QEN101

7.0 x 5.0 mm, SMDs

COMPLIANT

Frequency and Electrical Characteristics

| Parameter | Min. | Тур. | | Max. | | Unit | | Test c | ondition / De | scription |
|---|---|--------------------------|----------------------|--|------------------------|--|------------------------|--------------------|---------------------------------|----------------------------|
| Nominal frequency (Fn) | 1 | | | 133 | | MHz | _ | All free supply | quencies are n voltage optio | ot available for all ns |
| Operating temperature range | | -10 to +70 | | -40 to +85 | | °C See 'C | | See 'O | Order Part Example' | |
| Frequency stability over temperature ¹ | ±25 | ±50 | | ±100 | | ppm See | | See 'O | ee 'Order Part Example' | |
| Storage temperature range | -55 | | | +125 | | °C | | | | |
| Long-term stability (Ageing) | | | | ±2 | | ppm | m Freque | | ency drift over 1 year at 25°C | |
| Power supply voltage (V _{CC}) 1.8V (N option) 2.5V (M option) 3.3V (D option) 5.0V (A option) | 1.710 2.375 3.135 4.750 | 1.8 2.5 3.3 5.0 | | 1.890 2.625 3.465 5.250 | | V _{DC} | | See 'O | rder Part Exan | nple' |
| HCMOS ² output load | | 15 | | 50 | | рF | | | | |
| Output logic levels Output logic high (V _{OH}) Output logic low (V _{OL}) | 90%Vcc | | | 10%Vcc | | V _{DC} | | | | |
| Duty cycle ³ | 45 | 50 | | 55 | | % | | | | |
| Start-up time | | | | 10 | | ms | | | | |
| RMS phase jitter [12kHz ~ 20MHz] | | | 1.0 | | | ps | | | | |
| Period jitter (pk-pk) | | | | 25 | | ps | | | | |
| Input current | Frequency | | Vco | = 5V | = 5V V _{cc} = | | V _{cc} = 2.5V | | V _{CC} = 1.8V | |
| | 1.000 to 9.999MHz 10.00 to 34.999MHz 35.00 to 49.999MHz 50.0 to 133MHz | | 15 20 35 40 | 5 mA 8 m 0 mA 10 r 5 mA 25 r 0 mA 35n | | A 7 mA hA 8 mA hA 20 m A 30 m | | A A | 6 mA 7 mA 15 mA 25 mA | |
| Rise & fall time | | | | | | | | | | |
| | Condition | | Vcc | = 5V | V _{CC} = | 3.3V | V _{CC} = | 2.5V | V _{CC} = 1.8V | |

Environmental Specifications

6 ns

6 ns

6 ns

6 ns

7 ns

7 ns

8 ns

8 ns

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

10%Vcc to 90% Vcc

90%Vcc to 10% Vcc

- lssue: J, 25 April 2024
- Specifications are subject to change without notice
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¹ Include 25°C tolerance, operating temperature range, input voltage change (V_{cc}±5%), load change (15pF ±10%), first year ageing, shock and vibration. ² HCMOS load 50pF or TTL load 50 LS-TTL is only available with 5.0V version



Standard SMD XO | Wireless Communications

| Parameter | Test condition / Description |
|----------------------|---|
| Mechanical vibration | 10g, Frequency: 10Hz ~ 2KHz according to standard CEI 68-2-63 |
| Shock | 100g, 6ms according to standard CEI 68-2-27 |

Order Part Example – QEN101BDA / 50.000MHZ

| Parameter | Product family and package | Frequency stability (FvT) | Supply Voltage (Vcc) | Output | Nominal Frenquency (Fn. MHz) |
|-----------|---------------------------------|--|--|-------------------------------------|---------------------------------|
| Code | QEN101 | В | D | Α | 50.000MHZ |
| Decode | QEN = XO 101 = SMD, 7 x 5 mm | 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 Fn |

Model Outline, Recommended Pad Layout and Marking





Standard SMD XO | Wireless Communications

Packaging







Reflow Soldering Profile