LO208 Series

Ultra Low Power EMI Reduction Oscillator

Features

- FCC approved EMI attenuation
- Proprietary Low EMI Phase Modulated SaΦic™ Oscillator
- Modulation Output Clock Enable/Disable Function
- RoHS compliant & Pb free
- AEC-Q100 compliant (option)
- Frequency range 20MHz ~ 40MHz
- Supply voltage 1.62V ~ 3.63V
- CMOS output
- Operating temperature -40~125ºC
- SMD seam sealing ceramic package 2.0mm x 1.6mm

Electrical Specifications

Item	Specification
Frequency	20MHz ~ 40MHz
Supply Voltage (VDD)	1.8V ~ 3.3V [1], ±10%
Output Type	CMOS
Output Load	15 pF
Oscillation Mode	Fundamental
Frequency Stability	±50 ppm [1] [2] [3]
Operation Temperature Range	-40ºC ~ 125ºC [1]
Storage Temperature Range	-55ºC ~ 125ºC
Output Voltage Low (V_{OL}) @ VDD = 3.3V, I_{OL} = 12mA @ VDD = 1.8V, I_{OL} = 4mA	0.2VDD Max.
Output Voltage High (V_{OH}) @ VDD = 3.3V, I_{OH} = -12mA @ VDD = 1.8V, I_{OH} = -4mA	0.8VDD Min.
Rise(Tr) / Fall(Tf) Time [4]	6 ns Max.
Dynamic Supply Current [5]	10 mA Max.
Duty Cycle [6]	45% ~ 55%
Start-Up Time	1 ms Max.
Phase Jitter (12kHz~5MHz)	1 ps Max. [3]
Aging (at 25ºC)	±3 ppm/year Max.
Modulation Output Clock Mode	Pin 1 selectable

[1] Ordering options

[2] Inclusive of frequency tolerance at 25°C, variations over operating temperature, supply voltage, load and 1st year aging at 25°C.

[3] Modulation output clock mode is disabled.

[4] Tr measure between 10% to 90%, Tf measure between 90% to 10% at 15pF load and V_{DD} 1.8V~3.3V

[5] Measure at 24MHz, V_{DD} 3.3V

[6] Measure at V_{DD} /2

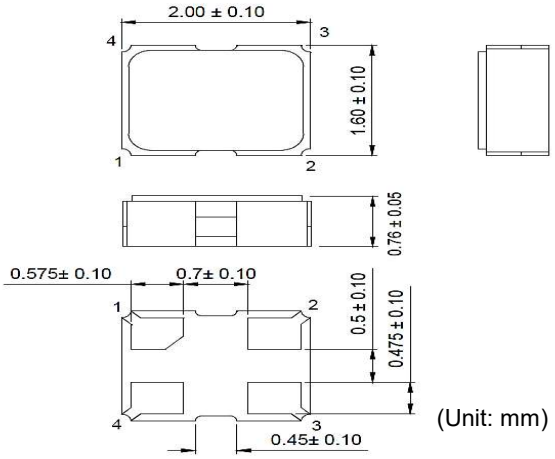
Modulation Output Deviation [7], [8]

Frequency (MHz)	Deviation range (%) @25ºC		
	VDD 1.8V	VDD 2.5V	VDD 3.3V
24	± 0.11	± 0.08	± 0.07
25	± 0.11	± 0.08	± 0.07
27	± 0.12	± 0.09	± 0.08
37.125	± 0.13	± 0.10	± 0.08

[7] The deviation range can vary by ±20% over voltage and temperature.

[8] Modulation output mode is enabled, contact us for available frequencies and deviation range.

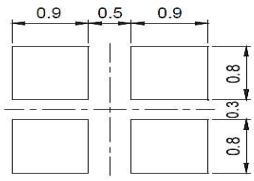
Dimensions



Pad Function

1 EN
2 GND
3 OUTPUT
4 VDD

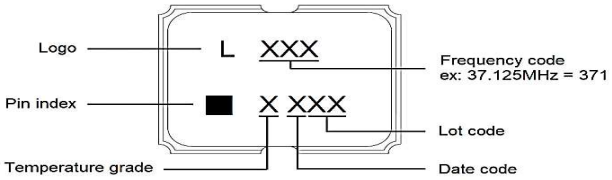
Suggested Layout



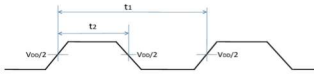
Pin Definition

Pin#	Symbol	Functionality
1	EN	Modulation Output Clock Mode Enable Pin H (Logic "1") : Enable L (Logic "0") : High Impedance Internal pull-high resistor
2	GND	System ground reference
3	OUTPUT	Oscillator output
4	VDD	System power supply

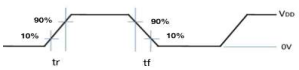
Marking



Duty Cycle Timing



Output Rise/Fall Timing



Temperature grade	Temperature range	Frequency stability (ppm)
I	-40ºC ~ 85ºC	±30
E	-40ºC ~ 105ºC	±50 / ±60
A	-40ºC ~ 125ºC	±50 / ±100

Ordering Information

LO208 A - 24.576M - 50 - C

Product series

Operating temperature range

I : -40~85˚C

E : -40~105˚C

A : -40~125˚C

Frequency in Hz

Frequency stability

30 : +/-30ppm

50 : +/-50ppm

60 : +/-60ppm

100 : +/-100ppm

Supply voltage

A : 3.3V

B : 2.5V

C : 1.8V

D : 2.8V