

| | | | |
|----------------------|-------------------|---------|------------------|
| Specification | AXIOM5050M | Rev.: 1 | Date: 2014-06-20 |
|----------------------|-------------------|---------|------------------|

Oscillator type: Low Phase Noise OCXO with Multiple Outputs

| Parameter | min. | typ. | max. | Unit | Condition |
|--|----------------------------------|------|------|------|--|
| Frequency range | 50 | | 150 | MHz | |
| Frequency stability | | | | | |
| Initial tolerance @ +25°C | | | ±300 | ppb | @ V _C = 5.0 V |
| 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) | | | ±5 | ppb | R _L ±5% |
| Long term (aging) per day | | ±1 | ±2 | ppb | after 30 days operation |
| Long term (aging) 1 st year | | ±100 | ±200 | ppb | after 30 days operation |
| Frequency adjustment range | | | | | |
| Electronic Frequency Control (EFC) | ±1 | ±2 | | ppm | |
| EFC voltage V _C | 0 | 5.0 | 10.0 | V | |
| EFC slope (Δf / ΔV _C) | Positive | | | | |
| EFC input impedance | 100 | | | kΩ | |
| RF output | | | | | |
| RF output ports (Note 2) | 2, 4, 6 | | | | Option 1 |
| Signal waveform | Sine wave | | | | |
| Load R _L | 50 | | | Ω | ±5% |
| Output level (each port) | +5 | | | dBm | (Note 3) |
| Isolation between RF ports | | 30 | | dB | |
| Harmonics | | | -30 | dBc | |
| Spurious | | | -90 | dBc | |
| Warm-up time @ +25°C | | 3 | 5 | min | Δf _{final} /f ₀ < ±0.1 ppm |
| Phase noise | Consult factory | | | | |
| Supply voltage V_S (Note 4) | 11.4 | 12.0 | 12.6 | V | |
| Current consumption (steady state) | | | 300 | mA | @ +25°C |
| Current consumption (warm-up) | | | 500 | mA | |
| 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. Odd number of ports on request
3. Higher output level on request. Unused ports must be terminated with 50 Ω
4. Other supply voltage on request

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 | O | X | X | X | X | X |
| -10 ~ +60 | O | X | X | X | X | X |
| -20 ~ +70 | O | X | X | X | X | X |
| -30 ~ +70 | O | O | X | X | X | X |
| -40 ~ +75 | - | O | X | X | X | X |
| -40 ~ +85 | - | - | O | X | X | X |
| -55 ~ +85 | - | - | O | X | X | X |

Table 3 "Availability"

X = available, O = available on request, - not available

Ordering Code

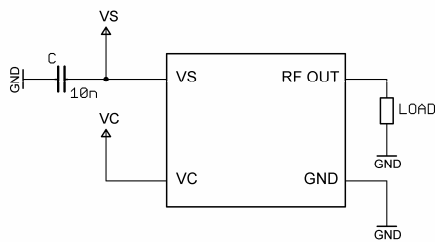
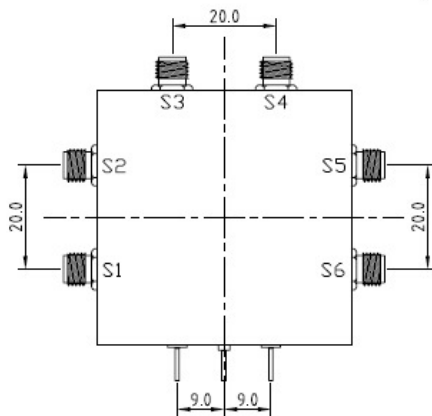
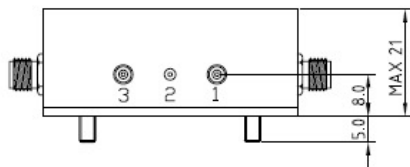
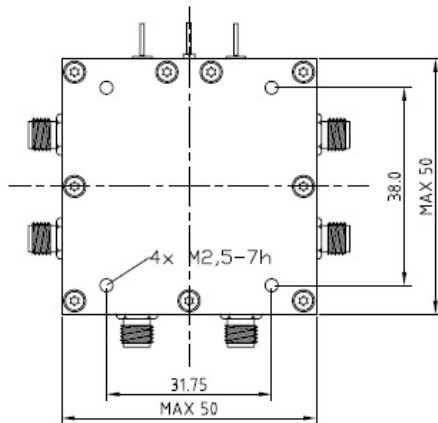
| Model | Option 1 [Output ports] | Option 2 [Stability] | Option 3 [Temperature range] | Revision | Frequency [MHz] |
|------------|-------------------------|----------------------|------------------------------|----------|-----------------|
| AXIOM5050M | 2, 4, 6 | Table 1 | Table 2 | Rev.1 | 100.000 |

Example: AXIOM5050M-6-25-1B_Rev.1 – 100.000 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 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |
| RoHS- Compliant | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | |

Enclosure drawing



* See Application Note AXAN-011

Pin connections:

| Pin # | Symbol | Function |
|----------|----------------|-----------------------|
| 1 | V _s | Supply Voltage |
| 2 | GND | Ground |
| 3 | V _c | Control Voltage (EFC) |
| SMA (6x) | RF OUT | RF Outputs |

| Ports | SMA Connectors * |
|-------|------------------|
| 2 | SMA S3 – S4 |
| 4 | SMA S2 – S5 |
| 6 | SMA S1 – S6 |

*Unused connectors are not present

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 | 20.06.2014 | First issue | HH | HH |