



# QEN07



SMD 3.2x2.5 XO – Communications Equipment Application  
*Specification (Rev-C)*

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## SMD 3.2x2.5 XO – Communications Equipment Application Specification (rev-C)

April 21<sup>st</sup>, 2021

### Electrical Characteristics

Electrical Parameters		Unit	Minimum	Typical	Maximum	Test conditions
Frequency range (see note 1)		MHz	1		125	
Output logic		HCMOS / TTL Output				
Operating temperature range (see table 1)		°C		-10 to +70	-40 to +85	Refer to Ordering Information
Storage temperature range		°C	-55		+125	
Power supply voltage (Vcc)		V	5.0V±10% / 3.3V±10% / 2.5V±10% / 1.8V±10%			Refer to Ordering Information
Frequency Stability (see note 2)		± ppm	±25	±50	±100	Refer to Ordering Information
Aging (First Year)		± ppm			2	Ref at 25°C
Input current		mA	See table 2			
Output	low level V <sub>OL</sub>	V			10% V <sub>CC</sub>	
	High level V <sub>OH</sub>	V	90% V <sub>CC</sub>			
Output load		pF			15	
Duty cycle (see note 3)		%		40/60		Refer to Ordering Information
Rise & Fall time		ns			7	From 10% V <sub>CC</sub> to 90% V <sub>CC</sub>
Start-up time		ms			10	

**Note 1:** For 5V version, maximum frequency is 54MHz only.

**Note 2:** Include 25°C tolerance, operating temperature range, input voltage change, load change, first year aging, shock and vibration.

**Note 3:** Duty cycle 45/55% is available on option.

	± 25ppm	± 50ppm	± 100ppm
-10 to +70°C	C	B	A
- 40 to +85°C	G	F	D

Frequency range (MHz)	Vcc=5.0V	Vcc=3.3V	Vcc=2.5V	Vcc=1.8V
	Cl=15pF	Cl=15pF	Cl=15pF	Cl=15pF
1.000 to 9.999	15 mA	8 mA	7 mA	6 mA
10.00 to 34.999	20 mA	10 mA	8 mA	7 mA
35.00 to 49.999	35 mA	25 mA	20 mA	15 mA
50.00 to 54.00	40 mA	35 mA	30 mA	25 mA

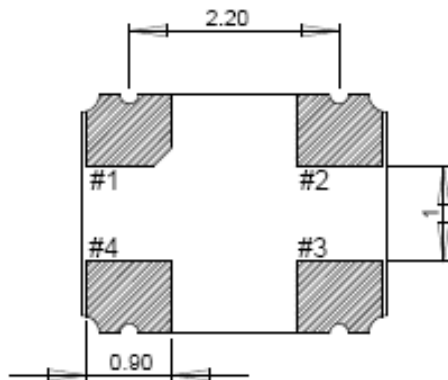
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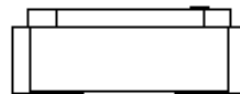
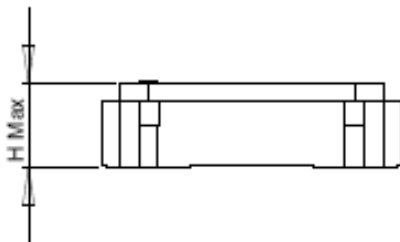
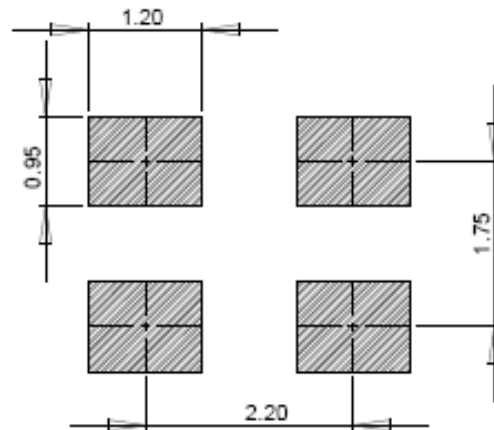
April 21<sup>st</sup>, 2021

### ▣ Mechanical Characteristics

#### BOTTOM VIEW

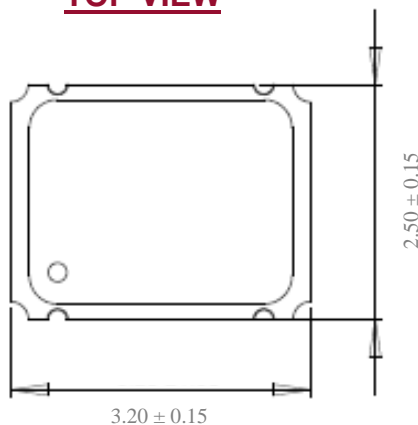


#### SUGGESTED PAD



**Hmax** = 1.2 mm

#### TOP VIEW



Pin connections	
#1	Tri state
#2	Ground
#3	Output
#4	+Vcc

Tri state function	
Pin #1	Output (Pin #3)
Open	Active
"1"	Active
"0"	High Z

Note: 0.01µF bypass capacitor should be placed between Vcc (Pin 4) and GND (Pin 2) to minimize power supply line noise.

