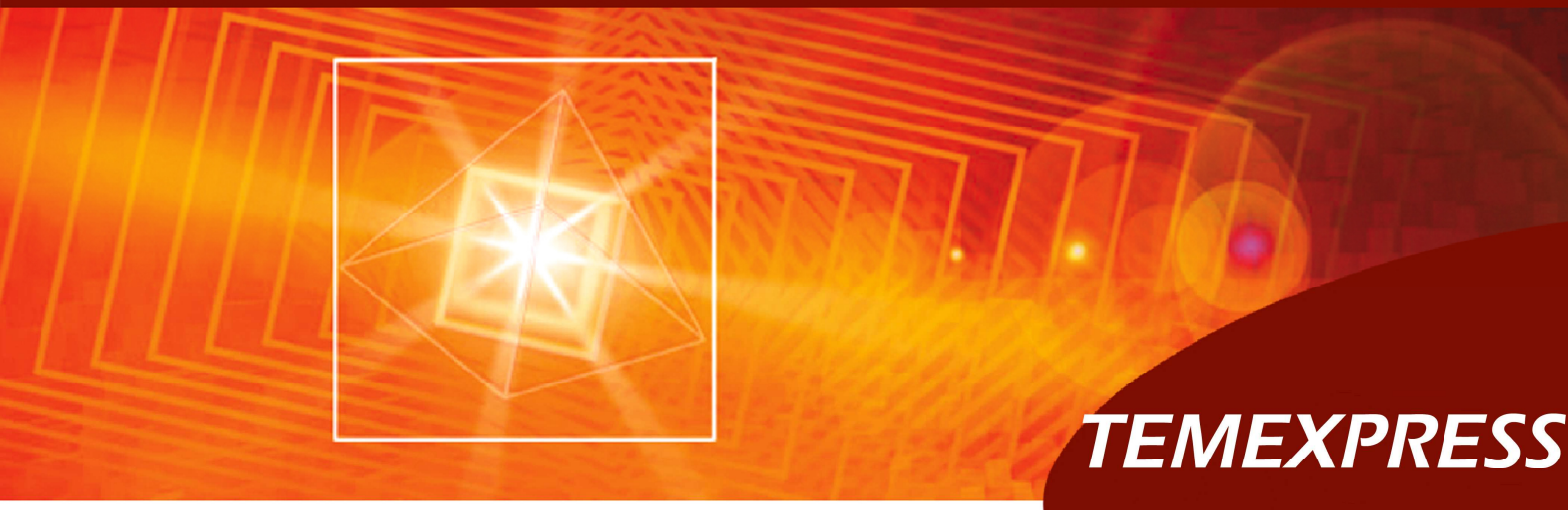
FREQUENCY



TEMEXPRESS

QEN05

SMD 5x3.2 XO – Communications Equipment Application

Specification (Rev-D)

QEN05

SMD 5x3.2 XO – Communications Equipment Application

Specification (rev-D)

March 31st, 2014

Electrical Characteristics

Electrical Parameters	Unit	Minimum	Typical	Maximum	Test conditions
Frequency range (see note 1)	MHz	1.000		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% / 2.8V±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 load	pF		15	30	Refer to Ordering Information
Duty cycle (see note 3)	%		40/60		Refer to Ordering Information
Rise & Fall time	ns			7	From 10% Vcc to 90% Vcc
Start-up time	ms			10	From 10% Vcc to 90% Vcc

Note 1: For 5.0V version, maximum frequency is limited to 100MHz .
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.
Note 4: QEN05 serie is compliant with RoHS Recast Directive (100/65/EU).

