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| Specification | AXIOM35 | Rev.: 9 | Date: 2014-04-18 |
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Oscillator type: High Stability Miniature OCXO with Sine Wave Output

| Parameter | min. | typ. | max. | Unit | Condition |
|--|----------------------------------|--------------------|----------------------|----------------|---|
| Frequency range | 10 | | 125 | MHz | |
| Standard frequencies | 10.000/40.000/100.000 | | | MHz | |
| Frequency stability | | | | | |
| Initial tolerance @ +25°C | | | ±300 | ppb | V _c @ VREF/2 |
| vs. operating temperature range | Option 2 & 3 See tables 1 & 2 | | | | steady state |
| vs. supply voltage variation (pushing) | | | ±10 | ppb | V _s ±5% |
| vs. load change (pulling) | | | ±10 | ppb | R _L ±10% |
| Long term (aging) per day (after 30 days operation) (Note 2) | | | ±10 ±2 | ppb ppb | AT-Cut SC-Cut |
| Long term (aging) 1 st year (after 30 days operation) (Note 2) | | ±300 ±50 | ±500 ±200 | ppb ppb | AT-Cut SC-Cut |
| Frequency adjustment range | | | | | |
| Electronic Frequency Control (EFC) | ±2 ±0.8 | | ±5 | ppm ppm | AT-Cut SC-Cut |
| EFC voltage V _c | 0 | VREF/2 | VREF | V | |
| EFC slope (Δf / ΔV _c) | Positive | | | | |
| EFC input impedance | 100 | | | kΩ | |
| RF output | | | | | |
| Signal waveform | Sine wave | | | | |
| Load R _L | 50 | | | Ω | ±10% |
| Output level (Note 3) | +3 | | | dBm | |
| Harmonics | | | -25 | dBc | |
| Warm-up time @ +25°C | | 3 | 5 | min | Δf _{final} /f ₀ < ±0.1 ppm |
| Phase Noise | Consult factory | | | | |
| Reference voltage VREF output (Note 4) | | 3.0 4.0 5.0 | | V V V | Option 1 = "33" Option 1 = "50" Option 1 = "12" |
| Supply voltage V_s | 3.15 4.75 11.4 | 3.3 5.0 12.0 | 3.45 5.25 12.6 | V V V | Option 1 = "33" Option 1 = "50" Option 1 = "12" |
| Current consumption (steady state) @ +25°C (Note 5) | | | 300 200 100 | mA mA mA | Option 1 = "33" Option 1 = "50" Option 1 = "12" |
| Current consumption (warm-up) (Note 5) | | | 800 600 300 | mA mA mA | Option 1 = "33" Option 1 = "50" Option 1 = "12" |
| Enclosure (see drawing) (LxWxH) | 20.5x20.5x12 max. | | | mm | IEC 60679-3 CO 41 |
| Weight | | | 10 | g | |
| Packing | Palette | | | | |

Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Lower aging on request
3. Other output level on request
4. Other reference voltages on request
5. May be higher for wide operating temperature range

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 | 15 | V | V_C to GND |
| Storage Temperature | -55 | +125 | °C | |

Frequency stability vs. temperature

| Option 2 | Stability [ppb] |
|----------|-----------------|
| 05 | ±5 |
| 10 | ±10 |
| 25 | ±25 |
| 50 | ±50 |
| 100 | ±100 |
| 200 | ±200 |

Table 1

| Lower Temperature | | Upper Temperature | |
|-------------------|--------|-------------------|--------|
| Option 3 | T [°C] | Option 3 | T [°C] |
| 0 | 0 | A | +50 |
| 1 | -10 | B | +60 |
| 2 | -20 | C | +70 |
| 3 | -30 | D | +75 |
| 4 | -40 | E | +80 |
| 5 | -55 | F | +85 |

Table 2

Standard: "1B" = -10°C to +60°C

| Temperature range [°C] | Frequency stability [Option 2] | | | | | |
|------------------------|--------------------------------|----|----|----|-----|-----|
| | 05 | 10 | 25 | 50 | 100 | 200 |
| 0 ~ +50 | SC | SC | SC | AT | AT | AT |
| -10 ~ +60 | SC | SC | SC | AT | AT | AT |
| -20 ~ +70 | SC | SC | SC | SC | AT | AT |
| -30 ~ +70 | O | SC | SC | SC | SC | AT |
| -40 ~ +75 | O | O | SC | SC | SC | SC |
| -40 ~ +85 | O | O | SC | SC | SC | SC |
| -55 ~ +85 | - | O | O | SC | SC | SC |

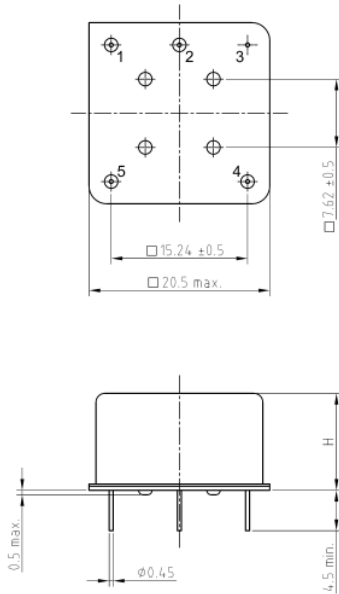
Table 3 "Availability" AT, SC = AT-Cut, SC-Cut available, O = available on request, - not available

Ordering Code

| Model | Option 1 [Supply Voltage] | Option 2 [Stability] | Option 3 [Temperature range] | Revision | Frequency [MHz] |
|---------|---------------------------|----------------------|------------------------------|----------|-----------------|
| AXIOM35 | 12, 33, 50 | Table 1 | Table 2 | Rev.9 | 10.000 |

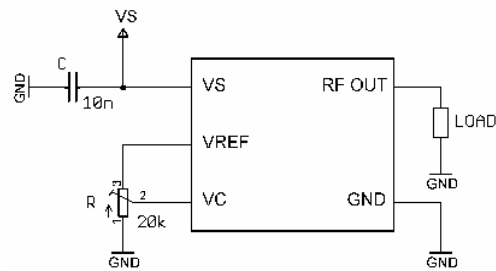
Example: AXIOM35-50-10-1B_Rev.9 – 10.000 MHz

Enclosure drawing



Pin connections

| Pin # | Symbol | Function |
|-------|----------------|-----------------------|
| 1 | V _S | Supply Voltage |
| 2 | RF OUT | RF Output |
| 3 | GND | Ground |
| 4 | V _C | Control Voltage (EFC) |
| 5 | VREF | Reference Voltage |



* See Application Note AXAN-011

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 |
|------|---------|----------------------|---|--------|---------|
| 8 | D0 | 10.10.2013 | Major revision | CG | BN |
| 9 | D0 | 18.04.2014 | Supply options extended, various parameters updated, environmental conditions updated, editorial changes | HH | HH |