

## OUTPUT

### Frequency

100 MHz

### Level

+8 ±2 dBm min. into 50 ohms

## STABILITY

### Aging

±1 x 10<sup>-6</sup> per year

after 30 days operating, typical

### Phase Noise L(f), typical, Static

#### 100 MHz

|         |      |                 |
|---------|------|-----------------|
| 10 Hz   | -95  | dBc/Hz *typical |
| 100 Hz  | -127 | dBc/Hz          |
| 1 kHz   | -152 | dBc/Hz          |
| 10 kHz  | -165 | dBc/Hz          |
| 100 kHz | -172 | dBc/Hz          |

### Temperature Stability

≤ ±2 x 10<sup>-7</sup>, 0° to +50°C (Ref +25°C)

≤ ±5 x 10<sup>-7</sup>, -20° to +70°C (Ref +25°C)

≤ ±1.5 x 10<sup>-6</sup>, -40° to +85°C (Ref +25°C)

### Harmonics

≤ -30 dBc

### Spurious

≤ -80 dBc

## MECHANICAL

### Dimensions

≤ 1.03" x 1.03" x 0.515"

### Connectors

Solder pins on base, glass stand-offs

### Packaging

Solder sealed steel can

## POWER REQUIREMENTS

### Warm-Up Power

< 3W for 2.5 min

### Total Power

1.1W at +25°C steady state, typical

### Supply Voltage

+5 VDC, ±5%

## ADJUSTMENT

### Electrical Tuning

±5 x 10<sup>-6</sup>, 0 - 5 VDC

Positive slope

## CRYSTAL

### Type

SC-cut, low-g:

-01 3e-10/g typical

-02 3e-10/g per axis, guaranteed

-03 2e-10/g per axis, guaranteed

## ENVIRONMENTAL

### Temperature-Altitude

40,000 feet at -40°C, operating

### Storage

-54° to +85°C

### Vibration

10 to 1000 Hz, 0.06 g<sup>2</sup>/Hz

1000 Hz to 2000 Hz, -6dB/Octave

10 gs RMS

### Shock

12 gs for 11 msec, three axes

Secure when mounting using

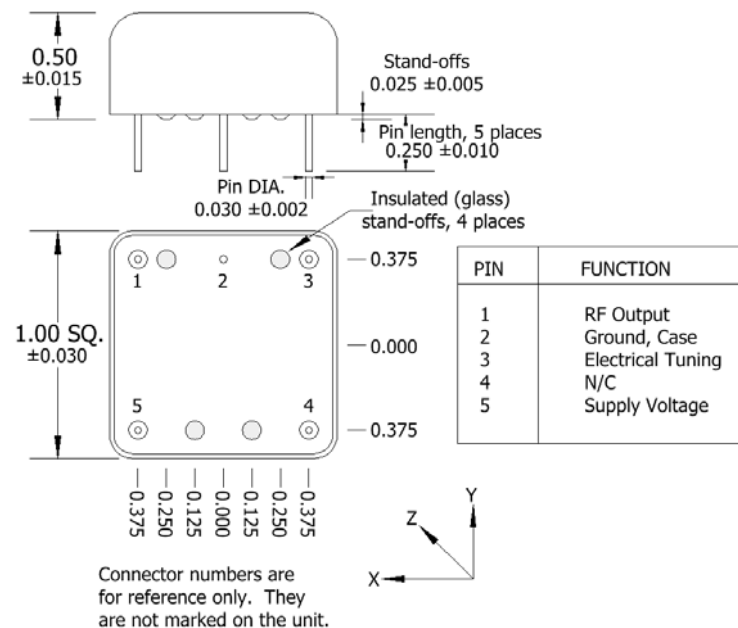
MIL-Grade epoxy

### Humidity

95 to 100 percent relative humidity,

+28° to +85°C

| REV | DATE     | REVISION RECORD | DWN | AUTH |
|-----|----------|-----------------|-----|------|
| -   | 02-18-15 | Initial Release | LR  | BH   |
|     |          |                 |     |      |
|     |          |                 |     |      |
|     |          |                 |     |      |
|     |          |                 |     |      |



| Vibration Frequency | 10    | 30    | 100   | 300   | 500   | 1000   | 2000   |
|---------------------|-------|-------|-------|-------|-------|--------|--------|
| Vibration Profile   | 0.06  | 0.06  | 0.06  | 0.06  | 0.06  | 0.06   | 0.015  |
| L(f)                | -65.7 | -75.2 | -85.7 | -95.2 | -99.7 | -105.7 | -117.7 |

## TEST DATA

Output Level at +25°C

Static and Dynamic Phase Noise

Temperature Stability

Power – Warm-up and Total at +25°C

-01 Phase Noise under vibration at  
0.06 g<sup>2</sup>/Hz at 100 Hz in one axis

-02 Phase Noise under vibration data,  
3 axes

-03 Phase Noise under vibration data,  
3 axes



**Wenzel Associates, Inc.**

Austin, Texas

Title:

**Premium 100 MHz-SC Rugged ONYX IV Crystal Osc. +5V**

P/N:

**501-27113-XX**

Rev:

**-**

Date:

**02-18-15**

Drawn:

**62821**

Ref:

**24762**

Tolerances:  
(except as noted)  
Dimensions are in inches

0.XX Dec:

**±0.030"**

0.XXX Dec:

**±0.010"**

FSCM:

**62821**

Page 1 of 1