AXTAL ADVANCED XTAL PRODUCTS

Specification	AXLE195	Rev.: 1	Date: 2014-04-06

Oscillator type: SMD (VC)TCXO in 19.8x12.5 mm package

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	6 6 1		190 190 800	MHz MHz MHz	Clipped Sine wave Sine wave HCMOS
Frequency stability				ppm	
vs. operating temperature range	±0.5 to ±5 See tables 1 & 2			ppm	Option 4 & 5
vs. supply voltage variation		±0.1	±0.3	ppm	V_S ±5 %
vs. load change			±0.2	ppm	Load ±10 %
Long term (aging) per year			±1	ppm	@+40°C
Frequency adjustment range					
Mechanical (internal trimmer)	±3			ppm	Option 1 = blank
Electronic Frequency Control (EFC)	±5			ppm	Option 1 = "V"
EFC voltage V_C	0.15 0.5	1.65 2.5	3.15 4.5	V V	Option 2 = "3" Option 2 = "5"
EFC slope ($\Delta f / \Delta V_C$)	Positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform (Note 2)	Clipped Sine wave Sine wave HCMOS				Option 3 = "C" Option 3 = "S" Option 3 = "H"
Load	10 kΩ || 10 pF 50 Ω 15 pF				Option 3 = "C" Option 3 = "S" Option 3 = "H"
Amplitude	0.8 1.0			V p-p V p-p	Option 3 = "C" / 3.3 V Option 3 = "C" / 5.0 V
		0 +10		dBm dBm	Option 3 = "S" / 3.3 V Option 3 = "S" / 5.0 V
	According to relevant Logic Standard				Option 3 = "H"
Supply voltage V_S	3.15 4.75	3.3 5.0	3.45 5.25	V V	Option 2 = "3" Option 2 = "5"
Current consumption (Note 3)	2 ~ 30 12 ~ 100 15 ~ 100			mA mA mA	Option 3 = "C" Option 3 = "S" Option 3 = "H"
Enclosure (see drawing) (LxWxH)	20.3x13.0x5.7 max.			mm	Similar to IEC 61837 CO 30
Weight			3	g	
Packing	Tape & Reel				IEC 60286-3

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. PECL and LVDS output on request (without EFC function)
3. Depending on frequency and supply voltage
4. All combinations of options might not be available. Please consult factory

Absolute Maximum Ratings

Parameter	min.	max.	Unit	Condition
Supply Voltage V_S	-0.5	V_S + 10%	V	V_S to GND
Control Voltage V_C	-0.5	6	V	V_C to GND
Storage Temperature	-55	+105	°C	

Frequency stability vs. temperature

Option 4	Stability [ppm]
05	±0.5
10	±1.0
15	±1.5
20	±2.0
25	±2.5
30	±3.0
35	±3.5
50	±5.0

Table 1

Lower Temperature			Upper Temperature	
Option 5	T [°C]		Option 5	T [°C]
0	0		A	+50
1	-10		B	+60
2	-20		C	+70
3	-30		D	+75
4	-40		E	+80
			F	+85

Table 2

Ordering Code

Model	Option 1 [EFC]*	Option 2 [Supply Voltage]	Option 3 [RF output]	Option 4 [Stability]	Option 5 [Temperature range]	Revision	Frequency [MHz]
AXLE195	_ or "V"	3 or 5	C, S, H	Table 1	Table 2	Rev.1	10.000

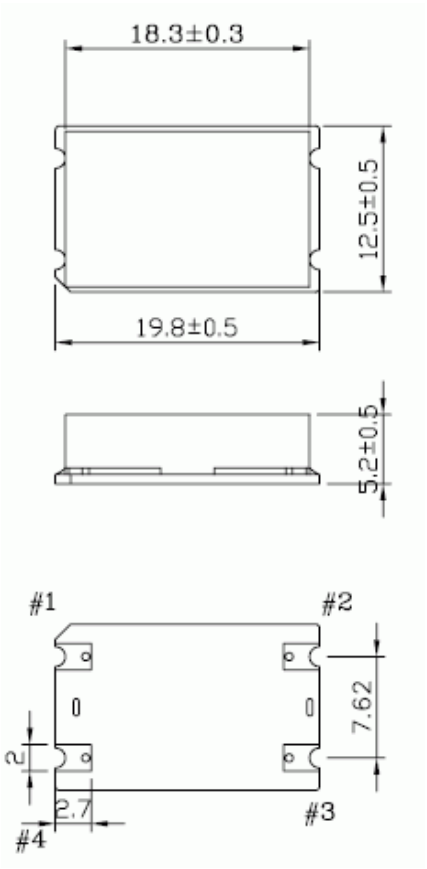
Example: AXLE195-V-5-S-10-3D_Rev.1 – 10.000 MHz

Handling and Testing

Parameter	Procedure	Source
Handling and Testing	Application Note AXAN-011	www.axtal.com
Processing	Application Note AXAN-012	www.axtal.com

Parameter	Procedure		Condition
Electrostatic discharge (ESD)			
THD devices	IEC60749-26	HBM	2000 V
SMD devices	IEC60749-27	MM	200 V
Washable	☐ Yes ✖ No		
RoHS compliant	✖ Yes ☐ No		

Enclosure drawing



Pin connections

Pin #	Symbol	Function
1	N.C. or V_C	No Connection or Control Voltage (EFC)
2	GND	Ground
3	RF OUT	RF Output
4	V_S	Supply Voltage

Environmental conditions

Test	IEC 60068 Part …	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta Method 1 Test Td_1 Method 2 Test Td_2 Method 2
Shock*	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Vibration, random*	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests - ageing - extended aging		 5.7.1 5.7.2	108A		 4.8.35	 30 days @ 85°C, OCXO @25°C 1000h, 2000h, 8000h @85°C

Other environmental conditions on request

Data sheet is for information purposes only and may be subject to modifications or may be discontinued without notice.

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D1	01.10.2012	Editorial changes	BN	BN
1	D2	06.04.2014	Environmental conditions updated, editorial changes	HH	HH