

SPECIFICATION

CRYSTAL OSCILLATOR
PART NUMBER: ON-238
VCTCXO

RoHS

01/22/2021 – Revised frequency control range.

01/26/2021 – Revised to add table that list the PN dash reference for a specific frequency / logic.

03/16/2021 – Revised to add further customer specified fields for clarity.

07/01/2021 – Revised spec to reflect as built specs, added test circuit.

07/12/2021 – Removed control voltage polarity, due to conflict of control voltage range.

02/10/2022 – Added ON-238-2

ISSUED / REVISION	ENGINEER APPROVED	DOCUMENT CHECKED	DRAFTSMAN
12/23/2020 ^(ASM)	12/23/2020 ^(TG)		
01/22/2021 ^(ASM)	01/22/2021 ^(TG)		
01/26/2021 ^(ASM)	01/26/2021 ^(TG)		
03/16/2021 ^(ASM)	03/16/2021 ^(TG)		
07/01/2021 ^(ASM)	07/01/2021 ^(TG)		
07/12/2021 ^(ASM)	07/12/2021 ^(TG)		
02/10/2022 ^(ASM)	02/10/2022 ^(TG)		

FILTRONETICS Inc

1. Part Number: ON-238**2. Electrical Specifications:**

Filter Type	Crystal Oscillator					
Frequency	DASH	Fo	Supply Voltage	Logic	Frequency Stability	Control Voltage
	1	16 MHz	5V	Clipped Sine	± 2.5 ppm	2.5V
	**2	16 MHz	5V	Clipped Sine	**	2.5V
	3					
	4					
	5					

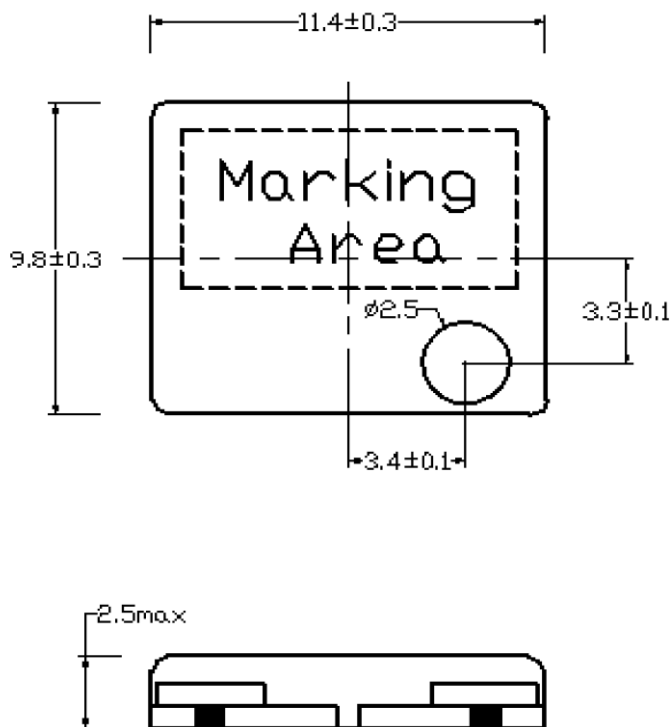
Nominal Frequency Range *		10.0 – 50.0 MHz	
Supply Voltage *		3.3 or 5.0 Vdc ± 5%	
Supply Current		25mA Max	3mA Max
Output Characteristics	Output Waveform *	CMOS	Clipped Sine
	Output Level	CMOS	0.8Vp-p
	Duty Cycle	50% ± 10%	-
	Load	15 pF	10k Ω // 10 pF
Initial Frequency Tolerance	Ref. at +25°C±2°C	±0.5 ppm Max	
Frequency Stability Over Operating Temperature*	0 – 50°C	± 0.5 ppm	
	-10 – 60°C	± 1.0 ppm	
	-20 – 70°C	± 2.0 ppm	
	-30 – 75°C	± 2.5 ppm	
	-40 – 85°C	± 5.0 ppm	
Frequency Stability Over Operating Temperature	vs. Aging	± 1.0 ppm / year	
	vs. Supply Voltage	± 0.3 ppm / Vdc ± 5%	
	vs. Output Load	± 0.2 ppm / Load ± 10%	
Frequency Control Range		± 5 ppm to ± 25 ppm	
Control Voltage Range *		1.65V ± 1.5V or 2.5V ± 2.0V	
Internal Trimmer		Addition ± 3 ppm Min.	
Input Impedance		100 kΩ Min.	
Storage Temperature		-40°C to +85°C	

