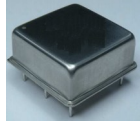




# PLETRONICS OLA5xxx-100.0M OCXO Oscillator



OLA5 Series  
25.4 x 25.4 x 12.7 mm  
5 Pin Metal Package

## Features

- Ultra Low Phase Noise & Low G-Sensitivity
- Hermetically Sealed Package
- 5.0V nominal Supply Voltage
- 100.0 MHz Frequency
- Voltage control option available
- Low Power Consumption, Fast Warm Up Time

## Applications

Instrument Reference  
Microwave Communication  
Clock Reference for Microwave Signal Source  
Test & Measurement  
Telecom Systems  
Radar Systems  
Medical (MRT)

## Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Condition
Frequency	-	100	-	MHz	
Frequency Stability vs Temperature	±200	-	±200	ppb	±50ppb available over temp range -20 to 70°C (see page 2 for options)
Frequency Stability vs Supply	-5	-	+5	ppb	±5% voltage change
Frequency Stability vs Load	-5	-	+5	ppb	± 10% load change
Short Term	-	-	0.05	ppb	root Allan variance τ=1 sec
Warm-up	-50	-	+50	ppb	In 5 minutes @ +25°C, referenced to 1 hour
G-Sensitivity (each axis)	-	-	1	ppb/g	
Aging	-5	-	+5	ppb	per day after 30 days
	-0.2	-	+0.2	ppm	per year
	-2.0	-	+2.0	ppm	15 years
Initial Calibration	-0.3	-	+0.3	ppm	After 30 minutes @25°C±1, Vcontrol = 5.0V
Operating Temperature Range	-40	-	+85	°C	
Supply Voltage <sup>1</sup> V <sub>CC</sub>	4.75	5.0	5.25	V	
Current	-	-	950	mA	@turn on
Steady State	-	-	2.1	W	@ 25°C
Harmonics	-	-	-30	dBc	
Spurious	-	-	-100	dBc	
Storage Temperature Range	-55	-	+105	°C	

## Waveform

Parameter	Min	Typ	Max	Unit	Condition
Output Waveform	Sinewave				
Level	+15	-	-	dBm	
Load	-	50	-	Ω	± 10%
Linearity	-10	-	+10	%	Slope positive

## Electrical Frequency Adjustment

Parameter	Min	Typ	Max	Unit	Condition
Vcontrol Range	0	5	10	V	
Pullability	±2.5	-	-	ppm	Referenced to frequency at nominal center voltage
Linearity	-10	-	+10	%	Slope positive

Note: <sup>1</sup> Place a 10nF power supply bypass capacitor next to device for correct operation



