



QEN05

SMD 5x3.2 XO – Communications Equipment Application
Specification (Rev-C)

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Electrical Characteristics

| Electrical Parameters | Unit | Minimum | Typical | Maximum | Test conditions |
|--|--------------------|---------|------------|------------|-------------------------------|
| Frequency range (see note 1) | MHz | 1.544 | | 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 | +1.8 | | +5.0 | Refer to Ordering Information |
| Frequency Stability (see note 2) | ± ppm | 25 | 50 | 100 | Refer to Ordering Information |
| Aging (First Year) | ± ppm | | | 5 | Ref at 25°C |
| Input current (see table 2) | mA | | | | |
| 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: Not all voltages, loads or stabilities are available for frequency over 70 MHz.

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 |

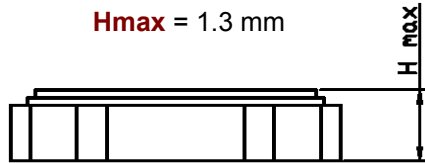
| Frequency range (MHz) | Vcc=5V | Vcc=3.3V | Vcc=2.5V | Vcc=1.8V |
|-----------------------|----------|----------|----------|----------|
| | Cl=15 pF | Cl=15pF | Cl=15pF | Cl=15pF |
| 1.544 to 9.999 | 15 mA | 8 mA | 7 mA | 6 mA |
| 10.00 to 34.999 | 20 mA | 10 mA | 8 mA | 7 mA |
| 35.00 to 49.999 | 35 mA | 25 mA | 20 mA | 15 mA |
| 50.00 to 125 | 40 mA | 35 mA | 30 mA | 25 mA |

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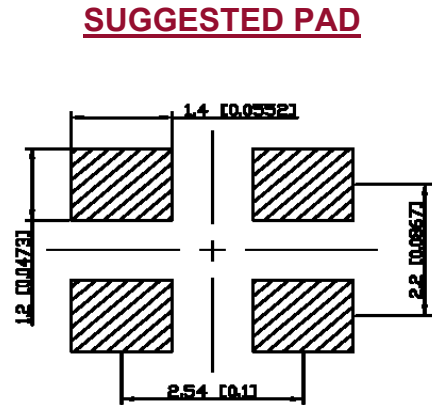
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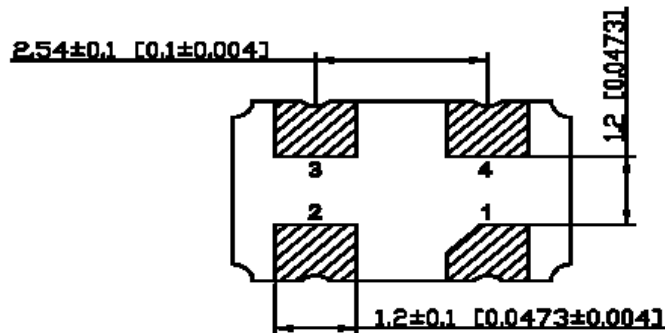
- Mechanical Characteristics



TOP VIEW



BOTTOM VIEW



| Pin connections | |
|-----------------|------------------|
| #2 | Tri state 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) |

Example for QEN05BDA / 50MHz
 ⇨ Line 1 : G05BDA
 ⇨ Line 2 : 50.000

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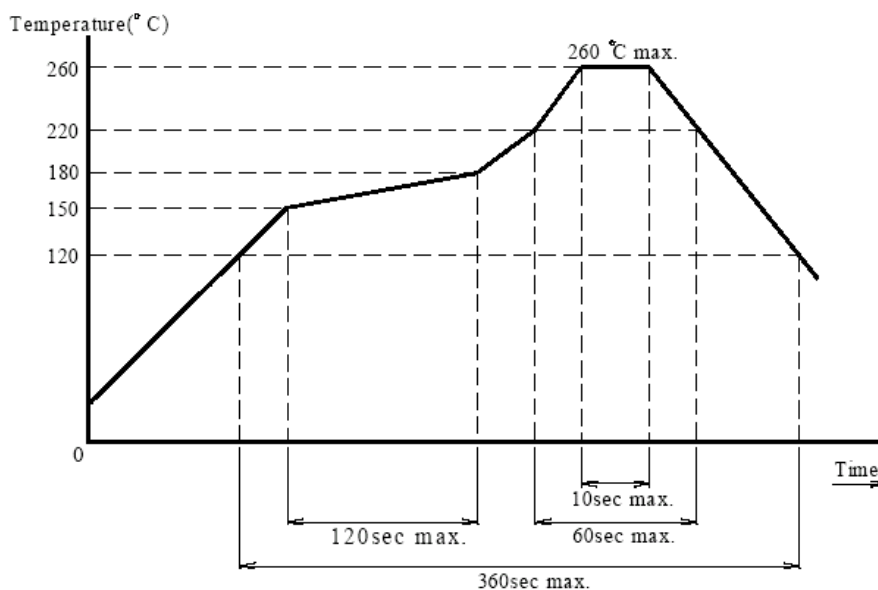
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Ordering Information

| 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 : +2.5V N : +1.8V | A : HCMOS 15pF B : HCMOS 30pF | Blank : 40/60% R : 45/55% | Please enter the nominal frequency |

Suggested Reflow Soldering Profile

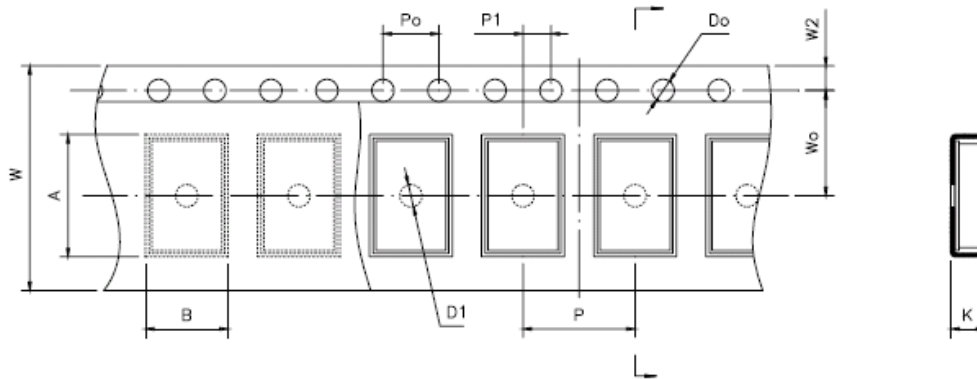


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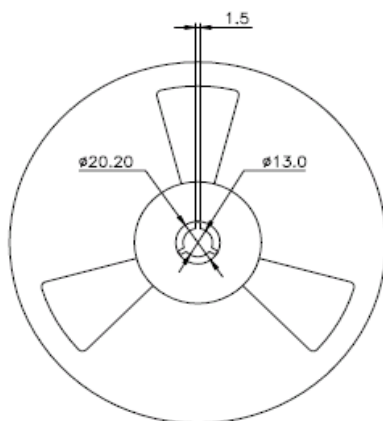
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▣ Tape Drawing



| 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 | 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

