

**Low Phase Noise OCXO**  
Metal Package, 26 mm x 26 mm

**I428 Series**

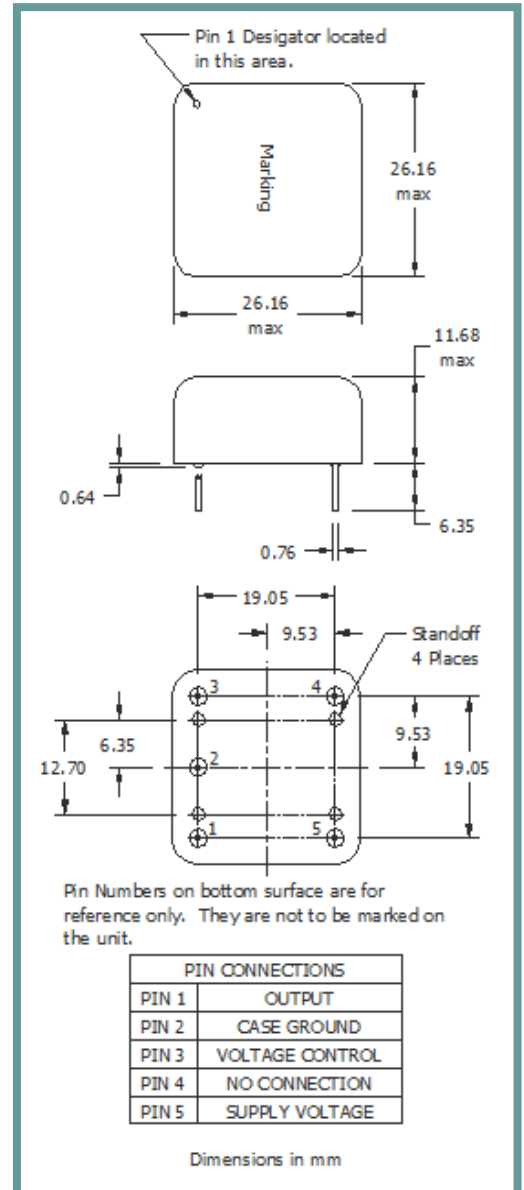
**Product Features:**

Very Low Phase Noise Option  
Low Power Consumption  
Voltage Control  
High Stability

**Applications:**

Telecommunications  
Data Communications  
Instrumentation  
Test and Measurement

|  |  |          |          |          |          |
|--|--|----------|----------|----------|----------|
| <b>Frequency</b>   | 100.000 MHz  |          |          |          |          |
| <b>Output Level</b><br>Sinewave (Into 50Ω, ±10%)   | +8 dBm Min., +10 typ. dBm, +12 dBm Max.  |          |          |          |          |
| <b>Supply Voltage</b>  | 12.0 Vdc, ±5%  |          |          |          |          |
| <b>Output Load</b>   | 50 ohms ±5%  |          |          |          |          |
| <b>Harmonics</b> (Into 50Ω, ±5%)   | -30 dBc Typ.   |          |          |          |          |
| <b>Spurs</b>   | -80 dBc Typ.   |          |          |          |          |
| <b>Frequency Stability</b>   | ±150.0 ppb (-40°C to +85°C)  |          |          |          |          |
| <b>Frequency Vs Aging</b>  | ±0.5 ppm (1 <sup>st</sup> year)<br>±1.25 ppm (10 year)   |          |          |          |          |
| <b>Warm Up</b>   | ±0.100ppm (5 minutes @25°C Referenced to 30 Min.)  |          |          |          |          |
| <b>Initial Accuracy @ 25°C</b>   | ±0.25 ppm with Vc = +5.00 VDC  |          |          |          |          |
| <b>Current @ 25 ° C (Start Up)</b><br><b>Current @ 25 ° C (Steady State)</b>                         | 4.8 Watts Typ.<br>1.5 Watts Typ.   |          |          |          |          |
| <b>Voltage Control</b><br>EFC Swing<br>Pullability<br>Input Impedance<br>Linearity (Slope =Positive) | 0.0 VDC Min., +5.0 typ., +10.0 VDC Max.<br>±1.0ppm Min., ±2.0ppm Max.<br>110K Ω Min.<br>10% Typ. |          |          |          |          |
| <b>Phase Noise (dBc/Hz)</b>  | <b>Option</b>  | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> |
|  | 10Hz   | - 90     | - 95     | -100     | -103     |
|  | 100Hz  | -120     | -125     | -130     | -133     |
|  | 1kHz   | -152     | -155     | -155     | -157     |
|  | 10kHz  | -165     | -165     | -168     | -172     |
|  | 100kHz   | -170     | -170     | -172     | -175     |
| <b>Operating</b>   | -40° C to +85° C   |          |          |          |          |
| <b>Storage</b>   | -55° C to +95° C   |          |          |          |          |



**Part Number Guide**

**Sample Part Number: I428D-92AWV-100.000 MHz**

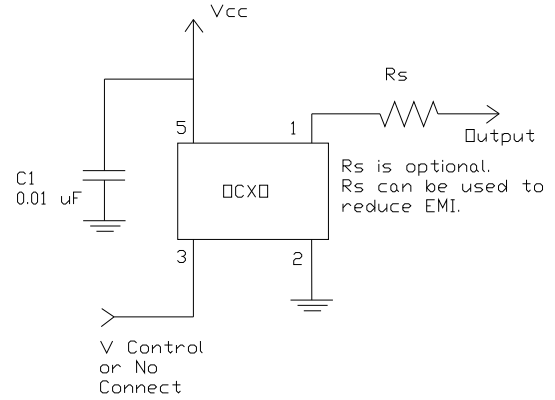
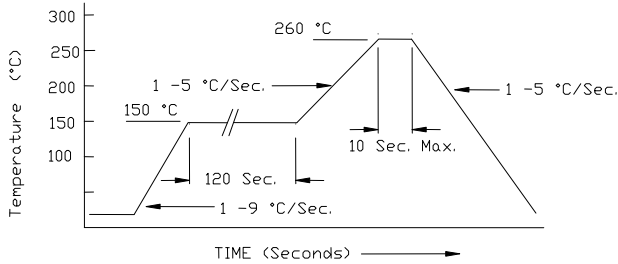
| Package | Phase Noise Option (see table above) | Input Voltage | Operating Temperature | Output   | Frequency Stability (in ppb) | Voltage Control | Frequency    |
|---------|--------------------------------------|---------------|-----------------------|----------|------------------------------|-----------------|--------------|
| I428    | (Phase Noise Option) -               | 9 = +12.0V    | 2= -40° C to +85° C   | A = Sine | W = ±150                     | V = Controlled  | -100.000 MHz |

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**I428 Series**

**Pb Free Solder Reflow Profile:**

**Typical Application:**



\*Units are backward compatible with 240C reflow processes

**Package Information:**

MSL = N.A. (package does not contain plastic, storage life is unlimited under normal room conditions).  
Termination = e1 (Sn / Cu / Ag over Ni over Kovar base metal).

**Environmental Specifications**

|           |  |
|-----------|--|
| Shock     | MIL-STD-202G, Method 213, Condition C            |
| Vibration | MIL-STD-202G, Method 204, Method 204 Condition A |

**Marking**

Line 1: ILSI and Date Code  
Line 2: X-XXXXX (Part Number detail = I428X-XXXXX-Freq.)  
Line 2: Frequency