CONNOR WINFIELD

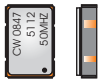
THE CONNOR-WINFIELD CORP.
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RoHS COMPLIANT

PRODUCT DATA SHEET

CRYSTAL CONTROLLED OSCILLATORS

2.5V LVCMOS SURFACE MOUNT 7.5x5mm CRYSTAL CLOCK OSCILLATOR



5112, 5122, 5132

ABSOLUTE MAXIMUM RATINGS — TABLE 1.0

PARAMETER	UNITS	MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Storage Temperature		-55	-	125	°C	
Supply Voltage	(Vcc)	-0.5	-	7.0	Vdc	

MODEL SPECIFICATIONS: — TABLE 2.0

MODEL 5112

Frequency Range	(Fo)	1.8	-	50	MHz	
Frequency Tolerance:		-25	-	25	ppm	1

MODEL 5122

Frequency Range	(Fo)	1.8	-	50	MHz	
Frequency Tolerance:		-50	-	50	ppm	1

MODEL 5132

Frequency Range	(Fo)	1.8	-	50	MHz	
Frequency Tolerance:		-100	-	100	ppm	1

OPERATING SPECIFICATIONS — TABLE 3.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
Operating Temperature Range		-10	-	70	°C	
Supply Voltage	(Vdd)	2.375	2.5	2.625	Vdc	
Supply Current 1.8 to 31.999 MHz	(Icc)	-	-	10	mA	
32 to 50 MHz	(Icc)	-	-	12	mA	

INPUT CHARACTERISTICS — TABLE 4.0

Enable Voltage	(Vih)	70%Vcc	-	-	Vdc	2
Disable Voltage	(Vil)	-	-	30%Vcc	Vdc	
Enable Time		-	-	10	ms	
Disable Time		-	-	150	ns	
Output Disable Current	(Icc)	-	-	10	uA	

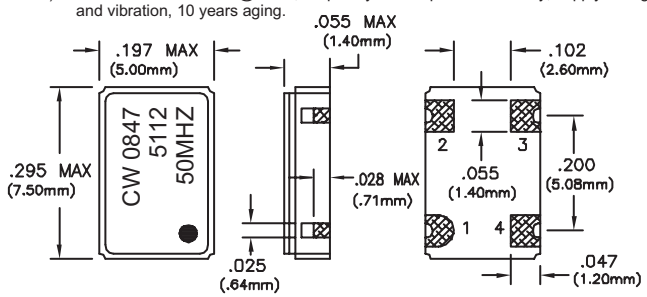
LVCMOS OUTPUT CHARACTERISTICS — TABLE 5.0

PARAMETER		MINIMUM	NOMINAL	MAXIMUM	UNITS	NOTE
LOAD		-	-	15	pF	
Voltage (High)	(Voh)	2.14	-	-	Vdc	
(Low)	(Vol)	-	-	0.26	Vdc	
Current (High)	(Ioh)	-4	-	-	mA	
(Low)	(Ioh)	-	-	4	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	5	ns	
Start-Up Time		-	-	10	ms	
Period Jitter		-	3	5	ps RMS	
Phase Jitter (BW=12kHz to 20MHz)		-	0.5	1	ps RMS	

PACKAGE CHARACTERISTICS — TABLE 6.0

Package	Hermetically sealed ceramic package and metal cover
Soldering Process	RoHS Compliant, lead free. See solder profile on page 2.

Note:
1) Inclusive of calibration @ 25°C, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 10 years aging.



PAD	CONNECTION
1	ENABLE/DISABLE
2	GROUND
3	OUTPUT
4	Vcc

Dimensional Tolerance: ±.02" (.508mm)
±.005" (.127mm)

DESCRIPTION

The Connor-Winfield 5112, 5122, 5132 are 2.5V LVCMOS, Surface Mount, Fixed Frequency Crystal Oscillators (XO) designed for use in all applications requiring precision clocks. This oscillator features low stand-by current (10uA) when the output is disabled. The surface mount package is designed for high-density mounting and is optimum for mass production.

FEATURES

1.8 to 80 Mhz

2.5V OPERATION

TRI-STATE ENABLE / DISABLE FUNCTION

OVERALL FREQUENCY TOLERANCE:
5112 ±25ppm
5122 ±50ppm
5132 ±100ppm

TEMPERATURE RANGE: -10 to 70°C

POWER SAVING STAND-BY CURRENT

CERAMIC SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS COMPLIANT / LEAD FREE

ORDERING INFORMATION

5112 - 050.0M

5112 — CLOCK SERIES
050.0M — CENTER FREQUENCY

Specifications subject to change without notice.

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ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE CYCLE:
The specimen shall meet electrical characteristics after tested 5 cycles of −55°C/30 min & +125°C/30 min.

HERMETICAL
No bubbles appear in Flourinert (FC−43) at 125°C ±5°C, for 5 minutes.

SOLVENT RESISTANCE:
Marking will withstand immersion in Isopropyl Alcohol or Trichloroethylene.

SOLDERING

GENERAL CONDITIONS:
260°C max x 10 sec max x 2 times max or
230°C max x 180 sec max x 1 time.

