

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 |
| Power Consumption | P_s | Steady state, @ 25°C | | | 0.15 | W |
| | $P_{s,w}$ | During warm-up, @ 25°C | | | 0.7 | W |
| Warm-up Time | t_w | V_s , nom., $T_a = +25^\circ\text{C}$ within ± 0.1 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. | | | ± 0.2 | ppm |
| Frequency Stability vs. Temperature | $\Delta f/f_0 (T_a)$ | $T_a = -40^\circ\text{C} \dots +85^\circ\text{C}$, measurement referenced to 25°C | | | ± 5 | ppb |
| Frequency Stability vs. Supply Voltage | $\Delta f/f_0 (\Delta V_{CC})$ | $T_a = 25^\circ\text{C}$, $V_s \pm 5\%$, load = 15pF | | | ± 2 | ppb |
| Frequency Stability vs. Load Change | $\Delta f/f_0 (\Delta I)$ | per %load change, max.: 5% | | | ± 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 | ϵ (Δf) | | -100 | -90 | | dBc/Hz |
| @10 Hz Offset | ϵ (Δf) | | -130 | -125 | | dBc/Hz |
| @100 Hz Offset | ϵ (Δf) | | -148 | -145 | | dBc/Hz |
| @1 kHz Offset | ϵ (Δf) | | -158 | -155 | | dBc/Hz |
| @10 kHz Offset | ϵ (Δf) | | -165 | -165 | | dBc/Hz |

VOLTAGE CONTROL CHARACTERISTICS

| PARAMETER | SYMBOL | CONDITION | VALUE | | | UNIT |
|------------------------|------------------|-----------|----------|------|------|------|
| | | | Min. | Typ. | Max. | |
| Control Voltage Range | V _c | | 0 | | 4.2 | V |
| Frequency tuning range | | | ±0.5 | ±1 | | ppm |
| Slope | | | Positive | | | |
| Linearity | | | -10 | | +10 | % |
| Reference voltage | V _{ref} | | 4.1 | 4.2 | 4.3 | V |

ENVIRONMENTAL MECHANICAL CONDITIONS

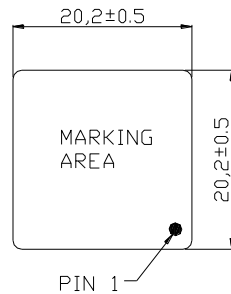
| | |
|---------------------------|---|
| Storage temperature range | -55°C to +105°C |
| Drop Test | The test shall be carried out as the provisions of the IEC60028-2-32 test Ed. 10cm height, 3 times on hard board with thickness of 3cm |
| Bumping Test | Device are bumped to three mutually perpendicular axes at peak acceleration of 400m/s ² , each 4000±10times, 6ms pulse duration time |
| Vibration Test | Frequency range: 1Hz-4Hz-100Hz-200Hz Acceleration: 0.0001g ² /Hz-0.01g ² /Hz-0.01g ² /Hz-0.001g ² /Hz Grms=1.15g 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

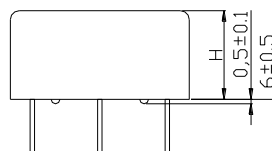
| PARAMETER | SYMBOL | CONDITION | VALUE | | | UNIT |
|----------------|-----------------|-------------------------------|-------|---------|------|------|
| | | | Min. | Typ. | Max. | |
| Output Levels | V_{OH}/V_{OL} | $V_{CC} = 5.0V$, load = 15pF | | 3.8/0.4 | | V |
| Duty Cycle | DC | load = 15pF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

MECHANICAL DIMENSIONS AND PIN FUNCTIONING

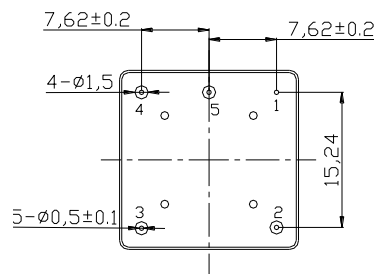
TOP VIEW



SIDE VIEW



BOTTOM VIEW



Height max "H" = 12mm

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| 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