Table 1 : Stability Codes

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

Table 2 : Input Current

Frequency range (MHz)	Vcc=5V Cl=15 pF	Vcc=3.3V Cl=15pF	Vcc=2.8V Cl=15pF	Vcc=1.8V 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 133	40 mA	35 mA	30 mA	25 mA

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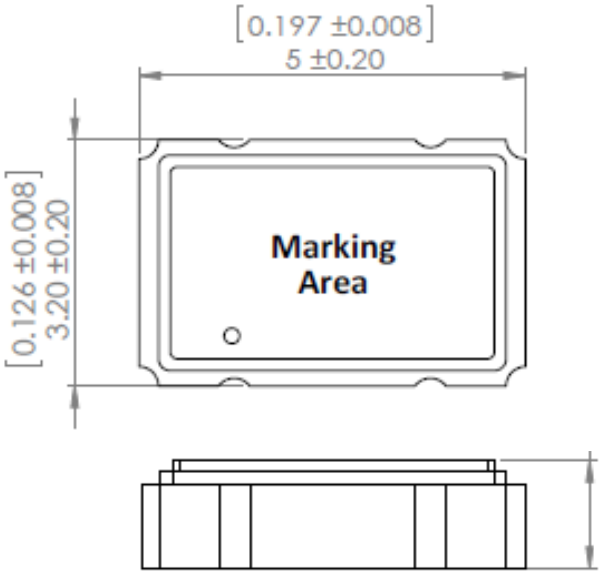
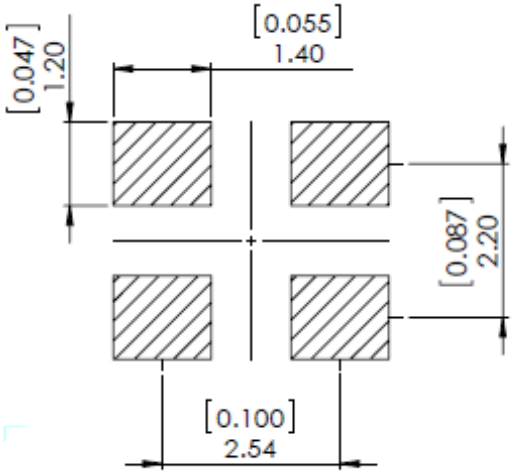
Mechanical Characteristics

TOP VIEW



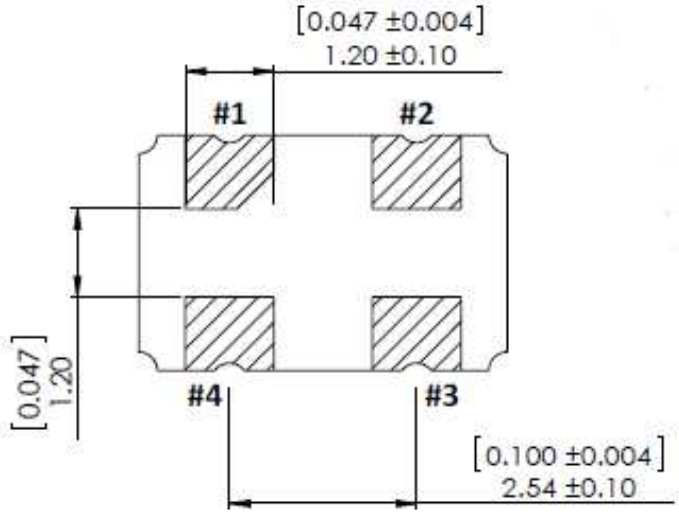
Hmax = 1.3 mm

SUGGESTED PAD



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

BOTTOM 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

Marking	
Line 1	Manufacturing code + 05 + stability/supply voltage/output code
Line 2	Frequency in MHz (6 digits)
Line 3	Date Code (YYWW)

Example for QEN05BDA / 50MHz

- ⇨ Line 1 : G05BDA
- ⇨ Line 2 : 50.000
- ⇨ Line 3 : YYWW (date code)

