

<b>Specification</b>	<b>AXLE135</b>	Rev.: 2	Date: 2014-04-06
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**Oscillator type: (VC)TCXO in DIL8 package**

Parameter	min.	typ.	max.	Unit	Condition
<b>Frequency range</b>	10		50	MHz	Clipped Sine wave
	10		50	MHz	Sine wave
	1		800	MHz	HCMOS, PECL, LVDS
<b>Frequency stability</b>				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 <sub>S</sub> ±5 %
vs. load change			±0.2	ppm	Load ±10 %
Long term (aging) per year			±1	ppm	@+40°C
<b>Frequency adjustment range</b>					
Mechanical (internal trimmer)	±3			ppm	Option 1 = blank
Electronic Frequency Control (EFC)	±5			ppm	Option 1 = "V"
EFC voltage V <sub>C</sub>	0.15	1.65	3.15	V	Option 2 = "3"
	0.5	2.5	4.5	V	Option 2 = "5"
EFC slope (Δf / ΔV <sub>C</sub> )	Positive				
EFC input impedance	100			kΩ	
<b>RF output</b>					
Signal waveform	Clipped Sine wave Sine wave HCMOS PECL LVDS				Option 3 = "C" Option 3 = "S" Option 3 = "H" Option 3 = "P" Option 3 = "L"
Load	10 kΩ    10 pF 50Ω 15 pF 50 Ω + Bias				Option 3 = "C" Option 3 = "S" Option 3 = "H" Option 3 = "P" or "L"
Amplitude	0.8			V p-p	Option 3 = "C" / 3.3 V
	1.0			V p-p	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", "P", "L"
<b>Supply voltage V<sub>S</sub></b>	3.15	3.3	3.45	V	Option 2 = "3"
	4.75	5.0	5.25	V	Option 2 = "5"
<b>Current consumption</b> (Note 2)	2 ~ 30			mA	Option 3 = "C"
	12 ~ 20			mA	Option 3 = "S"
	15 ~ 50			mA	Option 3 = "H"
	25 ~ 100			mA	Option 3 = "P" or "L"
<b>Enclosure (see drawing) (LxWxH)</b>	12.7x12.7x5.1 max.			mm	IEC 60679-3 CO 21
<b>Weight</b>			4	g	
<b>Packing</b>	Tape & Reel				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 [EFC]*	Option 2 [Supply Voltage]	Option 3 [RF output]	Option 4 [Stability]	Option 5 [Temperature range]	Revision	Frequency [MHz]
AXLE135	_ or "V"	3 or 5	C, S, H, P, L	Table 1	Table 2	Rev.2	10.000

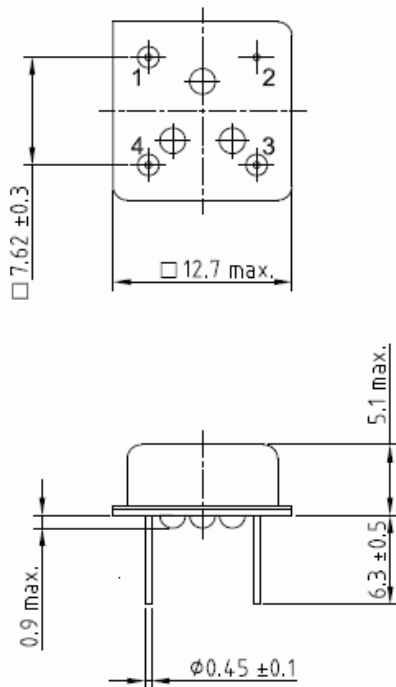
Example: AXLE135-V-5-S-10-3D\_Rev.2 – 10.000 MHz

\*EFC Option not available for PECL and LVDS Output

### 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 (Without EFC)

Pin #	Symbol	Function
1	N.C. or Comp OUT	No Connection or Complementary RF Output (PECL and LVDS)
2	GND	Ground
3	RF OUT	RF Output
4	V <sub>s</sub>	Supply Voltage

### Pin connections (With EFC)

Pin #	Symbol	Function
1	V <sub>c</sub>	Control Voltage (EFC)
2	GND	Ground
3	RF OUT	RF Output
4	V <sub>s</sub>	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	2-20	5.6.3	208H		3.6.52	Test Ta Method 1
Resistance to soldering heat	2-58		210F		3.6.48	Test Td <sub>1</sub> Method 2 Test Td <sub>2</sub> 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
2	D1	01.10.2012	Editorial changes	BN	BN
2	D2	06.04.2014	Environmental conditions updated, editorial changes	HH	HH