

|                      |                |         |                  |
|----------------------|----------------|---------|------------------|
| <b>Specification</b> | <b>AXGT175</b> | Rev.: 2 | Date: 2015-04-07 |
|----------------------|----------------|---------|------------------|

**Oscillator type: Gated Temperature Compensated Crystal SMD Oscillator**

| Parameter                                   | min.                | typ.                 | max. | Unit                       | Condition                        |
|---------------------------------------------|---------------------|----------------------|------|----------------------------|----------------------------------|
| <b>Frequency range</b>                      | 950                 |                      | 1532 | MHz                        |                                  |
| <b>Standard frequencies</b>                 | 1030.000 / 1090.000 |                      |      | MHz                        |                                  |
| <b>Frequency stability</b>                  |                     |                      |      |                            |                                  |
| Initial tolerance at delivery               |                     |                      | ±1   | ppm                        | @ +25°C                          |
| vs. operating temperature range             |                     |                      | ±1   | ppm                        | (Note 2)                         |
| Long term (aging) per year                  |                     |                      | ±2   | ppm                        |                                  |
| <b>Gate function (optional)</b>             | Option 1            |                      |      |                            |                                  |
| Low level input voltage $V_{GL}$            |                     | 0                    | 1.5  | V                          |                                  |
| High level input voltage $V_{GH}$           | 3.5                 | 5.0                  | 5.5  | V                          |                                  |
| Input resistance                            |                     | 10                   |      | kΩ                         |                                  |
| Input capacitance                           |                     |                      | 10   | pF                         |                                  |
| Turn-on time                                |                     | 35                   | 40   | ns                         |                                  |
| Turn-off time                               |                     | 25                   | 30   | ns                         |                                  |
| <b>RF output</b>                            | Option 2            |                      |      |                            |                                  |
| Signal waveform                             | Sine wave           |                      |      |                            |                                  |
| Load $R_L$                                  | 50                  |                      |      | Ω                          |                                  |
| Output level Gate ON                        | +10                 |                      | +26  | dBm                        | @ $V_{GATE} > +3.5$ V            |
| Output level variation                      |                     |                      | ±2   | dB                         |                                  |
| Output level Gate OFF                       |                     | -60                  | -50  | dBc                        | @ $V_{GATE} < +1.5$ V            |
| Harmonics                                   |                     |                      | -30  | dBc                        |                                  |
| Spurious                                    |                     |                      | -80  | dBc                        |                                  |
| Phase noise @ 1030 MHz<br>(Note 3)          |                     | -110<br>-130<br>-150 |      | dBc/Hz<br>dBc/Hz<br>dBc/Hz | @ 10 kHz<br>@ 100 kHz<br>@ 1 MHz |
| <b>Lock Detect Output LD</b> (Note 4)       | 3.0                 |                      |      | V                          | PLL locked                       |
| <b>Supply voltage <math>V_S</math></b>      | 4.75                | 5.0                  | 5.25 | V                          |                                  |
| <b>Current consumption</b> (Note 5)         |                     |                      | 200  | mA                         |                                  |
| <b>Operating temperature range</b> (Note 2) | -40                 |                      | +55  | °C                         |                                  |
| <b>Enclosure (see drawing) (LxWxH)</b>      | 25.4x25.4x8.0 max.  |                      |      | mm                         |                                  |
| <b>Weight</b>                               |                     |                      | 10   | g                          |                                  |
| <b>Packing</b>                              | Palette             |                      |      |                            |                                  |

**Notes:**

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other stability and temperature range on request
3. Please consult factory for phase noise of other frequencies
4. Internal PLL with TCXO reference
5. Current consumption depends on output level

**Absolute Maximum Ratings**

| Parameter               | min. | max.         | Unit | Condition         |
|-------------------------|------|--------------|------|-------------------|
| Supply Voltage $V_S$    | -0.5 | $V_S + 10\%$ | V    | $V_S$ to GND      |
| Gate Voltage $V_{GATE}$ | -0.5 | $V_S + 10\%$ | V    | $V_{GATE}$ to GND |
| Storage Temperature     | -55  | +125         | °C   |                   |

