

Specification	AXLE7050CS	Rev.: 1	Date: 2014-12-05
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Oscillator type: High Stability SMD 7x5 mm TCXO for COSPAS SARSAT

Parameter	min.	typ.	max.	Unit	Condition
Standard frequencies		12.688375		MHz	
		12.688656		MHz	
		12.688750		MHz	
Frequency stability				ppm	
Initial tolerance			±0.5	ppm	@+25°C
after reflow soldering			±0.5	ppm	+260°C over 10 sec max.
vs. operating temperature range			±0.2	ppm	Ref. to (fmax+fmin)/2
Operating temperature range	-40		+55	°C	Class I beacon
See options	-20		+55	°C	Class II beacon
vs. supply voltage variation			±0.1	ppm	V _S ±5 %
vs. load change			±0.1	ppm	Load ±5 %
Long term (aging) 1 st year			±1	ppm	
Long term (aging) 10 years			±3	ppm	
Frequency adjustment range					
Electronic Frequency Control (EFC)	N.A.				
RF output					
Signal waveform	HCMOS				
Load	15 pF				
Amplitude	V _{OL} < 0.1·V _S , V _{OH} > 0.9·V _S				
Duty cycle	45		55	%	@ V _S /2
Rise/fall time			8	ns	@ 10% / 90% V _S
Short-term stability (ADEV)		0.1	1	ppb	τ = 100 ms
Medium-term stability					
Steady state			±0.7	ppb/min	C/S T.007 and
During temperature ramp ±5K/hour			±1.7	ppb/min	C/S IP TCXO
Residuals (rms) from linear fit			±2	ppb	Note 2
Oscillator Enable/Disable/Tri-state Input	Pin #9 :		Pin#6 :		
	HIGH or open		RF Output		
	LOW		High Impedance		
Supply voltage V_S	3.15	3.3	3.45	V	
Current consumption			4.0	mA	
Enclosure (see drawing) (LxWxH)	7.0x5.0x1.75			mm	IEC 61837 DCC-4/7050
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. After 15 minutes warm-up after power-on with 18 measurements taken over 15 minutes

Absolute Maximum Ratings

Parameter	min.	max.	Unit	Condition
Supply Voltage V _S	-0.5	V _S + 10%	V	V _S to GND
Storage Temperature	-55	+125	°C	

Ordering Code

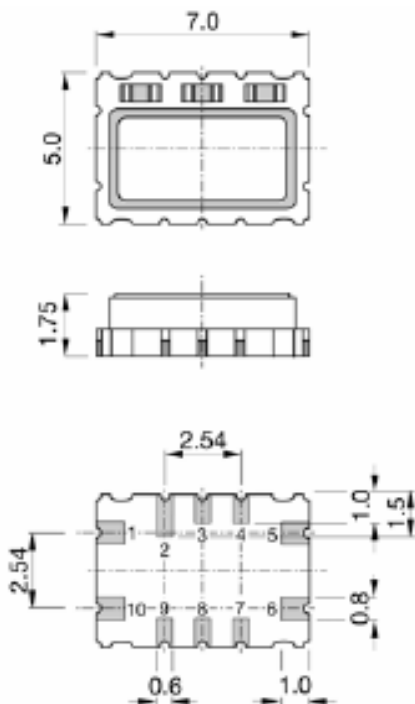
Model	Temperature range	Revision	Frequency [MHz]
AXLE7050CS	Class I: "1" Class II: "2"	Rev.1	12.688375
			12.688656
			12.688750

Example: AXLE7050CS-2_Rev.1 – 12.688750 MHz

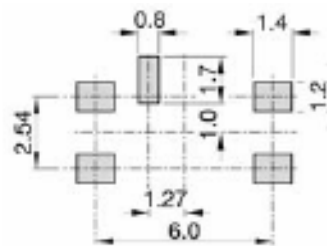
Handling and Testing

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	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
RoHS compliant	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Enclosure drawing



Soldering pattern:



Pin connections:

Pin #	Symbol	Function
1,2,3,4	I.C.	Do not connect
5	GND	Ground
6	RF OUT	RF Output
7,8	I.C.	Do not connect
9	OE	Oscillator Enable/Tristate
10	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

Revision History

Rev.	Drawing	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	D1	05.12.2014	First issue	BN	BN