


**OX-501**
**Features**

- 6-Pin SMD package
- Fast warm-up
- Frequency Range, 10 MHz to 40 MHz
- Standard freq: 10, 12.8, 16.384, 19.2, 20, 24.576, 25, 26, MHz,

**Applications**

- Base stations
- Test equipment
- Femto base station
- Military communication equipment

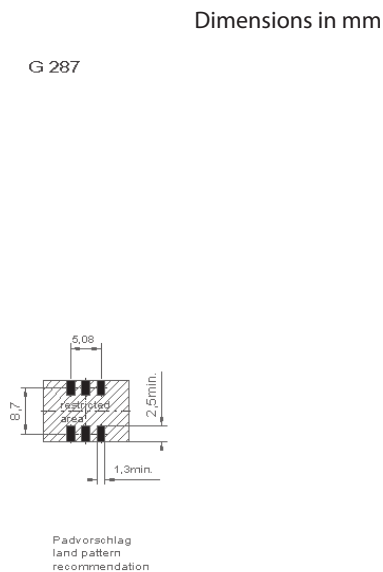
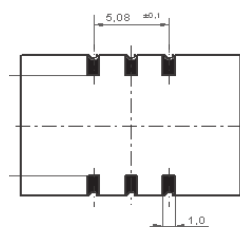
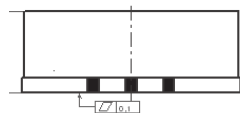
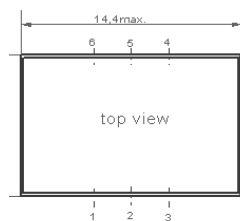
**Performance Specifications**

| Frequency Stabilities <sup>1</sup> 10 to 40 MHz       |            |         |            |            |   |                      |
|---|------------|---------|------------|------------|---|----------------------|
| Parameter   | Min        | Typical | Max        | Units      | Condition   | Options <sup>5</sup> |
| vs. operating temperature range (referenced to +25°C) | -20<br>-20 |         | +20<br>+20 | ppb<br>ppb | -20 to +70°C<br>-40 to +85°C                              |                      |
| slope   | -2         |         | +2         | ppb/°C     | @ Temp stab. +-10ppb                                      |                      |
| Initial tolerance                                     | -0.5       |         | +0.5       | ppm        | at time of shipment, nominal EFC                          |                      |
| vs. supply voltage change                             | -20        |         | +20        | ppb        | V <sub>s</sub> ±5% static                                 |                      |
| vs. load change                                       | -30        |         | +30        | ppb        | Load ±5% static   |                      |
| vs. aging / day                                       | -5         |         | +5         | ppb        | after 30 days of operation                                |                      |
| vs. aging / year                                      | 500        |         | +500       | ppb        | after 30 days of operation                                |                      |
| vs. aging / 10 years                                  |            |         |            |            | after 30 days of operation                                |                      |
| Holdover  |            |         |            |            |   |                      |
| Start up time   |            |         |            |            |   |                      |
| Warm-up time  |            |         | 3          | minutes    | to ±200ppb of final frequency (1 hour reading)<br>@ +25°C |                      |