Marking	
Line 1	Rakon code : 1xxxxx
Line 2	Date code : YYWW – Manuf code

Example for QEN07ADA / 26.000 MHz

- ⇒ Line 1 : 104142
- ⇒ Line 2 : 2116-G

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## SMD 3.2x2.5 XO – Communications Equipment Application

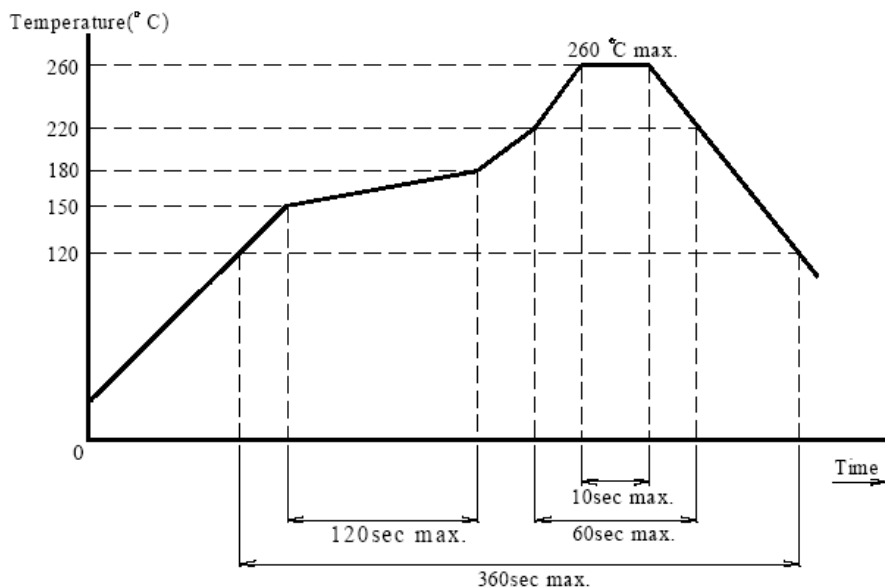
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### Ordering Information

Part numbering system					
QEN07	B	D	A	R	50.000MHZ
Package type	Temperature Stability	Supply Voltage	Output	Output Symmetry Option	Nominal Frequency (MHz)
<b>SMD Package</b> QEN07 : SMD 3.2x2.5	A : ± 100ppm vs -10 to +70°C B : ± 50ppm vs -10 to +70°C C : ± 25ppm vs -10 to +70°C D : ± 100ppm vs -40 to +85°C F : ± 50ppm vs -40 to +85°C G : ± 25ppm vs -40 to +85°C	A : +5.0V D : +3.3V M : +2.5V N : +1.8V	A : HCMOS 15pF	Blank : 40/60% R : 45/55%	Please enter the nominal frequency

### Suggested Reflow Soldering Profile

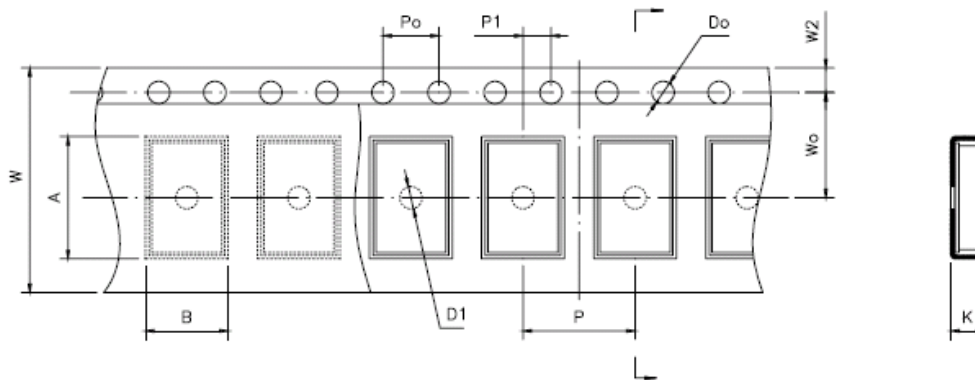


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## Tape Drawing

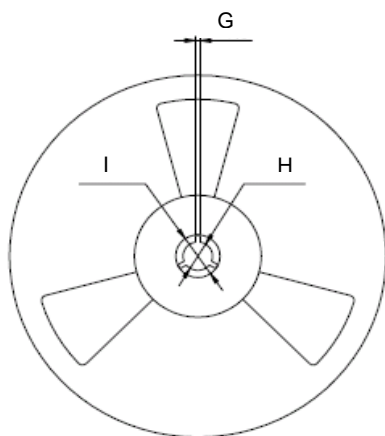


Item	Code	Dimension	Tolerance
Pitch of components	P	4.0	± 0.1
Pitch of sprocket hole	Po	4.0	± 0.1
Width of carrier tape	W	8.0	± 0.3
Width of adhesive tape	W0	3.5	± 0.1
Height of component hole	A	3.5	± 0.1
Diameter of sprocket hole	Do	∅ 1.5	± 0.1
Total of tape thickness	K	1.3	± 0.1

## Reel Drawing

Multiple : 3Kpcs per Reel

Unit : mm



Code	Dimension	Tolerance
G	2.5	± 0.1
H	∅ 13.5	± 0.1
I	∅ 21.6	± 0.1
J	60	± 0.1
K	178	± 0.1
L	9.5	± 0.1
M	1.6	± 0.1

