL PRODUCTS

<b>Specification</b>	<b>AXLE20S</b>	Issue: 03	Date: 2005-05-22
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**Oscillator type : TCXO with Stratum III long-term stability option**

Parameter	min.	typ.	max.	Unit	Condition
<b>Frequency range</b>	9		33	MHz	
<b>Standard frequencies</b>	10 / 12.8 / 13 / 16.384 / 19.44			MHz	
<b>Frequency stability</b>				ppm	
Initial tolerance			± 1	ppm	@+25°C
vs. temperature in operating temperature range (steady state)	Frequency stability				Temperature
			± 2.5	ppm	-40°~+85°C
			± 1.5	ppm	-20°~+70°C
			± 0.8	ppm	- 0°~+50°C
vs. supply voltage variation			± 0.2	ppm	
vs. load change			± 0.2	ppm	
24 hours drift			± 0.04	ppm	GR-1244-CORE
24 hours holdover (only for Option I = "08")			± 0.37	ppm	temperature change of less than ± 3° (Note 3)
long term (aging) 1 <sup>st</sup> year			± 1	ppm	@ +40°C
Long term stability (overall) <sup>2</sup> 15 years			± 4.6	ppm	See Notes 2 and 3
<b>Frequency adjustment range</b>					
Electronic Frequency Control (EFC)	N.A.			ppm	N.A.
<b>RF output</b>					
Signal waveform	HCMOS				
Load	15			pF	
Rise & decay time			10	ns	
Symmetry (duty cycle)	40		60	%	@ V <sub>S</sub> /2
Start-up time			4	ms	
Phase noise @ 16.384 MHz		-95		dBc	10 Hz
		-125		dBc	100 Hz
		-140		dBc	1000 Hz
		-145		dBc	10000 Hz
<b>Supply voltage V<sub>S</sub></b>	4.75	5.0	5.25	V	Option II = "50"
	3.13	3.3	3.47		Option II = "33"
<b>Current consumption (steady state)</b>			25	mA	@ +25°C
<b>Enable/disable function</b>					
<b>Operable temperature range</b>	-40		+85	°C	
<b>Storage temperature range</b>	-40		+85	°C	
<b>Enclosure (see drawing)</b>	19.1x13.1x5 max			mm	IEC 61837 CO 30
<b>Weight</b>			5	gram	
<b>Packing</b>	Tape & reel				IEC 60286-3
<b>ESD Sensitivity</b>	1500			V	HBM as IEC 61000-4-2

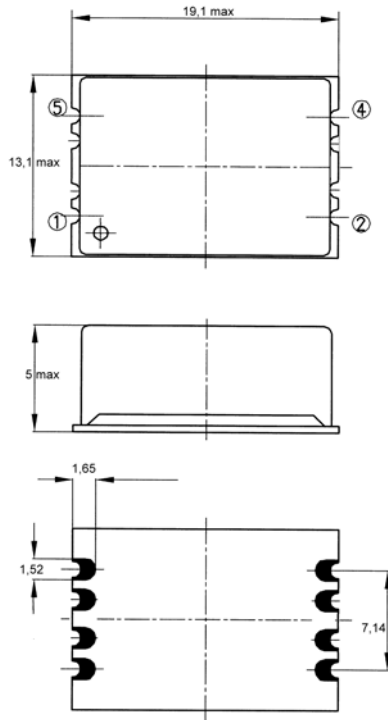
**Notes:**

1. Terminology and test conditions are according to IEC standard IEC60679-1, unless otherwise stated
2. Overall frequency stability = initial tolerance + temp.stability + supply & load change + aging
3. Stratum III holdover and long term overall stability only available for Option I = "08"

**Ordering Code:**

Model (Specification)	Option I	Option II	Frequency [MHz]
AXLE20	25	33	12.800

## Enclosure drawing



## Pin connections

Pin #	Symbol	Function
1	N.C.	No Connection
2	GND	Ground
4	RF OUT	RF Output
5	Vs	Supply Voltage
Other pins: Internal connections		

## Environmental conditions

Test	IEC 60068 Part ...	IEC 60679-1 clause ...	Test conditions
Visual inspection, dimensions		4.3	Enclosure styles as in IEC 60679-3 or 61837, if applicable
Sealing tests (if applicable)	2-17	4.6.2	Gross leak: Test Qc, Fine leak: Test Qk
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
Bump*	2-29	4.6.6	Test Eb, 4000 bumps per Axes, 40g, 6 ms
Free fall*	2-32	4.6.9	Test Ed procedure 1, 2 drops from 1m height
Vibration, sinusoidal*	2-6	4.6.7	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Rapid change of temperature	2-14	4.6.5	Test Na, 10 cycles at extremes of operating temperature range
Dry heat	2-2	4.6.14	Test Ba, 16 h at upper temperature indicated by climatic category
Damp heat, cyclic*	2-30	4.6.15	Test Db variant 1 severity b), 55°C/95% r.H., 6 cycles
Cold	2-1	4.6.16	Test Aa, 2 h at lower temperature indicated by climatic category
Climatic sequence*	1-7	4.6.17	Sequence of 4.6.14, 4.6.15 (1 <sup>st</sup> cycle), 4.6.16, 4.6.15 (5 cycles)
Damp heat, steady state*	2-3	4.6.18	Test Ca, 56 days
Endurance tests - ageing - extended aging		4.7.1 4.7.2	30 days @ 85°C, OCXO @25°C 1000h, 2000h, 8000h @85°C