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| Specification | AXPLT2500 | Rev.: 1 | Date: 2016-08-19 |
|----------------------|------------------|---------|------------------|

**Oscillator type: SHF Low Noise Phase-Locked Crystal Oscillator (PLXO)
with internal TCXO reference**

| Parameter | min. | typ. | max. | Unit | Condition |
|---|---------------------|------|------|--------|-------------------------|
| Reference frequency (input) f_{REF} | 10 | | 150 | MHz | |
| Output frequency f_{OUT} | 3 | | 12 | GHz | Multiplication (Note 2) |
| Frequency stability (free running) | (Note 3) | | | | |
| frequency tolerance | | | ±1 | ppm | |
| vs. operating temperature range | | | ±1 | ppm | |
| vs. supply voltage variation (pushing) | | | ±0.1 | ppm | $V_S \pm 5\%$ |
| vs. load change (pulling) | | | ±0.1 | ppm | $R_L \pm 5\%$ |
| Long term (aging) per year | | | ±1 | ppm | after 30 days operation |
| Reference input | | | | | |
| Frequency accuracy | | | ±10 | ppm | |
| Signal waveform | Sine wave | | | | |
| Input level | +3 | | +13 | dBm | |
| Input impedance | 50 | | | Ω | |
| RF output | | | | | |
| Signal waveform | Sine wave | | | | |
| Load R_L | 50 | | | Ω | ±5% |
| Output level | +10 | +13 | | dBm | |
| Harmonics | | | -30 | dBc | |
| Sub-harmonics | | | -40 | dBc | |
| Spurious | | | -80 | dBc | |
| PLL Products | | | -60 | dBc | |
| Phase noise (Note 4) | | -100 | -110 | dBc/Hz | @ 10 kHz |
| | | -120 | | dBc/Hz | @ 100 kHz |
| Lock detect (LD) output | | 0 | 1.0 | V | Out of lock |
| | 2.3 | 3.3 | | V | Locked |
| Supply voltage V_S | 11.4 | 12.0 | 12.6 | V | |
| Current consumption | | 250 | 350 | mA | |
| Operating temperature range | -20 | | +70 | °C | |
| Enclosure (see drawing) (LxWxH) | 50.0x50.0x21.0 max. | | | mm | |
| Weight | | | 60 | g | |
| Packing | Palette | | | | |

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Frequency multiplication factor N depends on output frequency f_{OUT}
3. Internal TCXO reference is switched-on at reference input levels below the minimum limit
4. For other phase noise please consult factory

Absolute Maximum Ratings

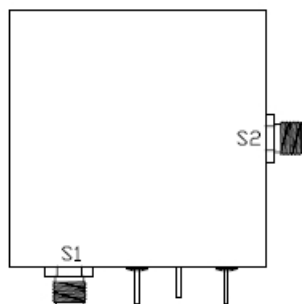
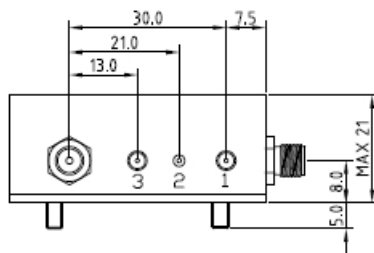
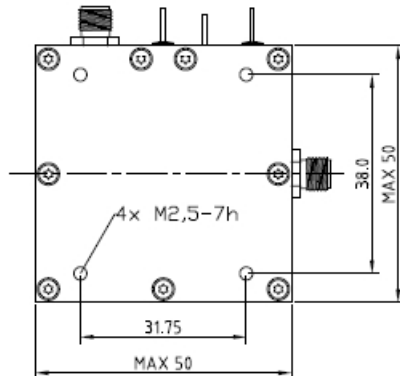
| Parameter | min. | max. | Unit | Condition |
|-----------------------|------|--------------|------|--------------|
| Supply Voltage V_S | -0.5 | $V_S + 10\%$ | V | V_S to GND |
| Reference Input Level | - | +15 | dBm | |
| Storage Temperature | -55 | +105 | °C | |

Ordering Code

| Model | Input Frequency [MHz] | Output Frequency [GHz] | Revision |
|-----------|-----------------------|------------------------|----------|
| AXPLT2500 | 100.000 | 6.500 | Rev.1 |

Example: AXPLT2500-100.000-6.500_Rev.1

Enclosure drawing



Pin connections:

| Pin # | Symbol | Function |
|-------|----------------|---------------------------|
| 1 | V _s | Supply Voltage |
| 2 | GND | Ground |
| 3 | LD | Lock Detect Output |
| SMA1 | RF OUT | RF Output |
| SMA2 | FREF | Reference Frequency Input |

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 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| RoHS- Compliant | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |

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, Fine leak: Test Qk |
| Solderability Resistance to soldering heat | 2-20 2-58 | 5.6.3 | 208H 210F | | 3.6.52 3.6.48 | Test Ta Method 1 Test Td ₁ Method 2 Test Td ₂ Method 2 |
| Shock* | 2-27 | 5.6.8 | 213B | 516.4 | 3.6.40 | Test Ea, 3 x per axes 100g, 6 ms half-sine pulse |
| Vibration, sinusoidal* | 2-6 | 5.6.7.1 | 201A 204D | 516.4-4 | 3.6.38.1 3.6.38.2 | Test Fc, 30 min per axes, 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 3.6.38.4 | Test Fdb |
| Endurance tests - ageing - extended aging | | 5.7.1 5.7.2 | 108A | | 4.8.35 | 30 days @ 85°C, OCXO @25°C 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 |
|------|---------|----------------------|---|--------|---------|
| 1 | D0 | 21.09.2015 | First issue | HH | HH |
| 1 | D1 | 01.02.2016 | PLL Spurious added | HH | HH |
| 1 | D2 | 10.05.2016 | Typical phase noise at 10 kHz added | HH | HH |
| 1 | D0 | 16.06.2016 | Model name changed from AXPLO2000 to AXPLO2500 | HH | HH |
| 1 | D0 | 19.08.2016 | Model name with TCXO reference changed to AXPLT2500 | HH | HH |