## Performance Specifications

| Supply Voltage (Vs)        |                            |         |       |        |                            |         |
|----------------------------|----------------------------|---------|-------|--------|----------------------------|---------|
| Parameter                  | Min                        | Typical | Max   | Units  | Condition                  |         |
| Supply voltage (standard)  | 3.135                      | 3.3     | 3.465 | VDC    |                            |         |
| Power consumption          |                            | 1.4     | 2.0   | Watts  | during warm-up             |         |
|                            |                            | 0.5     | 0.66  | Watts  | steady state @ +25°C       |         |
| RF Output                  |                            |         |       |        |                            |         |
| Signal [standard]          | HCMOS                      |         |       |        |                            |         |
| Load                       |                            | 15      |       | pF     |                            |         |
| Signal Level (Vol)         |                            |         | 0.4   | VDC    | with Vs=3.3V and 15pF Load |         |
| Signal Level (Voh)         | 2.4                        |         |       | VDC    | with Vs=3.3V and 15pF Load |         |
| Duty Cycle                 | 45                         |         | 55    | %      | @ (Voh-Vol)/2              |         |
| Frequency Tuning (EFC)     |                            |         |       |        |                            |         |
| Tuning Range               | Fixed OCXO; No adjust      |         |       |        | Opti-<br>on <sup>5</sup>   |         |
| Tuning Range               | ±5                         |         | ±12   |        |                            |         |
| Linearity                  | 10%                        |         |       |        |                            |         |
| Tuning Slope               | Positive                   |         |       |        |                            |         |
| Control Voltage Range      | 0.0                        | 1.4     | 2.8   | VDC    | with Vs=3.3V               |         |
| Additional Parameters      |                            |         |       |        |                            |         |
| Phase Noise <sup>3</sup>   |                            | -60     | -45   | dBc/Hz | 1 Hz                       | @ 20MHz |
|                            |                            | -100    | -95   | dBc/Hz | 10 Hz                      |         |
|                            |                            | -128    | -120  | dBc/Hz | 100 Hz                     |         |
|                            |                            | -140    | -135  | dBc/Hz | 1 kHz                      |         |
|                            |                            | -148    | -145  | dBc/Hz | 10 kHz                     |         |
| Weight                     |                            |         | 8.0   | g      |                            |         |
| Processing & Packing       | Handling & Processing Note |         |       |        |                            |         |
| Absolute Maximum Ratings   |                            |         |       |        |                            |         |
| Supply voltage (Vs)        |                            |         | 4.0   | V      | with Vs=3.3 VDC            |         |
| Output Load                |                            |         | 50    | pF     |                            |         |
| Operable Temperature Range | -40                        |         | +85   | °C     |                            |         |
| Storage Temperature Range  | -40                        |         | +85   | °C     |                            |         |

## Outline Drawing / Enclosure

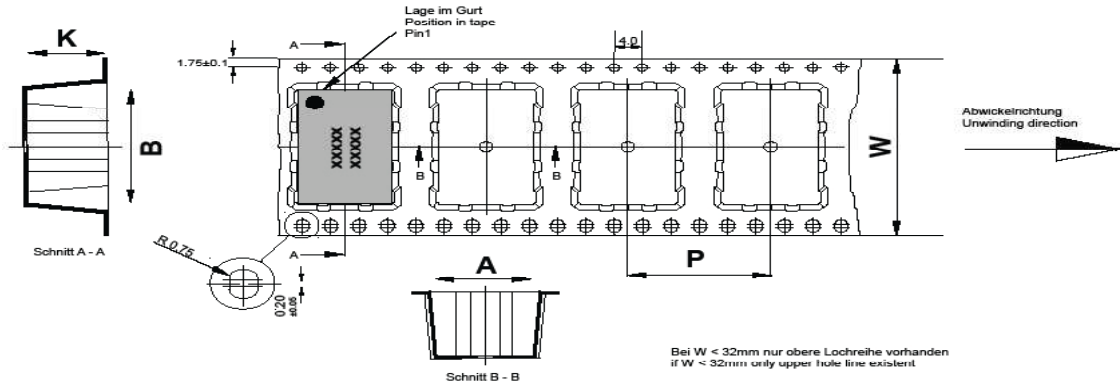


| OX-501     |                |
|------------|----------------|
| Height "H" | cover material |
| 6.2        | plastic        |

| Pin Connections |                                     |
|-----------------|-------------------------------------|
| 1               | I.C (Do not connect) / EFC (option) |
| 2               | N.C                                 |
| 3               | Ground (Case)                       |
| 4               | RF Output                           |
| 5               | N.C / Enable (option)               |
| 6               | Supply Voltage Input                |

| Enable true table |               |
|-------------------|---------------|
| pin 5             | pin 4         |
| high              | data          |
| open              | data          |
| low               | high tristate |

# Standard Shipping Method (OX-501)



|   |   |
|---|---|
| <b>Maßangaben in mm:</b><br>A, B und K Maße von Bauelement abhängig<br>Fertigungstoleranzen entsprechen der DIN IEC 286-3 | <b>Dimension in mm:</b><br>A, B und K are dependent upon component dimensions<br>production tolerance complying DIN IEC 286-3 |
|---|---|

All dimensions in millimeters unless otherwise stated

| Enclosure Type   | Tape Width W (mm) | Quantity per meter | Quantity per reel | Dimension P |
|------------------|-------------------|--------------------|-------------------|-------------|
| OX-5011 (6.2 mm) | 24                | 83.5               | 850               | 12          |

## Reflow Profile

IPC/JEDEC J-STD-020 (latest revision)

Additional Information:

