AXTAL ADVANCED XTAL PRODUCTS

| Specification | AXIS207 | Rev.: 2 | Date: 2014-04-05 |
|---|---|---|---|

## Oscillator type: VCXO in DIL14 package

| Parameter | min. | typ. | max. | Unit | Condition |
|---|---|---|---|---|---|
| **Frequency range** | 6<br>1 | | 190<br>800 | MHz<br>MHz | Sine wave<br>HCMOS, PECL, LVDS |
| **Frequency stability** | | | | ppm | |
| Overall stability | | | | ppm | |
| vs. operating temperature range | ±10 to ±100<br>See tables 1 & 2 | | | ppm | Option 3 & 4 |
| Long term (aging) per year | | | ±3 | ppm | |
| **Frequency adjustment range** | | | | | |
| Electronic Frequency Control (EFC) | ±50<br>±100<br>±150 | | | ppm<br>ppm<br>ppm | Option 5 = "5"<br>Option 5 = "10"<br>Option 5 = "15" |
| EFC voltage $V_C$ | 0.15<br>0 | 1.65<br>2.5 | 3.15<br>5 | V<br>V | Option 1 = "3"<br>Option 1 = "5" |
| EFC slope ($\Delta f / \Delta V_C$) | Positive<br>Negative | | | | Option 6 = blank<br>Option 6 = "N" (Note 2) |
| EFC input impedance | 100 | | | kΩ | |
| **RF output** | | | | | |
| Signal waveform | Sine wave<br>HCMOS<br>PECL<br>LVDS | | | | Option 2 = "S"<br>Option 2 = "H"<br>Option 2 = "P"<br>Option 2 = "L" |
| Load | 50 Ω<br>15 pF<br>50 Ω + Bias | | | | Option 2 = "S"<br>Option 2 = "H"<br>Option 2 = "P" or "L" |
| Amplitude | | 0<br>+10 | | dBm<br>dBm | Option 2 = "S" / 3.3 V<br>Option 2 = "S" / 5.0 V |
| | According to relevant Logic Standard | | | | Option 2 = "H", "P", "L" |
| **Supply voltage $V_S$** | 3.15<br>4.75 | 3.3<br>5.0 | 3.45<br>5.25 | V<br>V | Option 1 = "3"<br>Option 1 = "5" |
| **Current consumption** (Note 3) | 15 ~ 70<br>15 ~ 100<br>25 ~ 100 | | | mA<br>mA<br>mA | Option 2 = "S"<br>Option 2 = "H"<br>Option 2 = "P" or "L" |
| **Enclosure (see drawing) (LxWxH)** | 20.7x13.1x7.5 max. | | | mm | IEC 60679-3 CO 02 |
| **Weight** | | | 5 | g | |
| **Packing** | Palette or Tube | | | | IEC 60286-3 |

**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Negative slope only available for HCMOS Output version (Option 2 = "H")
3. Depending on frequency and supply voltage
4. All combinations of options might not be available. Please consult factory

## Absolute Maximum Ratings

| Parameter | min. | max. | Unit | Condition |
|---|---|---|---|---|
| Supply Voltage $V_S$ | -0.5 | $V_S$ + 10% | V | $V_S$ to GND |
| Control Voltage $V_C$ | -0.5 | 6 | V | $V_C$ to GND |
| Storage Temperature | -45 | +90 | °C | |

## Frequency stability vs. temperature

| Option 3 | Stability [ppm] |
|---|---|
| 10 | ±10 |
| 15 | ±15 |
| 20 | ±20 |
| 30 | ±30 |
| 50 | ±50 |
| 100 | ±100 |

| Lower Temperature | | Upper Temperature | |
|---|---|---|---|
| Option 4 | T [°C] | Option 4 | T [°C] |
| 0 | 0 | A | +50 |
| 1 | -10 | B | +60 |
| 2 | -20 | C | +70 |
| 3 | -30 | D | +75 |
| 4 | -40 | E | +80 |
| | | F | +85 |

**Table 1**

## Ordering Code

| Model | Option 1 [Supply Voltage] | Option 2 [RF output] | Option 3 [Stability] | Option 4 [Temperature range] |
|---|---|---|---|---|
| AXIS207 | 3 or 5 | S, H, P, L | Table 1 | Table 2 |