# PLETRONICS OLA5xxx-100.0M OCXO Oscillator

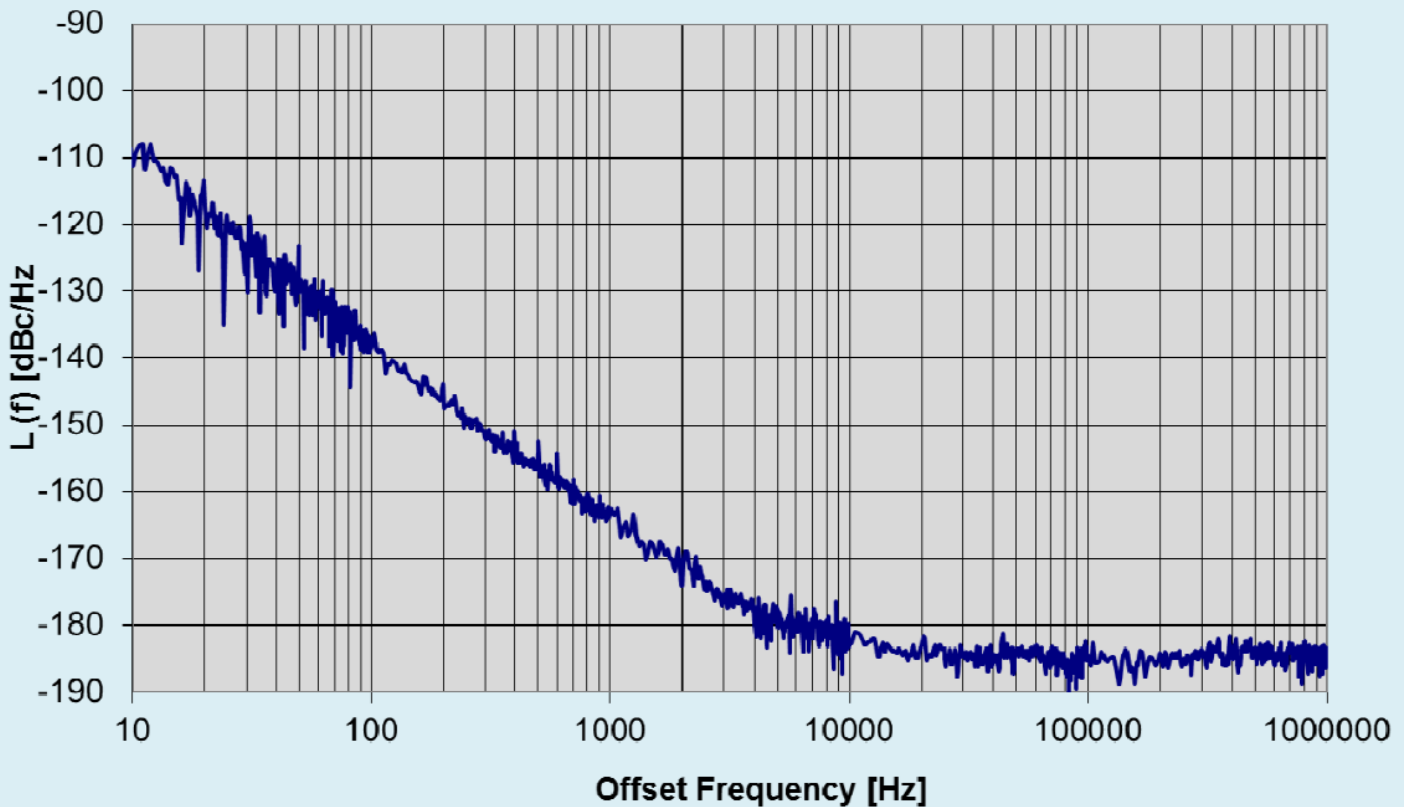
## Temperature vs Frequency Stability Options

Temp	Stability
-20 to +70°C	±100 ppb
	±50 ppb
-40 to +85°C	±500 ppb
	±200 ppb

## Phase Noise Characteristics

Phase Noise Options		A	B	Unit
Phase Noise	10 Hz	-100	-105	dBc/Hz
	100 Hz	-130	-135	
	1 kHz	-157	-162	
	10 kHz	-180	-180	
	100 kHz	-185	-185	
	1 MHz	-185	-185	

## 100MHz OCXO Series Phase Noise





# PLETRONICS OLA5xxx-100.0M OCXO Oscillator

## Device Marking

PLE	= Pletronics
OLA5xxx	= Model number/Part number*
100.0M	= Frequency (M = MHz)
YMD	= Date code (Year-Month-Day: See Table below)
z	= Internal Factory Code
S/N: xxx	= Serial number

\* A unique number is assigned for your exact specifications. Specifications such as part number, frequency stability, supply voltage and operating temperature range, etc. are not identified from marking. External packaging labels and packing list will correctly identify the ordered Pletronics part number.

