

|                                              |                |           |                  |
|----------------------------------------------|----------------|-----------|------------------|
| <b>Specification</b>                         | <b>AXIOM10</b> | Issue: 04 | Date: 2005-07-15 |
| <b>Oscillator type : OCXO in SMD package</b> |                |           |                  |

| Parameter                                                        | min.                | typ.  | max.  | Unit | Condition                                           |
|------------------------------------------------------------------|---------------------|-------|-------|------|-----------------------------------------------------|
| <b>Frequency range</b>                                           | 10                  |       | 120   | MHz  | Note 2                                              |
| <b>Standard frequencies</b>                                      | 10.0 / 12.8 / 19.44 |       |       | MHz  |                                                     |
| <b>Frequency stability</b>                                       |                     |       |       | ppm  |                                                     |
| Initial tolerance                                                |                     | ± 500 |       | ppb  | @+25°C, V <sub>C</sub> = center                     |
| vs. temperature (steady state)                                   |                     |       | ± 200 | ppb  | Option II = "200"                                   |
|                                                                  |                     |       | ± 100 | ppb  | Option II = "100"                                   |
|                                                                  |                     |       | ± 50  | ppb  | Option II = "50"                                    |
| operating temperature range                                      | -40                 |       | +80   | °C   | Option II = "200"                                   |
|                                                                  | -20                 |       | +70   | °C   | Option II = "100"                                   |
|                                                                  | -10                 |       | +60   | °C   | Option II = "50"                                    |
| vs. supply voltage variation                                     |                     |       | ± 10  | ppb  |                                                     |
| vs. load change                                                  |                     | ± 10  |       | ppb  |                                                     |
| long term (aging) 1 <sup>st</sup> year<br>@ +40°C, after 30 days |                     |       | ± 200 | ppb  |                                                     |
| <b>Frequency adjustment range</b>                                |                     |       |       |      |                                                     |
| Electronic Frequency Control (EFC)                               | ± 2                 |       |       | ppm  |                                                     |
| EFC voltage V <sub>C</sub>                                       | 0.15                | 1.65  | 3.15  | V    | Option I = "33"                                     |
|                                                                  | 0.25                | 2.5   | 4.5   | V    | Option I = "50"                                     |
| EFC slope ( $\Delta f / \Delta V_C$ )                            | positive            |       |       |      |                                                     |
| EFC input impedance                                              | 100                 |       |       | kΩ   |                                                     |
| <b>RF output</b>                                                 |                     |       |       |      |                                                     |
| Signal waveform                                                  | HCMOS               |       |       |      |                                                     |
| Load                                                             | 15                  |       |       | pF   |                                                     |
| Rise & decay time                                                |                     |       | 5     | ns   |                                                     |
| Symmetry (duty cycle)                                            | 40                  |       | 60    | %    | @ V <sub>S</sub> /2                                 |
| Warm-up time                                                     |                     |       | 5     | min  | $\Delta f_{\text{final}}/f_0 < \pm 0.1 \text{ ppm}$ |
| Phase noise<br>@12.8 MHz                                         |                     |       | -95   | dBc  | 10 Hz                                               |
|                                                                  |                     |       | -120  | dBc  | 100 Hz                                              |
|                                                                  |                     |       | -140  | dBc  | 1000 Hz                                             |
|                                                                  |                     |       | -145  | dBc  | 10000 Hz                                            |
| <b>Supply voltage V<sub>S</sub></b>                              | 3.15                | 3.3   | 3.45  | V    | Option I = "33"                                     |
|                                                                  | 4.75                | 5.0   | 5.25  | V    | Option I = "50"                                     |
| <b>Current consumption</b><br>(steady state, @ +25°C)            |                     |       | 300   | mA   | Option I = "33"                                     |
|                                                                  |                     |       | 250   | mA   | Option I = "50"                                     |
| <b>Current consumption</b> (warm-up)                             |                     |       | 800   | mA   | Option I = "33"                                     |
|                                                                  |                     |       | 500   | mA   | Option I = "50"                                     |
| <b>Storage temperature range</b>                                 | -45                 |       | +85   | °C   |                                                     |
| <b>Enclosure (see drawing)</b>                                   | 25.6x22.2x11.5 max. |       |       | mm   | IEC 61837 CO 28                                     |
| <b>Weight</b>                                                    |                     |       | 9     | gram |                                                     |
| <b>Packing</b>                                                   | Bulk, Tape & reel   |       |       |      | IEC 60286-3                                         |
| <b>ESD Sensitivity</b>                                           | 1500                |       |       | V    | HBM as in IEC 61000-4-2                             |

