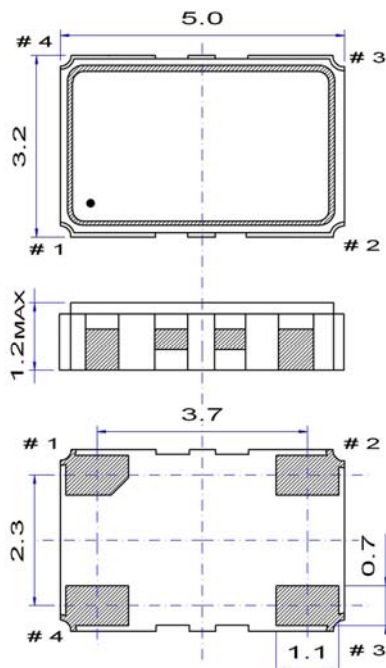


## Specifications

<b>Nominal Frequency Fo</b>	<b>24.0000 MHz</b>	
<b>Frequency stability:</b>		
vs. operating temperature range	≤ ±0.5 ppm	over -40 ~ +85°C
vs. supply voltage changes	≤ ±0.05 ppm	±5 %
vs. load changes	≤ ±0.05 ppm	±5 %
vs. aging after the pre aging (1)	≤ ±0.8 ppm	1st year
vs. aging	< ±4.0 ppm	within 10 years
Frequency tolerance ex works	≤ ±0.3 ppm	@ +25°C
Supply voltage	+3.3 V	±5 %
Current consumption	1.5 mA	Max.
Output waveform	Clipped sine wave	
Output level	> 0.8 Vp-p	
Output Load	10 kΩ // 10 pF	
Phase noise @ 24 MHz carrier frequency	-105 dBc/Hz	@ 100 Hz
	-130 dBc/Hz	@ 1 kHz
	-145 dBc/Hz	@ 10 kHz
	-152 dBc/Hz	@ 100 kHz
Operating temperature range	-30 ~ + 85 °C	
Operable temperature range	-40 ~ + 85 °C	
Storage temperature range	-55 ~ + 125 °C	
Packaging unit	tape & reel	500 or 1'000 pcs
	tape only	< 500 pcs
(1) Pre aging	Stock @ +125°C over 60 days	

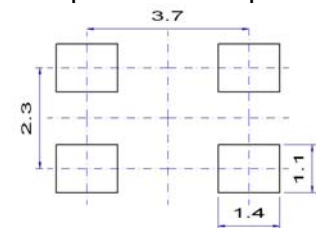
## Mechanical Drawing and PIN Function



### Pin function

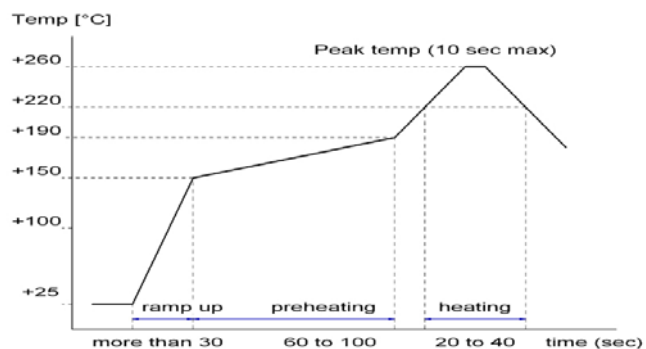
- # 1 GND
- # 2 GND
- # 3 OUTPUT
- # 4 Vdc

### Example for solder pattern



**Do not design any conductive path between the pattern**

### Example for IR reflow soldering temperature



## Test Data

### 1. Electrical parameter, measured @ +25°C

NO	FREQUENCY @ 25°C (Hz)	OFFSET 0.3 -0.3 (PPM)	ICC (mA)	FREQ_V_H 0.2 -0.2 (V)	FREQ_V_L 0.2 -0.2 (V)	START_T 1.6 (mS)	P_P 0.8 (V)
N81268	2400001.20	0.05	1.04	0.01	0.01	0.10	1.11
N81269	23999996.40	-0.15	1.10	0.03	0.03	0.10	1.10
N81270	23999998.30	-0.07	1.10	0.02	0.02	0.10	1.10
N81271	23999999.00	-0.04	1.15	0.02	0.02	0.10	1.11
N81272	24000002.00	0.09	1.10	0.02	0.02	0.10	1.11
N81273	24000001.80	0.07	1.15	0.02	0.02	0.10	1.11
N81274	23999997.70	-0.09	1.04	0.02	0.02	0.10	1.17
N81275	24000002.20	0.09	1.10	0.02	0.02	0.10	1.11
N81276	23999996.30	-0.15	1.15	0.02	0.02	0.10	1.18
N81277	24000000.70	0.03	1.04	0.02	0.02	0.10	1.17

### 2. Frequency deviation vs. temperature, measured over -30 up to +85°C

SER. NO	-40°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	25°C	30°C	40°C	50°C	60°C	70°C	80°C	85°C
N81268	0.3	0.2	0.0	0.1	0.1	0.1	0.0	0.0	-0.0	0.0	0.1	0.1	0.0	0.1	0.4
N81269	0.1	0.1	0.0	0.1	-0.0	0.1	0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0	0.1	0.1
N81270	0.1	0.2	0.1	0.4	0.3	0.2	0.1	0.0	-0.1	-0.1	-0.2	-0.3	-0.3	-0.2	-0.1
N81271	0.4	0.3	0.1	0.0	-0.1	0.1	0.0	0.0	-0.0	0.0	0.0	0.0	-0.0	-0.3	-0.3
N81272	0.6	0.3	-0.1	-0.1	-0.2	-0.1	-0.0	0.0	-0.0	0.0	0.0	-0.0	-0.1	-0.1	-0.1
N81273	0.4	0.1	-0.1	0.1	-0.1	-0.0	0.0	0.0	-0.0	0.0	0.0	-0.1	-0.2	-0.1	-0.1
N81274	0.3	0.2	-0.0	0.1	-0.0	-0.0	-0.0	0.0	-0.0	0.0	0.1	0.1	-0.0	-0.1	-0.0
N81275	0.4	0.1	-0.3	-0.3	-0.1	-0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.3	-0.2	-0.1	0.0
N81276	0.3	0.1	0.0	0.1	-0.0	0.0	0.0	0.0	-0.0	0.0	0.1	0.0	0.0	0.1	0.1
N81277	-0.0	-0.1	-0.2	-0.1	-0.2	-0.1	-0.0	0.0	0.0	0.2	0.4	0.3	0.1	-0.0	-0.0