Codes for Date Code YMD (Year Month Day)

Code	9	0	1	2	3	Code	A	B	C	D	E	F	G	H	J	K	L	M
Year	2019	2020	2021	2022	2023	Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Code	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	T	U	V	W	X	Y	Z
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

## Package Labeling

P/N Label is 1" x 2.6" (25.4mm x 66.7mm)  
Font is Courier New  
Bar code is 39-Full ASCII

RoHS Label is 1" x 2.6" (25.4mm x 66.7mm)  
Font is Arial

P/N:	
	OLA5001-100.0M
Customer P/N:	
	12345678
Qty:	
	1000
D/C	
	9DW
MSL: 1	

<b>RoHS Compliant</b>
2nd Lvl Interconnect Category=e3
Max Safe Temp=280C for 15s (Wave solder only)

**Pletronics Inc. certifies this device is in accordance with the RoHS 3 and WEEE 2 directives.**

Pletronics Inc. guarantees the device does not contain the following: Cadmium, Hexavalent Chromium, Lead, Mercury, PBB's, PBDE's  
Moisture Sensitivity Level: 1 As defined in J-STD-020D  
Second Level Interconnect code: e3

## Environmental / ESD Ratings

Reliability: Environmental Compliance

Parameter	Ref Standard	Condition
Solderability	MIL-STD-202, Method 208	
Mechanical Shock	MIL-STD-202, Method 213 Test Cond J	30g, 11ms, half-sine
Vibration	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 55 Hz
Thermal Shock	MIL-STD=202, Method 107 Test Cond B	5 cycles -65 to +125 Deg C

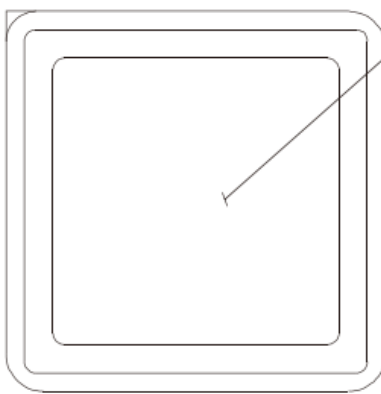
Model	Min Voltage
Human Body Model	2000V
Charged Device Model	500V
Machine Model	200V



# PLETRONICS OLA5xxx-100.0M OCXO Oscillator

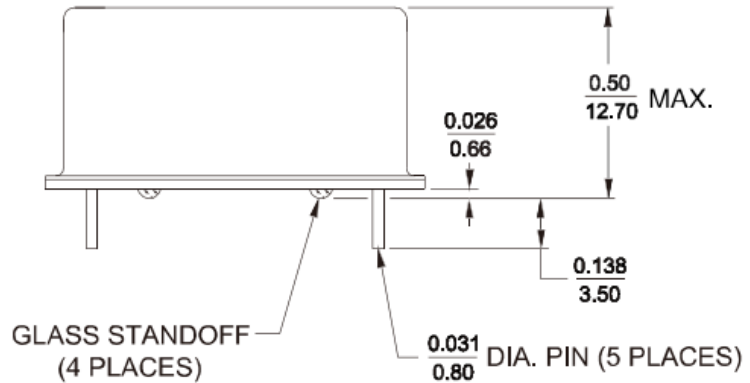
## Mechanical Dimensions

[TOP VIEW]



MARKING THIS SURFACE

[SIDE VIEW]



GLASS STANDOFF (4 PLACES)

0.031 DIA. PIN (5 PLACES)  
0.80

**TOLERANCES**

UNLESS OTHERWISE SPECIFIED:

