

QEN101

SMD 7x5 XO – Communications Equipment Application
Specification (Rev-H)

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June 06th, 2016

Electrical Characteristics

Electrical Parameters		Unit	Minimum	Typical	Maximum	Test conditions
Frequency range		MHz	1		133	
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 1)		± 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 _{OL}	V			10% V _{CC}	
	High level V _{OH}	V	90% V _{CC}			
Output load (see note 2)		pF		15	50	Refer to Ordering Information
Duty cycle (see note 3)		%		45/55		
Rise & Fall time		ns	See table 3			
Start-up time		ms			10	

Note 1: Include 25°C tolerance, operating temperature range, input voltage change, load change, first year aging, shock and vibration.

Note 2: HCMOS load 50pF or TTL load 50 LS-TTL is only available with 5.0V version.

Note 3: For frequency upper than 50MHz, in 3.3V, 2.5V & 1.8V version, the duty cycle is 40/60%

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

Frequency range (MHz)	Vcc=5V	Vcc=3.3V	Vcc=2.5V	Vcc=1.8V
	Cl=15 pF	Cl=15pF	Cl=15pF	Cl=15pF
1.000 to 9.999	15 mA	8 mA	7 mA	6 mA
10.00 to 34.99	20 mA	10 mA	8 mA	7 mA
35.00 to 49.99	35 mA	25 mA	20 mA	15 mA
50.00 to 133	40 mA	35 mA	30 mA	25 mA

Conditions	Vcc=5V	Vcc=3.3V	Vcc=2.5V	Vcc=1.8V
10% V _{CC} - 90%V _{CC}	6 ns	6 ns	7 ns	8 ns
90% V _{CC} - 10%V _{CC}	6 ns	6 ns	7 ns	8 ns

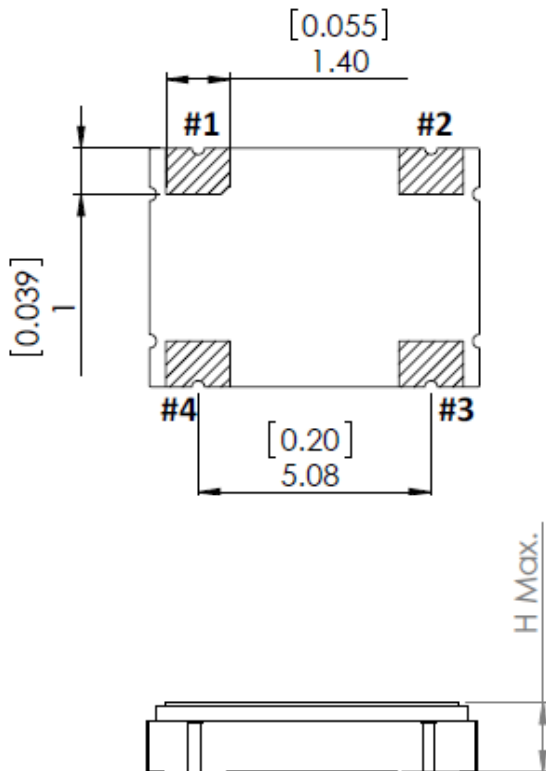
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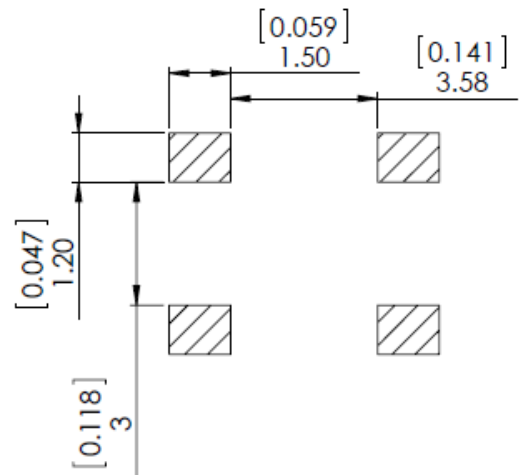
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▣ Mechanical Characteristics

BOTTOM VIEW



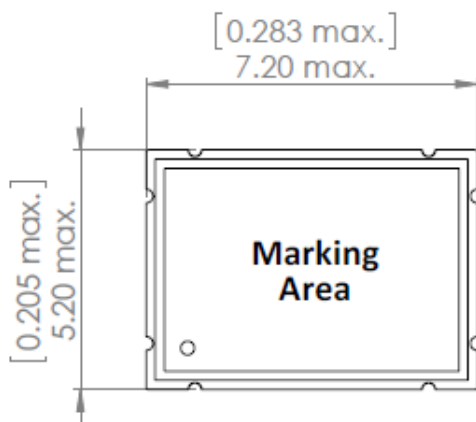
SUGGESTED PAD



Hmax = 1.4 ± 0.1 mm

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



Marking	
Line 1	Manufacturing code + AO + stability/supply voltage/output code
Line 2	Frequency in MHz (6 digits)