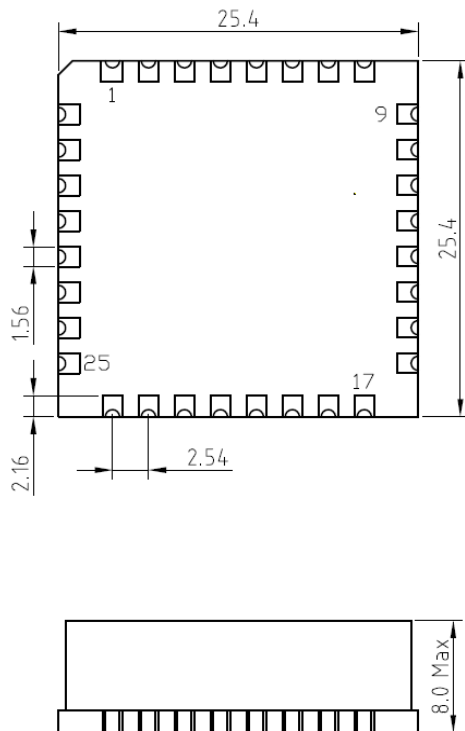
## Ordering Code

| Model   | Option 1<br>[Gate Function]                        | Option 1<br>[Output level in dBm] | Revision | Frequency [MHz] |
|---------|----------------------------------------------------|-----------------------------------|----------|-----------------|
| AXGT175 | G = With Gate function<br>Blank = No Gate function | 12 to 24                          | Rev.2    | 1030.000        |

Example: AXGT175G-24\_Rev.1 – 1030.000 MHz

## Enclosure drawing

- Bottom View -



## Pin connections

| Pin #      | Symbol            | Function       |
|------------|-------------------|----------------|
| 1          | LD                | Lock Detect    |
| 2          | D.N.C.            | Do Not Connect |
| 19         | RF OUT            | RF Output      |
| 22         | V <sub>GATE</sub> | Gate Input     |
| 31,32      | V <sub>S</sub>    | Supply Voltage |
| All others | GND               | Ground, case   |

### 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No |     |               |
| RoHS compliant                | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |     |               |

### Environmental conditions

| Test                                            | IEC<br>60068<br>Part ... | IEC<br>60679-1<br>Clause | MIL-STD-<br>202G<br>Method | MIL-STD-<br>810F<br>Method | MIL-PRF-<br>55310D<br>Clause | Test conditions (IEC)                                                 |
|-------------------------------------------------|--------------------------|--------------------------|----------------------------|----------------------------|------------------------------|-----------------------------------------------------------------------|
| Sealing tests<br>(if applicable)                | 2-17                     | 5.6.2                    | 112E                       |                            | 3.6.1.2                      | Gross leak: Test Qc,<br>Fine leak: Test Qk                            |
| Solderability                                   | 2-20                     | 5.6.3                    | 208H                       |                            | 3.6.52                       | Test Ta Method 1                                                      |
| Resistance to<br>soldering heat                 | 2-58                     |                          | 210F                       |                            | 3.6.48                       | Test Td <sub>1</sub> Method 2<br>Test Td <sub>2</sub> 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,<br>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,<br>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 |                          | 5.7.1<br>5.7.2           | 108A                       |                            | 4.8.35                       | 30 days @ 85°C, OCXO @25°C<br>1000h, 2000h, 8000h @85°C               |

### Revision History

| Rev. | Drawing | Date<br>[dd.mm.yyyy] | Remarks                             | Author | Checked |
|------|---------|----------------------|-------------------------------------|--------|---------|
| 1    | D0      | 03.09.2014           | First issue                         | HH     | HH      |
| 1    | D1      | 07.04.2015           | Pin connection for Pin 2 added      | HH     | ME      |
| 1    | D2      | 27.05.2015           | Dimensions of Pins in drawing added | ME     | BN      |
| 2    | D0      | 15.07.2015           | typical PN values added             | ME     | HH      |