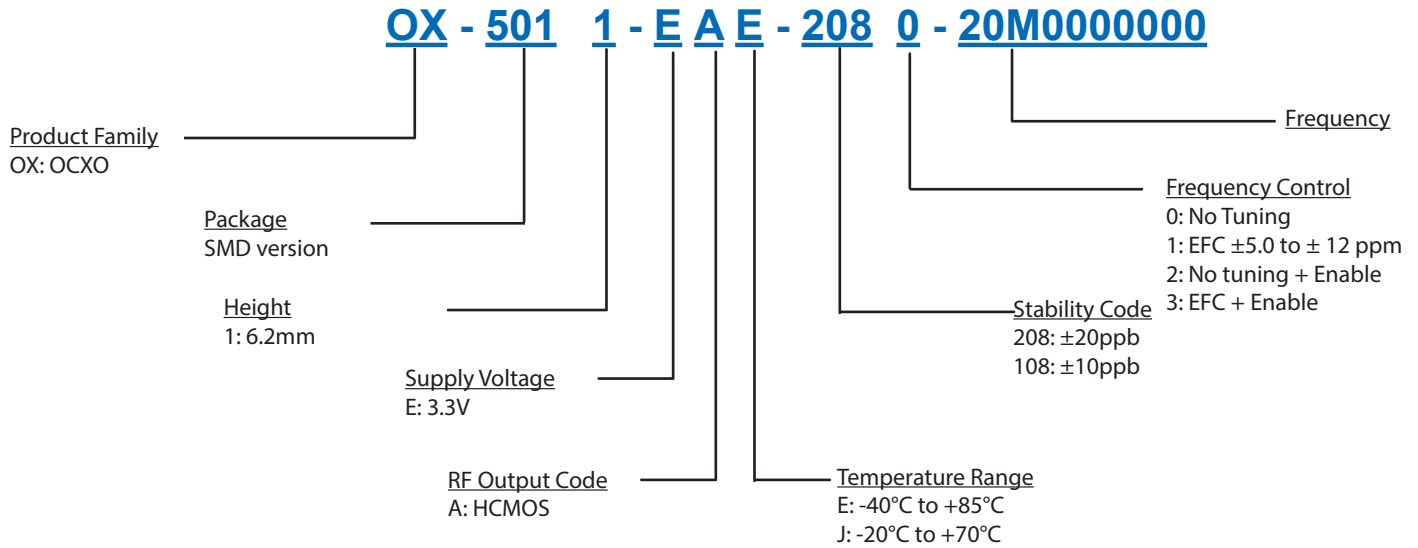
This SMD oscillator has been designed for pick and place reflow soldering.

SMD oscillators must be on the top side of the PCB during the reflow process.

## Additional Environmental Conditions

| Parameter                 | Description   |
|---------------------------|---|
| Rapid temperature changes | MIL-883-1010 Cond B 500 cycles -55/125C   |
| Vibration                 | MIL-STD-883 Meth 2007 Cond A 20G 20-2000Hz 4x in each 3axis 4 min   |
| Shock                     | JESD22-B104-B 200G 1,5ms 6 shocks in each direction   |
| Solderability             | J_STD_002C Cond A, Through hole device/ Cond. B, SMD 255C (diving time 50,5sec.) Dip+Look with 8h damp pre-treatment: solder wetting >95% |
| Solvent resistance        | MIL-STD-883 Meth 2015 Solv. 1,3,4   |
| ESD                       | HBM JESD22-A114-E Class 2 10* 2000V   |
| Moisture Sensit.          | Level 1 JESD22-A113-B   |
| RoHS compliance           | 100% RoHS 6 compliant   |
| Washable                  | non-washable device   |

## Ordering Information



**Notes:**

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Contact factory for availability.

## For Additional Information, Please Contact

**USA:**

Vectron International  
267 Lowell Road Suite 102  
Hudson, NH 03051  
Tel: 1.888.328.7661  
Fax: 1.888.329.8328

**Europe:**

Vectron International  
Landstrasse, D-74924  
Neckarbischofsheim, Germany  
Tel: +49 (0) 7268.801.100  
Fax: +49 (0) 7268.801.282

**Asia:**

Vectron International  
68 Yin Cheng Road(C), 22nd Floor  
One LuJiaZui  
Pudong, Shanghai 200120, China  
Tel: +86 21 6194 6886  
Fax: +86 21 6194 6699

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