Example for QEN101BDA / 50MHz

- ⇒ Line 1 : GAOBDA
- ⇒ Line 2 : 50.000

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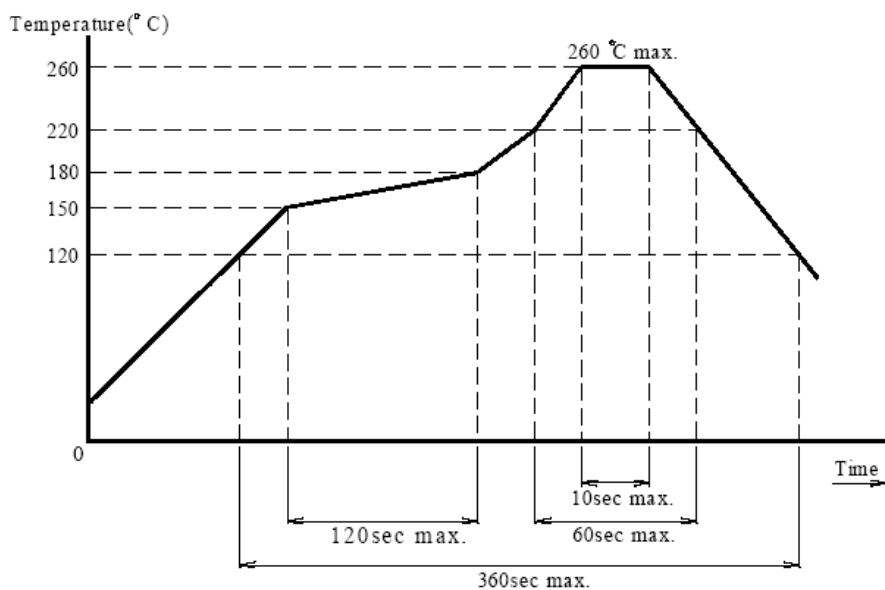
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Ordering Information

Part numbering system				
QEN101	B	D	A	50.000MHZ
Package type	Temperature Stability	Supply Voltage	Output	Nominal Frequency (MHz)
SMD Package QEN101 : SMD 7x5	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 B : HCMOS 50pF	Please enter the nominal frequency

Suggested Reflow Soldering Profile

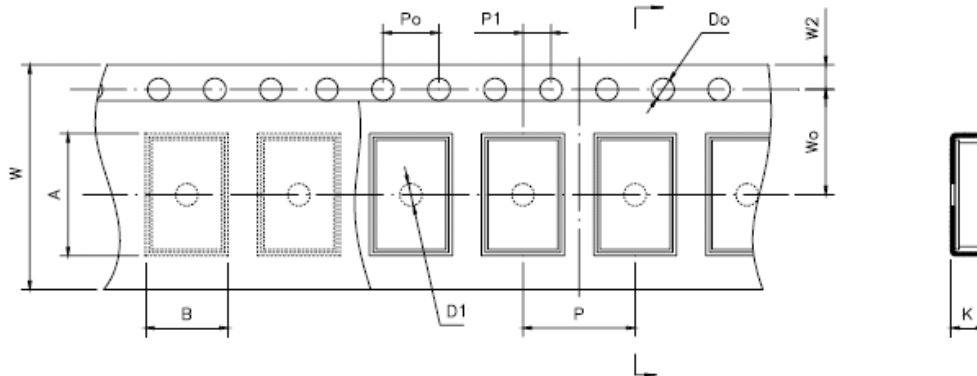


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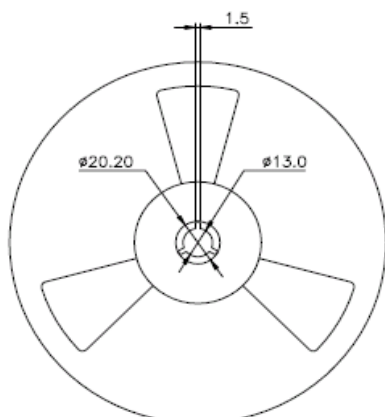
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▣ Tape Drawing



Item	Code	Dimension	Tolerance
Pitch of components	P	8.0	± 0.1
Pitch of sprocket hole	Po	4.0	± 0.1
Length from hole center to component center	P1	2.0	± 0.1
Width of carrier tape	W	16.0	+0.3/-0.1
Width of adhesive tape	W0	7.5	± 0.1
Height of component hole	A	8.18	± 0.1
Width of component hole	B	5.56	± 0.1
Gap of hold down tape and carrier tape	W2	1.75	± 0.1
Diameter of sprocket hole	Do	∅ 1.5	± 0.05
Diameter of feed hole	D1	∅ 1.5	± 0.25
Total of tape thickness	K	2.16	± 0.1

▣ Reel Drawing



Multiple : 1Kpcs per Reel

Unit : mm