QEN05

SMD 5x3.2 XO – Communications Equipment Application

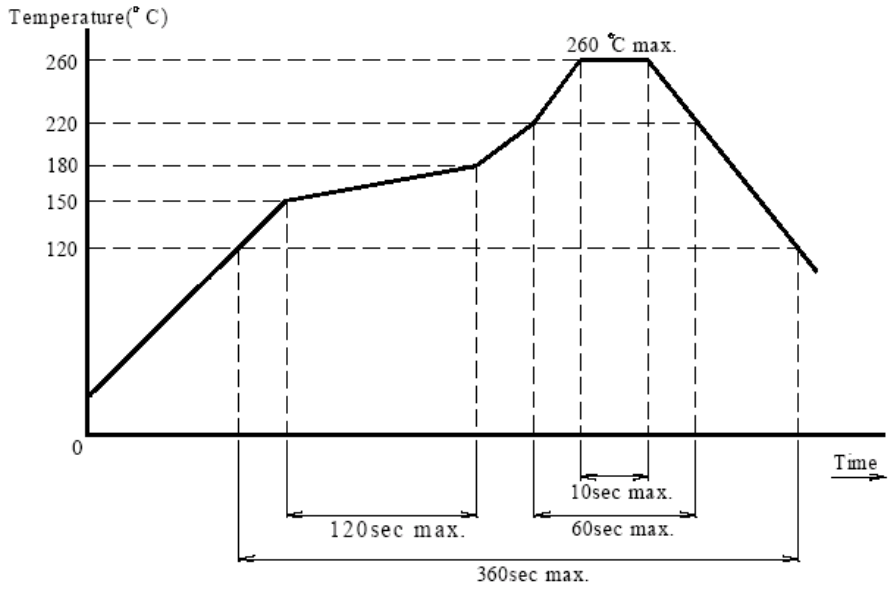
Specification (rev-D)

March 31st, 2014

Ordering Information

Part numbering system					
QEN05	B	D	A	R	50.000MHZ
Package type	Temperature Stability	Supply Voltage	Output	Output Symmetry Option	Nominal Frequency (MHz)
SMD Package **QEN05 :** SMD 5x3.2	**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** : +2.8V **N** : +1.8V	**A** : HCMOS 15pF **B** : HCMOS 30pF	**Blank** : 40/60% **R** : 45/55%	Please enter the nominal frequency

Suggested Reflow Soldering Profile



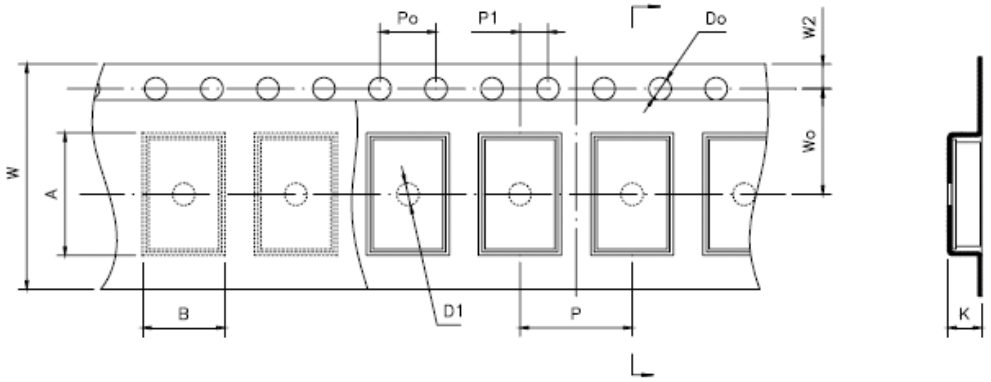
QEN05

SMD 5x3.2 XO – Communications Equipment Application

Specification (rev-D)

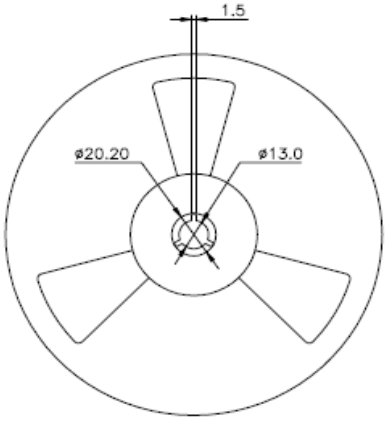
March 31st, 2014

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	12.0	± 0.3
Width of adhesive tape	W0	5.5	± 0.1
Height of component hole	A	5.7	± 0.1
Diameter of sprocket hole	Do	∅ 1.5	± 0.1
Total of tape thickness	K	1.5	± 0.1

Reel Drawing



Multiple : 1Kpcs per Reel

Unit : mm