AXTAL ADVANCED XTAL PRODUCTS

Specification	AXLE208B	Rev.: 1	Date: 2014-12-15

Oscillator type: TCXO in CO15 package

Pin connections modified from AXLE208

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)		N.A.			
EFC voltage V_C		N.A.			
EFC slope ($\Delta f / \Delta V_C$)	Positive				
EFC input impedance	100			kΩ	
RF output					
Signal waveform	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 +3	 +5	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 2)	2 ~ 30 12 ~ 30 15 ~ 50			mA mA mA	Option 3 = "C" Option 3 = "S" Option 3 = "H"
Enclosure (see drawing) (LxWxH)	20.3x20.3x5.3 max.			mm	IEC 60679-3 CO 15
Weight			8	g	
Packing	Palette				IEC 60286-3

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Depending on frequency and supply voltage
3. 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 n.a.	Option 2 [Supply Voltage]	Option 3 [RF output]	Option 4 [Stability]	Option 5 [Temperature range]	Revision	Frequency [MHz]
AXLE208B	Blank "_"	3 or 5	C, S, H	Table 1	Table 2	Rev.2	10.000

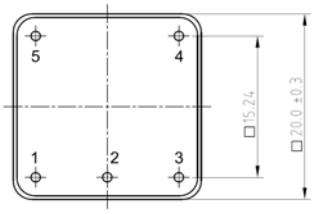
Example: AXLE208B_-5-S-10-3D_Rev.2 – 10.000 MHz

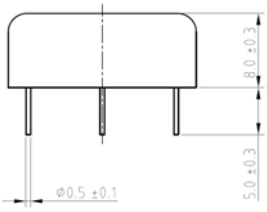
Handling and Testing

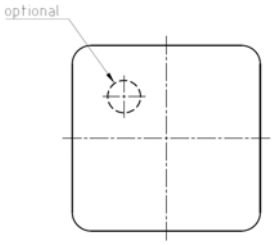
Parameter	Procedure	Source
Handling and Testing	Application Note AXAN-011	www.axtal.com
Processing	Application Note AXAN-012	www.axtal.com

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	GND	Ground
2	RF OUT	RF Output
3	V_S	Supply Voltage
4	N.C.	No Connection
5	N.C.	No Connection

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

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
2	D0	22.09.2009	AXLE208 Editorial changes	BN	BN
2	D1	06.04.2014	AXLE208 Environmental conditions updated, editorial changes	HH	HH
2	D2	27.11.2014	AXLE208 Sine wave output level changed to +3 dBm typ.	BN	BN
1	D1	12.12.2014	New P/N AXLE208B: no EFC, pin connections modified	BN	BN
1	D2	15.12.2014	Pins 4 and 5 changed to N.C.	BN	BN