

## OXL6025A-D3-5-10.000-5

### FEATURES

**Very low power consumption (0.15W at +25°C)**

Very fast warming-up (to 15s)

Low phase noise level (-165dBc/Hz floor)

Low profile (12mm height)



### ELECTRICAL SPECIFICATIONS

| PARAMETER                                  | SYMBOL                         | CONDITION                                                                                                            | VALUE  |        |                           | UNIT       |
|--------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------|--------|--------|---------------------------|------------|
|                                            |                                |                                                                                                                      | Min.   | Typ.   | Max.                      |            |
| Nominal Frequency                          | $f_0$                          |                                                                                                                      | 10.000 |        |                           | MHz        |
| Supply Voltage                             | $V_s$                          | $V_s \pm 5\%$ @ 25°C                                                                                                 | 4.75   | 5.0    | 5.25                      | V          |
| <b>Power Consumption</b>                   | $P_s$                          | <b>Steady state, @ 25°C</b>                                                                                          |        |        | <b>0.15</b>               | <b>W</b>   |
|                                            | $P_{s,w}$                      | <b>During warm-up, @ 25°C</b>                                                                                        |        |        | <b>0.7</b>                | <b>W</b>   |
| Warm-up Time                               | $t_w$                          | $V_s$ , nom., $T_a = +25^\circ\text{C}$ within $\pm 0.1\text{ppm}$ of final frequency with reference after 15min on  | 15     | 60     |                           | s          |
| Frequency Calibration                      | $\Delta f/f_0$                 | $V_c = 1.65\text{V}/@25^\circ\text{C}$ , after 15mins power on ref. to nominal frequency and within 90 days storage. |        |        | $\pm 0.2$                 | ppm        |
| <b>Frequency Stability vs. Temperature</b> | $\Delta f/f_0 (T_a)$           | <b><math>T_a = -40^\circ\text{C} \dots +85^\circ\text{C}</math>, measurement referenced to 25°C</b>                  |        |        | <b><math>\pm 5</math></b> | <b>ppb</b> |
| Frequency Stability vs. Supply Voltage     | $\Delta f/f_0 (\Delta V_{CC})$ | $T_a = 25^\circ\text{C}$ , $V_s \pm 5\%$ , load=15pF                                                                 |        |        | $\pm 2$                   | ppb        |
| Frequency Stability vs. Load Change        | $\Delta f/f_0 (\Delta I)$      | per %load change, max.: 5%                                                                                           |        |        | $\pm 2$                   | ppb        |
| Allan variance                             |                                | 1s                                                                                                                   |        | 20E-12 |                           |            |
| Aging, after 30 days of operation          | $\Delta f/\Delta t_d$          | Daily                                                                                                                | -0.2   |        | +0.2                      | ppb        |
|                                            | $\Delta f/\Delta t_y$          | First year                                                                                                           | -20    |        | +20                       | ppb        |
| Operating Temperature                      | $T_a$                          |                                                                                                                      | -40    |        | +85                       | °C         |
| Storage Temperature                        | $T_{(stg)}$                    | Absolute max                                                                                                         | -60    |        | +90                       | °C         |

**PHASE NOISE**

| PARAMETER      | SYMBOL                   | CONDITION | VALUE |      |      | UNIT   |
|----------------|--------------------------|-----------|-------|------|------|--------|
|                |                          |           | Min.  | Typ. | Max. |        |
| @1 Hz Offset   | $\mathcal{E} (\Delta f)$ |           | -100  | -90  |      | dBc/Hz |
| @10 Hz Offset  | $\mathcal{E} (\Delta f)$ |           | -130  | -125 |      | dBc/Hz |
| @100 Hz Offset | $\mathcal{E} (\Delta f)$ |           | -148  | -145 |      | dBc/Hz |
| @1 kHz Offset  | $\mathcal{E} (\Delta f)$ |           | -158  | -155 |      | dBc/Hz |
| @10 kHz Offset | $\mathcal{E} (\Delta f)$ |           | -165  | -165 |      | dBc/Hz |

**VOLTAGE CONTROL CHARACTERISTICS**

| PARAMETER              | SYMBOL           | CONDITION | VALUE |      |      | UNIT |
|------------------------|------------------|-----------|-------|------|------|------|
|                        |                  |           | Min.  | Typ. | Max. |      |
| Control Voltage Range  | V <sub>c</sub>   |           | 0     |      | 4.2  | V    |
| Frequency tuning range |                  |           | ±0.5  | ±1   |      | ppm  |
| Slope                  |                  | Positive  |       |      |      |      |
| Linearity              |                  |           | -10   |      | +10  | %    |
| Reference voltage      | V <sub>ref</sub> |           | 4.1   | 4.2  | 4.3  | V    |

