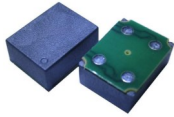




PLETRONICS OSN4002-20.0M OCXO Oscillator



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
Aging	-3	-	+3	ppb	per day after 30 days
	-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		dBc/Hz	
	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



PLETRONICS OSN4002-20.0M OCXO Oscillator

Device Marking

PLE
OSN4002
20.0M
YMDz
S/N: xxx

PLE = Pletronics
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

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)

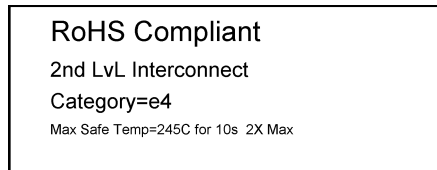
Code	9	0	1	2	3	Code	A	B	C	D	E	F	G	H	J	K	L	M
Year	2019	2020	2021	2022	2023	Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

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



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

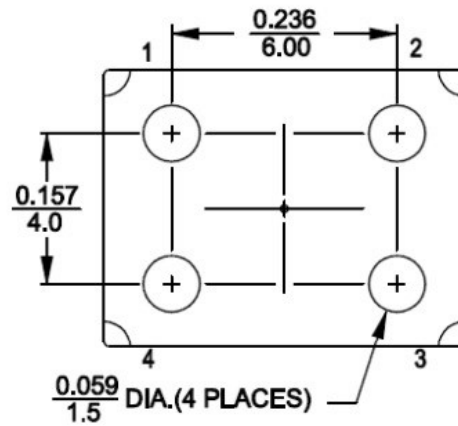
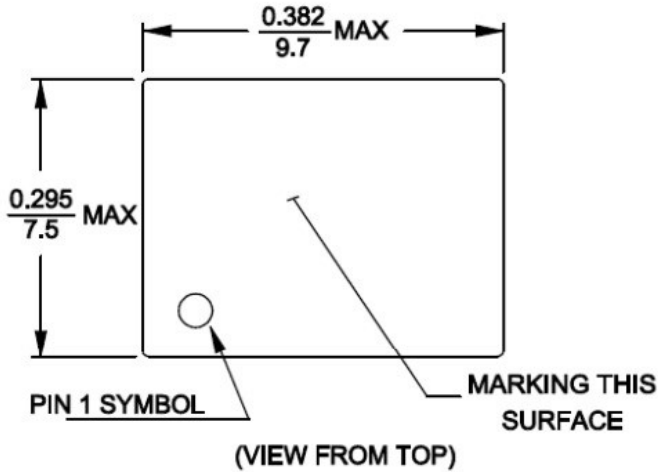
Pletronics Inc. guarantees the device does not contain the following: Cadmium, Hexavalent Chromium, Lead, Mercury, PBB's, PBDE's
Moisture Sensitivity Level: 1 As defined in J-STD-020D
Second Level Interconnect code: e4

Environmental / ESD Ratings

Reliability: Environmental Compliance

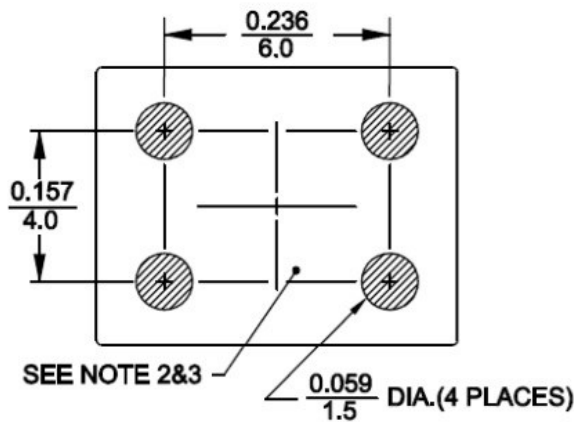
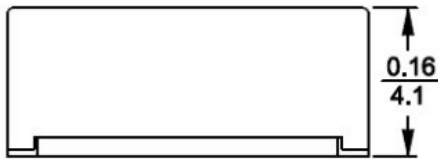
Parameter	Ref Standard	Condition
Solderability	MIL-STD-202, Method 208	
Mechanical Shock	MIL-STD-202, Method 213 Test Cond J	30g, 11ms, half-sine
Vibration	MIL-STD-202, Method 201	0.06" Total p-p, 10 to 55 Hz
Thermal Shock	MIL-STD=202, Method 107 Test Cond B	5 cycles -65 to +125 Deg C
Model	Min Voltage	
Human Body Model	2000V	
Charged Device Model	500V	
Machine Model	200V	

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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