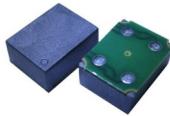




PLETRONICS OSN4002-20.0M

OCXO Oscillator



OSN4 Series
9.7 x 7.5 x 4.1 mm
4 Pad SMD Package

Features

- Pletronics' OSN4 Series Ovenized Quartz Crystal High Precision Square Wave Generator
- HCMOS Output
- 3.3V nominal Supply Voltage
- 20.0MHz Nominal Frequency

Applications

SONET / SDH / DWDM
Test & Measurement
Telecom Transmission & Switching Equipment
Base Stations / Picocell
Wireless Communication Equipment
Packet Timing Protocol (e.g. IEEE-1588)

Electrical Characteristics

Parameter	Min	Typ	Max	Unit	Condition
Frequency	-	20	-	MHz	
Frequency Stability vs Temperature	-20	-	+20	ppb	
Frequency Stability vs Supply	-5	-	+5	ppb	±5% voltage change
Warm-up	-0.1	-	+0.1	ppm	In 5 minutes @ +25°C, referenced to 1 hour
	-3	-	+3	ppb	per day after 30 days
Aging	-0.6	-	+0.6	ppm	per year
	-3.0	-	+3.0	ppm	10 years
Operating Temperature Range	-40	-	+85	°C	
Supply Voltage ¹ V _{CC}	3.135	3.3	3.465	V	
Current	-	-	350	mA	@turn on
Steady State	-	0.3	0.4	W	@ 25°C
Spurious	-	-	-60	dBc	
Phase Noise	10 Hz	-98			
	100 Hz	-126			
	1 kHz	-145			
	10 kHz	-152			
Storage Temperature Range	-55	-	+125	°C	

HCMOS

Parameter	Min	Typ	Max	Unit	Condition
Output Waveform	Rectangular				
“1” Level	2.4	-	-	V	
“0” Level	-	-	0.4	V	
Load	-	15	-	pF	
Duty Cycle	45	50	55	%	@+1.65V

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



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Device Marking

PLE	PLE
OSN4002	= Model number/Part number
20.0M	= Frequency (M = MHz)
YMD	= Date code (Year-Month-Day: See Table below)
z	= Internal Factory Code
S/N: xxx	= Serial number

= Pletronics
= Model number/Part number
= Frequency (M = MHz)
= Date code (Year-Month-Day: See Table below)
= Internal Factory Code
= Serial number

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	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

P/N:	
	OSN4002-20.0M
Customer P/N:	
Qty:	1000

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

RoHS Compliant

2nd Lvl Interconnect
Category=e4
Max Safe Temp=245C for 10s 2X Max

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: e4

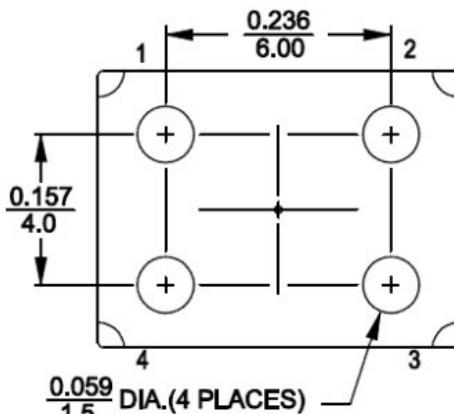
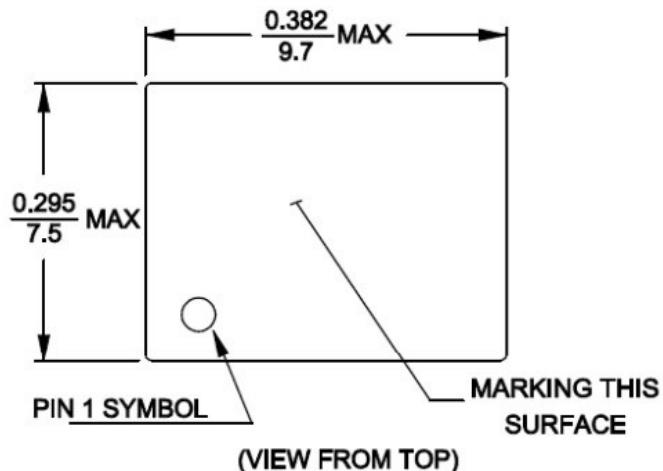
Environmental / ESD Ratings

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		

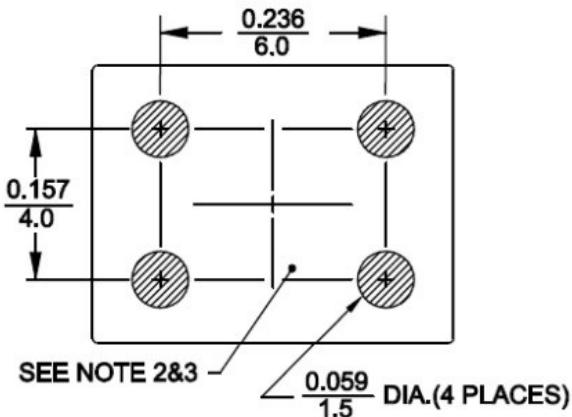
Product information is current as of publication date. The product conforms to specifications per the terms of the Pletronics standard warranty. **May 7, 2020 Rev. A**
Production processing does not necessarily include testing of all parameters.

Mechanical Dimensions



**Numbers for reference only.
(Not stamped on unit)**

(VIEW FROM BOTTOM)



PIN CONNECTIONS

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

RECOMMENDED SOLDER PAD LAYOUT

Note 1. If the specification does not specify parameters for PIN 1 then PIN1 must remain unconnected.

Note 2. Copper in this area should be kept to a minimum to reduce heat loss from OCXO.

Note 3. Bottom side reflow is forbidden unless specified in the oscillator specification.

Note 4. Aqueous cleaning is FORBIDDEN

Note 5. Test condition : A 0.1uF and 10uF X7R decoupling capacitor is required close to the unit.

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



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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.

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