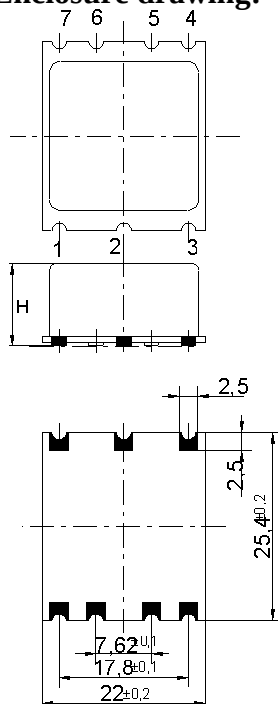
**Notes:**

- Terminology and test conditions are according to IEC standard IEC60679-1, unless otherwise stated
- Not all combinations of options available in the whole frequency range

**Ordering Code:**

| Model (Specification) | Option I | Option II | Frequency [MHz] |
|-----------------------|----------|-----------|-----------------|
| AXIOM10               | 50       | 100       | 10.0            |

## Enclosure drawing:



## Pin connections

| Pin # | Symbol    | Function              |
|-------|-----------|-----------------------|
| 1     | $V_C$     | Control Voltage (EFC) |
| 2     | $V_{REF}$ | Reference Voltage     |
| 3     | $V_S$     | Supply Voltage        |
| 4     | RF OUT    | RF Output             |
| 5     | N.C.      | No Connection         |
| 6     | N.C.      | No Connection         |
| 7     | GND       | Ground                |

## Environmental conditions

| Test                          | IEC 60068 Part ... | IEC 60679-1 clause ... | Test conditions                                                               |
|-------------------------------|--------------------|------------------------|-------------------------------------------------------------------------------|
| Visual inspection, dimensions |                    | 4.3                    | Enclosure styles as in IEC 60679-3 or 61837, if applicable                    |
| Sealing tests (if applicable) | 2-17               | 4.6.2                  | Gross leak: Test Qc, Fine leak: Test Qk                                       |
| Solderability                 | 2-20               | 4.6.3                  | Test Ta (235 ± 5)°C Method 1                                                  |
| Resistance to soldering heat  | 2-58               |                        | Test Tb Method 1A, 5s                                                         |
| Shock*                        | 2-27               | 4.6.8                  | Test Ea, 3 x per axes 100g, 6 ms half-sine pulse                              |
| Bump*                         | 2-29               | 4.6.6                  | Test Eb, 4000 bumps per Axes, 40g, 6 ms                                       |
| Free fall*                    | 2-32               | 4.6.9                  | Test Ed procedure 1, 2 drops from 1m height                                   |
| Vibration, sinusoidal*        | 2-6                | 4.6.7                  | Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g            |
| Rapid change of temperature   | 2-14               | 4.6.5                  | Test Na, 10 cycles at extremes of operating temperature range                 |
| Dry heat                      | 2-2                | 4.6.14                 | Test Ba, 16 h at upper temperature indicated by climatic category             |
| Damp heat, cyclic*            | 2-30               | 4.6.15                 | Test Db variant 1 severity b), 55°C/95% r.H., 6 cycles                        |
| Cold                          | 2-1                | 4.6.16                 | Test Aa, 2 h at lower temperature indicated by climatic category              |
| Climatic sequence*            | 1-7                | 4.6.17                 | Sequence of 4.6.14, 4.6.15 (1 <sup>st</sup> cycle), 4.6.16, 4.6.15 (5 cycles) |
| Damp heat, steady state*      | 2-3                | 4.6.18                 | Test Ca, 56 days                                                              |
| Endurance tests               |                    |                        |                                                                               |
| - ageing                      |                    | 4.7.1                  | 30 days @ 85°C, OCXO @25°C                                                    |
| - extended aging              |                    | 4.7.2                  | 1000h, 2000h, 8000h @85°C                                                     |