

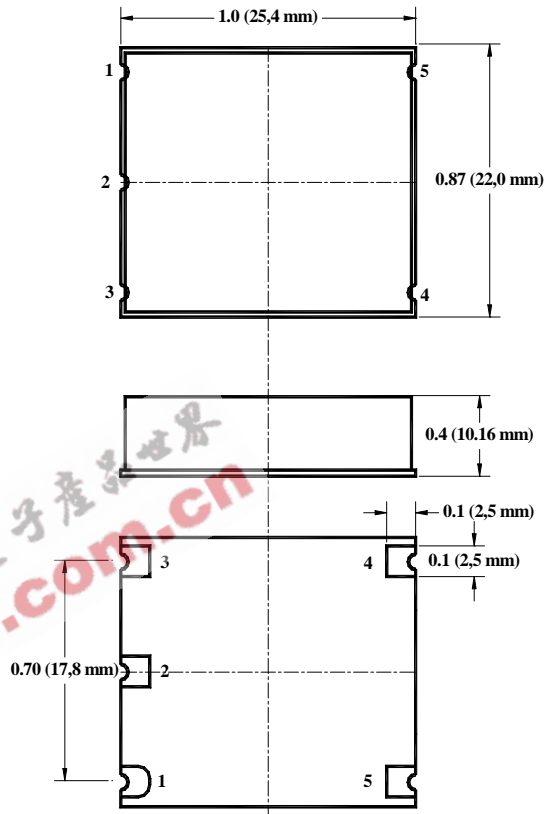
**OF-XBAXXXX Series**  
**UHF SMD TCVCXO**

Rev. B

**Description:** The OF-XBAXXXX Series of SMD temperature compensated, voltage controlled crystal oscillators (TCVCXO), provides Ultra High Frequency with excellent temperature stability, low phase noise in a small surface mount FR4 based package.

**Features**

- Small, Low Profile SMD Package
- Low Phase Jitter and Phase Noise
- Excellent Frequency Stability
- Ultra High Frequency – up to 2.5 GHz
- Sine-Wave output
- Stratum3 available



**Creating a Part Number**

**OF - X BA X XX X**

**Package Code**  
OF 5 Pad 25x22mm SMD

**Supply Voltage**

| Code | Specification |
|------|---------------|
| 0    | 5V ±5%        |
| A    | 3.3V ±5% *    |

**TCXO/TCVCXO Option**

| Code | Specification |
|------|---------------|
| X    | No V. Control |
| V    | W/ V. Control |

**Temperature Range**

| Code | Specification |
|------|---------------|
| E    | -10°C to 60°C |
| B    | 0°C to 70°C   |
| C    | -20°C to 70°C |
| D    | -40°C to 85°C |

**Temp. Frequency Stability**

| Code | Specification |
|------|---------------|
| 1    | ±1.0 ppm      |
| 2    | ±2.5 ppm      |
| 3    | ±0.28 ppm     |

## OF-XBAXXXX Series UHF SMD TCVCXO

Rev. B

### Specifications

| Parameter | Symb | Condition | Min | Typ | Max | Unit | Note |
|-----------|------|-----------|-----|-----|-----|------|------|
|-----------|------|-----------|-----|-----|-----|------|------|

### Absolute Maximum Ratings

|                          |     |  |      |  |     |    |  |
|--------------------------|-----|--|------|--|-----|----|--|
| Input Break Down Voltage | Vcc |  | -0.5 |  | 5.5 | V  |  |
| Storage temp.            | Ts  |  | -40  |  | 105 | °C |  |
| Contr. Voltage           | Vc  |  | -1   |  | 9   | V  |  |

### Electrical

|                      |              |  |                              |  |               |                                 |   |
|----------------------|--------------|--|------------------------------|--|---------------|---------------------------------|---|
| Frequency Range      | F            |  | 1.0                          |  | 2.5           | GHz                             |   |
| Input Voltage        | Vcc          |  | 3.135<br>4.75                | 3.30<br>5.0                                    | 3.465<br>5.25 | V                               | 3*<br>5                                       |
| Input Current        | Icc          | +3dBm Output                                 |                              |  | 100           | mA                              |   |
| Frequency Stab.      | $\Delta F/F$ | Overall, available                           |                              |  | $\pm 4.6$     |                                 | 20 years                                      |
| Frequency Stability  | $\Delta F/F$ | vs. Temperature<br>vs. Vcc<br>aging          |                              | $\pm 0.5$<br>$\pm 0.1$<br>$\pm 1$<br>$\pm 3.5$ | $\pm 1$       | ppm<br>ppm/V<br>ppm/year<br>ppm | See chart<br>First Year<br>10 years           |
| Calibration          | $\Delta F/F$ | As shipped, 25°C                             |                              | $\pm 0.5$                                      | $\pm 1$       | ppm                             |   |
| Load                 |              |  | Internally AC-coupled 50 Ohm |  |               |                                 |   |
| Output power         | P            | Into 50 Ohm                                  | 0                            | 3  |               | dBm                             | Higher Power<br>available, consult<br>factory |
| Start up time        | Ts           |  |                              | 2  | 10            | ms                              |   |
| Jitter               |              | 12KHz to 20MHz,<br>RMS                       |                              |  | 1.0           | ps                              |   |
| Subharmonics         |              |  |                              |  | none          |                                 |   |
| Spurious             |              |  |                              |  | -60           | dBc                             |   |
| Harmonics            |              | Sine-wave                                    |                              | -20  | -12           | dBc                             |   |
| SSB Phase Noise      |              | @ 100 Hz<br>@ 1 KHz<br>@ 10 KHz<br>@ 100 KHz |                              | -80<br>-95<br>-100<br>-120                     |               | dBc/Hz                          | @ 1,000 MHz                                   |
| SSB Phase Noise      |              | @ 100 Hz<br>@ 1 KHz<br>@ 10 KHz<br>@ 100 KHz |                              | -75<br>-90<br>-98<br>-115                      |               | dBc/Hz                          | @ 2,000 MHz                                   |
| Input Impedance      |              |  | > 10KOhm                     |  |               |                                 |   |
| Control voltage      | Vc           |  | 0                            |  | 3.3           | V                               |   |
| Modulation bandwidth | MB           |  | 100 Hz                       |  |               |                                 | Contact Factory for<br>wider MB               |
| Deviation            |              | Vc=0V to 3.3V, 25°C                          | $\pm 5$                      | $\pm 7$  |               | ppm                             |   |

**OF-XBAXXXX Series  
UHF SMD TCVCXO**

**Rev. B**

*Environmental and Mechanical*

|                              |  |
|------------------------------|--|
| <b>Operating temp. range</b> | 0°C to 70°C , -40°C to 85°C, see chart, page 1                           |
| <b>Mechanical Shock</b>      | Per MIL-STD-202, Method 213, Cond. E                                     |
| <b>Thermal Shock</b>         | Per MIL-STD-883, Method 1011, Cond. A                                    |
| <b>Vibration</b>             | Per MIL-STD-883, Method 2007, Cond. A                                    |
| <b>Soldering Conditions</b>  | See MAX reflow profile   |
| <b>Hermetic Seal</b>         | Leak rate less than $1 \times 10^{-8}$ atm.cc/s of helium (crystal only) |

*Electrical Connections*

|                |   |
|----------------|---|
| <b>Pin Out</b> | Pin #1- Voltage Control ; Pin #2 – N/C ; Pin #3 – Vcc; Pin#4 – Output; Pin #5 – GND |
|----------------|---|

\* Note: 3.3V supply is not available for all frequencies and performance. Please consult factory

**Maximum solder reflow profile**