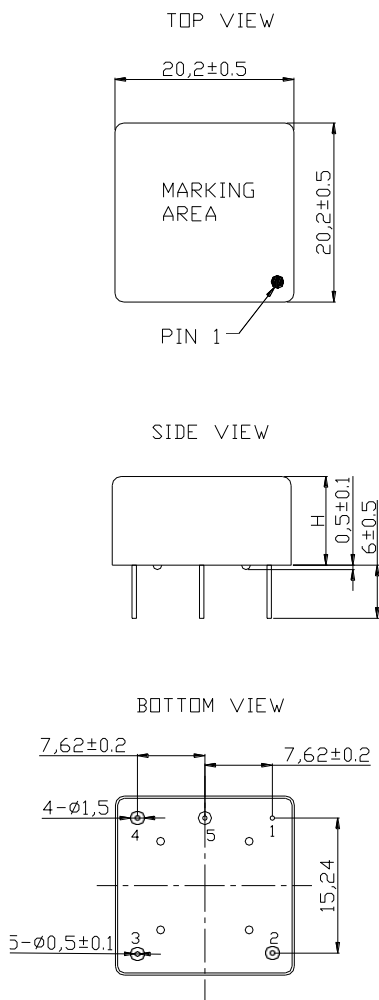
**ENVIRONMENTAL MECHANICAL CONDITIONS**

|                           |                                                                                                                                                                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage temperature range | -55°C to +105°C                                                                                                                                                                                                                   |
| Drop Test                 | The test shall be carried out as the provisions of the IEC60028-2-32 test Ed. 10cm height, 3 times on hard board with thickness of 3cm                                                                                            |
| Bumping Test              | Device are bumped to three mutually perpendicular axes at peak acceleration of 400m/s <sup>2</sup> , each 4000±10times, 6ms pulse duration time                                                                                   |
| Vibration Test            | Frequency range: 1Hz-4Hz-100Hz-200Hz<br>Acceleration: 0.0001g <sup>2</sup> /Hz-0.01g <sup>2</sup> /Hz-0.01g <sup>2</sup> /Hz-0.001g <sup>2</sup> /Hz<br>Grms=1.15g<br>Sweep time: 30 minutes (perpendicular axes each sweep time) |
| Mechanical Shock          | 100g, 6mS duration, 1/2 sine wave, 3 shocks each direction along 3 mutually perpendicular planes.                                                                                                                                 |
| Thermal shock             | 0.5h@-40°C , 0.5h@+85°C , Note: the changing time < 30 seconds, cycling for 100 times                                                                                                                                             |

**CMOS OUTPUT CHARACTERISTICS**

| PARAMETER      | SYMBOL          | CONDITION                     | VALUE |         |      | UNIT |
|----------------|-----------------|-------------------------------|-------|---------|------|------|
|                |                 |                               | Min.  | Typ.    | Max. |      |
| Output Levels  | $V_{OH}/V_{OL}$ | $V_{CC} = 5.0V$ , load = 15pF |       | 3.8/0.4 |      | V    |
| Duty Cycle     | DC              | load = 15pF                   |       | 45/55   |      | %    |
| Rise/Fall Time | $t_r/t_f$       | 10% ~ 90% $V_{out}$           |       |         | 10   | ns   |
| Load           |                 |                               |       | 15      |      | pF   |

**MECHANICAL DIMENSIONS AND PIN FUNCTIONING**



Height max "H" = 12mm

**OXL6025A-D3-5-10.000-5**

| PIN | SYMBOL | FUNCTION          |
|-----|--------|-------------------|
| 1   | Vc     | Ground            |
| 2   | N/C    | RF Output         |
| 3   | GND    | Supply Voltage    |
| 4   | OUTPUT | Voltage Control   |
| 5   | N/C    | Reference Voltage |

March 2017

Raltron Electronics/RAMI Technology USA, LLC, including its affiliates, employees, agents and other persons acting on its behalf (collectively Raltron/RAMI Tech), disclaim any and all liability for any errors or inaccuracies contained in this data sheet. While Raltron/RAMI Tech has made every reasonable effort to ensure the accuracy of all product information, specifications and data contained herein, Raltron/RAMI Tech does not guarantee that the information is accurate, reliable or current. The product information is provided for reference purposes only and is subject to change, correction or revision, at any time without notice. Raltron/RAMI Tech does not assume any liability arising out of an application or use of any product described herein and disclaims any warranties expressed or implied. The user of products in such applications shall assume all risks of such use and will agree to hold Raltron/RAMI Tech, harmless against all damages.