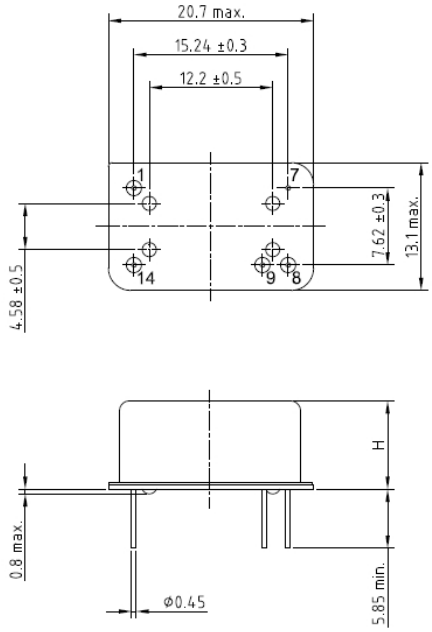
| Option 5 [Tuning Range] | Option 6 [Tuning slope] | Revision | Frequency [MHz] |
|---|---|---|---|
| 5, 10, 15 | _ or "N" | Rev.2 | 10.000 |

**Example: AXIS207-5-S-10-1B-N_Rev.2 – 10.000 MHz**

## Handling and Testing

| Parameter | Procedure | | Source |
|---|---|---|---|
| Handling and Testing | Application Note AXAN-011 | | www.axtal.com |
| Processing | Application Note AXAN-012 | | www.axtal.com |
| | | | |
| **Parameter** | **Procedure** | | **Condition** |
| Electrostatic discharge (ESD) | | | |
| THD devices | IEC60749-26 | HBM | 2000 V |
| SMD devices | IEC60749-27 | MM | 200 V |
| Washable | ✖ Yes ☐ No | | |
| RoHS compliant | ✖ Yes ☐ No | | |

## Enclosure drawing




## Pin connections

### Sine wave and HCMOS Output:

| Pin # | Symbol | Function |
|---|---|---|
| **1** | $V_C$ | Voltage Control (EFC) |
| **7** | GND | Ground |
| **8** | RF OUT | RF Output |
| **9** | - Pin Not Present - | |
| **14** | Vs | Supply Voltage |

### PECL and LVDS Output:

| Pin # | Symbol | Function |
|---|---|---|
| **1** | $V_C$ | Voltage Control (EFC) |
| **7** | GND | Ground |
| **8** | RF OUT | RF Output |
| **9** | Comp OUT | Complementary RF Output |
| **14** | Vs | Supply Voltage |

## Environmental conditions

| Test | IEC 60068 Part … | IEC 60679-1 Clause | MIL-STD-202G Method | MIL-STD-810F Method | MIL-PRF-55310D Clause | Test conditions (IEC) |
|---|---|---|---|---|---|---|
| Sealing tests (if applicable) | 2-17 | 5.6.2 | 112E | | 3.6.1.2 | Gross leak: Test Qc,<br>Fine leak: Test Qk |
| Solderability<br>Resistance to soldering heat | 2-20<br>2-58 | 5.6.3 | 208H<br>210F | | 3.6.52<br>3.6.48 | Test Ta Method 1<br>Test $Td_1$ Method 2<br>Test $Td_2$ Method 2 |
| Shock* | 2-27 | 5.6.8 | 213B | 516.4 | 3.6.40 | Test Ea, 3 x per axes 100g,<br>6 ms half-sine pulse |
| Vibration, sinusoidal* | 2-6 | 5.6.7.1 | 201A<br>204D | 516.4-4 | 3.6.38.1<br>3.6.38.2 | Test Fc, 30 min per axes,<br>10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g |
| Vibration, random* | 2-64 | 5.6.7.3 | 214A | 514.5 | 3.6.38.3<br>3.6.38.4 | Test Fdb |
| Endurance tests<br>- ageing<br>- extended aging | | <br>5.7.1<br>5.7.2 | 108A | | <br>4.8.35 | <br>30 days @ 85°C, OCXO @25°C<br>1000h, 2000h, 8000h @85°C |

Other environmental conditions on request

Data sheet is for information purposes only and may be subject to modifications or may be discontinued without notice.

## Revision History

| Rev. | Drawing | Date [dd.mm.yyyy] | Remarks | Author | Checked |
|---|---|---|---|---|---|
| 2 | D1 | 01.10.2012 | Editorial changes | BN | BN |
| 2 | D2 | 05.04.2014 | Environmental conditions updated, editorial changes | HH | HH |