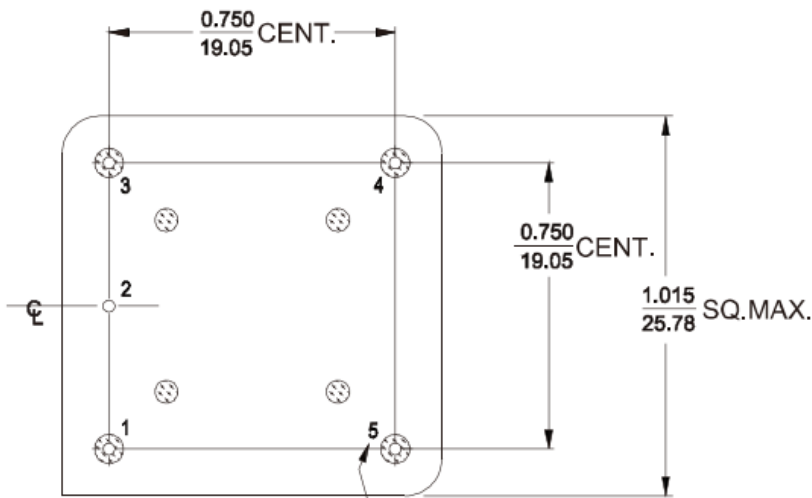
ANGLES: ±1 DEGREE

FRACTIONS: ±1/32 INCH

$\frac{\text{INCH}}{\text{mm}}$  (REFERENCE ONLY)

DECIMALS: .XX±0.015, .XXX±0.010 INCH

[BOTTOM VIEW]



Numbers for reference only.  
(Not stamped on unit)

**PIN CONNECTIONS**

PIN	FUNCTION
1	R. F. OUTPUT
2	0 VOLTS & CASE
3 (See Note 1)	VCO INPUT or NOT CONNECTED
4 (See Note 1)	REFERENCE VOLTAGE or NOT CONNECTED or OVEN MONITOR
5	+VDC

**Note:**

1. If the specification does not specify parameters for either PIN3 or PIN4 then that respective PIN is NOT internally CONNECTED.

For Optimum Jitter Performance, Pletronics recommends:

- A ground plane under the device
- Do not route large transient signals (both current and voltage) under the device
- Do not place near a large magnetic field such as a high frequency switching power supply
- Do not place near piezoelectric buzzers or mechanical fans
- Minimize air flow across the device



# PLETRONICS OLA5xxx-100.0M OCXO Oscillator

## Important Notice

Pletronics Incorporated (PLE) reserves the right to make corrections, improvements, modifications and other changes to this product at anytime. PLE reserves the right to discontinue any product or service without notice. Customers are responsible for obtaining the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to PLE's terms and conditions of sale supplied at the time of order acknowledgment.

PLE warrants performance of this product to the specifications applicable at the time of sale in accordance with PLE's limited warranty. Testing and other quality control techniques are used to the extent PLE deems necessary to support this warranty. Except where mandated by specific contractual documents, testing of all parameters of each product is not necessarily performed.

PLE assumes no liability for application assistance or customer product design. Customers are responsible for their products and applications using PLE components. To minimize the risks associated with the customer products and applications, customers should provide adequate design and operating safeguards.

PLE products are not designed, intended, authorized or warranted to be suitable for use in life support applications, weapons, weapon systems or space applications, devices or systems or other critical applications that may involve potential risks of death, personal injury or severe property or environmental damage. Inclusion of PLE products in such applications is understood to be fully at the risk of the customer. Use of PLE products in such applications requires the written approval of an appropriate PLE officer. Questions concerning potential risk applications should be directed to PLE.

PLE does not warrant or represent that any license, either express or implied, is granted under any PLE patent right, copyright, artwork or other intellectual property right relating to any combination, machine or process which PLE product or services are used. Information published by PLE regarding third-party products or services does not constitute a license from PLE to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from PLE under the patents or other intellectual property of PLE.

Reproduction of information in PLE data sheets or web site is permissible only if the reproduction is without alteration and is accompanied by associated warranties, conditions, limitations and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. PLE is not responsible or liable for such altered documents.

Resale of PLE products or services with statements different from or beyond the parameters stated by PLE for that product or service voids all express and implied warranties for the associated PLE product or service and is an unfair or deceptive business practice. PLE is not responsible for any such statements.

### Contacting Pletronics Inc.

Pletronics, Inc.  
19013 36th Ave. West  
Lynnwood, WA 98036-5761

Tel: 425.776.1880  
Fax: 425.776.2760  
email: ple-sales@pletronics.com