TYPICAL OPERATION DATA (Vapor phase reflow)
20 to 100 sec up to 215°C, 50 sec at 215°C then down to room temperature per 1 to 5°C/sec

MECHANICAL CHARACTERISTICS

FREE DROP:
The specimen shall meet electrical characteristics after tested 3 times Free Drop testing on the hard wooden board from a height of 75cm.

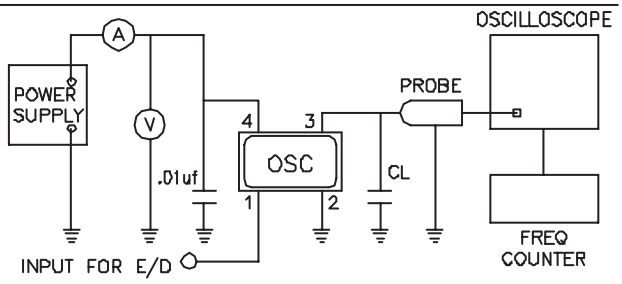
VIBRATION:
The specimen shall meet electrical characteristics after tested by the following conditions:
10−55Hz 1.5mm Amplitude, 55−2000Hz 20G's,
2 hours for each plane.

THERMAL SHOCK:
After applied Thermal Shock of 260°C max x 10 sec max x 2 times, or 230°C max x 180 sec max, the specimen shall meet electrical characteristics.

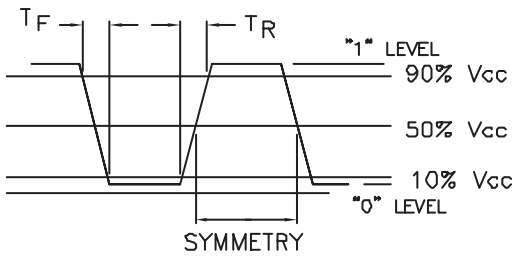
SOLDERABILITY: (EIAJ−RCX−0102/1D1 Condition 1a)
1. Flux: MIL−F−14256 (WW Rosin=25%, Isopropyl alcohol=75%)
2. Solder: QQ−S−571 (Sn=63%, Pb=37%)
3. Solder bath temperature: 235°C ±5°C.
4. Depth of immersion: Up to electrical terminal.
5. Immersing time: Within 2 sec ±0.5 sec into solder bath.

After performing the above procedures, a newly soldered coverage shall be greater than 90%.

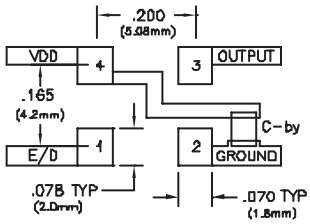
TEST CIRCUIT



OUTPUT WAVEFORM

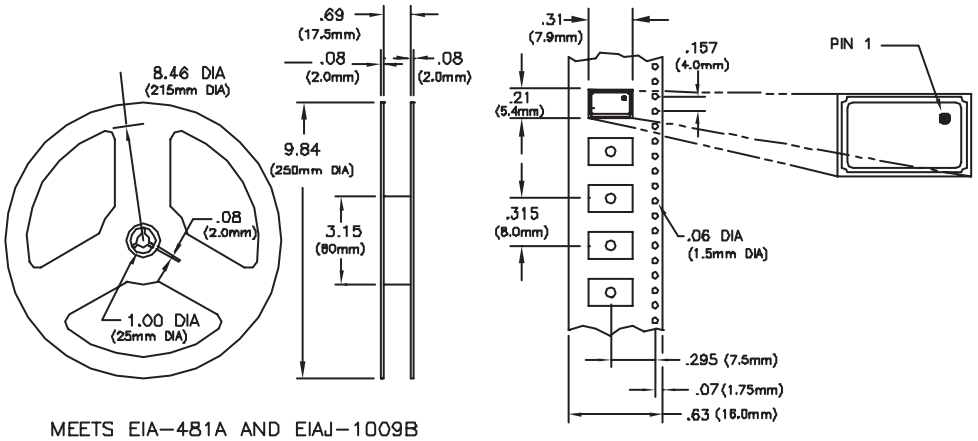


SUGGESTED PAD LAYOUT



Bypass capacitor, C−by, should be ceramic capacitor ≥ .01uf.

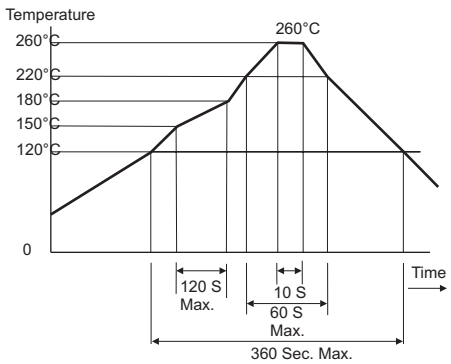
TAPING AND REEL DIMENSIONS



MEETS EIA−481A AND EIAJ−1009B
2,000 PCS/REEL

Dimensional Tolerance: ±.02" (.508mm)
±.005" (.127mm)

SOLDER PROFILE



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