*** Customer to specify.**

** ON-238-2: Frequency Control Range: ± 25ppm min

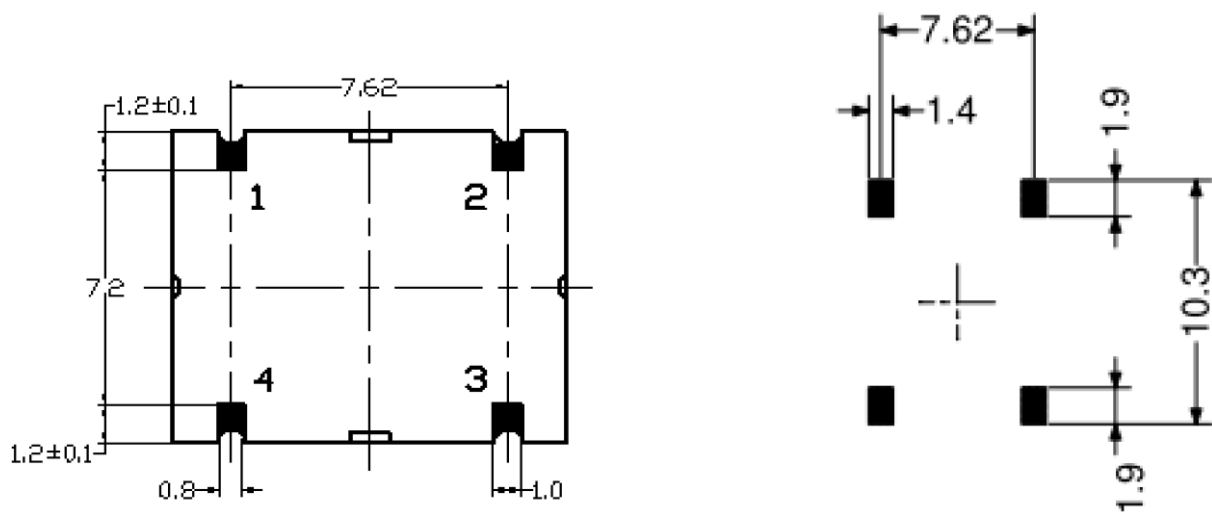
Temperature performance not guaranteed with extended frequency control range of ± 25 ppm min

3. Mechanical Package:



Pin	Connection
#1	VC
#2	GND
#3	OUT
#4	+Vdc

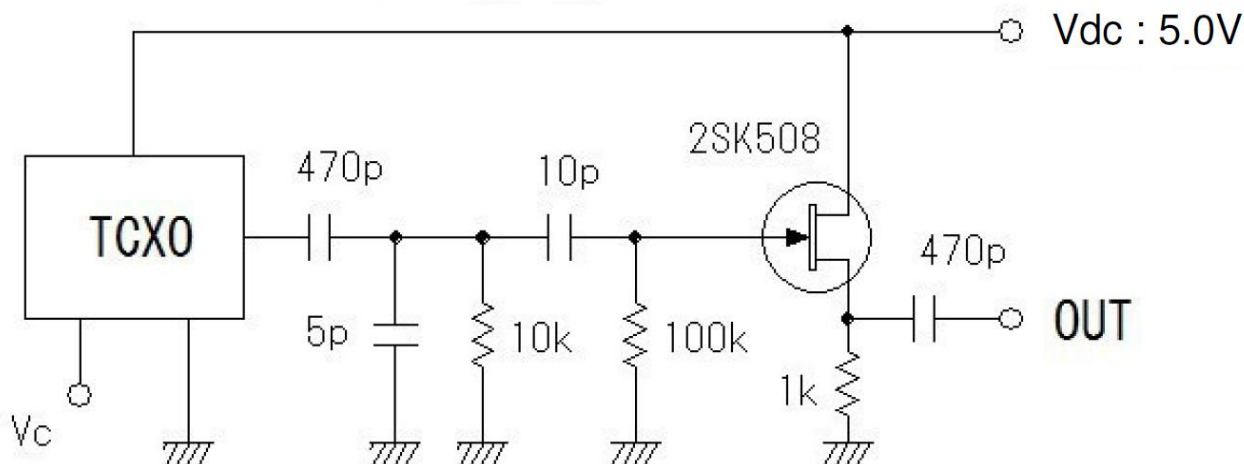
Land Pattern



(Unit : mm)

Marking:
 Filtro
 ON-238-#
 Date code (YYWW)

4. Test Circuit:



5. Environmental Test:

Electrical performance shall apply the specification under test condition.

(1) Vibration (Sine wave)

- a. 10Hz~26Hz: 1.5mm, 26Hz~500Hz: 2G, Sweep time: 20min
- b. Add each 2 hours for X/Y/Z.

(2) Drop

- a. DUT fixed on the surface of 100g cube.
- b. Drop 3cycles (1cycle: X/Y/Z.) at height / 120cm on 3cm thickness hard wood.

(3) Humidity

- a. The crystal shall leave 48 hours into 60°C/ 95%
- b. Then DUT shall leave 24 hours on standard atmospheric condition.

6. Soldering Condition:

Hand soldering: Temperature shall keep under 360°Cand maximum 6 seconds.

Dip soldering: Temperature shall keep under 260°Cand maximum 10seconds.

Fig 1 . Temperature profile of Infrared

