


Helping Customers Innovate, Improve & Grow



Description

Vectron's VCC1 Crystal Oscillator (XO) is a quartz stabilized square wave generator with a CMOS output. The VCC1 uses a fundamental or 3rd overtone crystal resulting in very low jitter performance, and a monolithic IC which improves reliability and reduces cost.

Features

- Ultra Low Jitter, Fundamental or 3rd OT Crystal Design
- CMOS Output Crystal Oscillator
- Output Frequencies from 1.024 MHz to 190.000 MHz
- 5.0, 3.3, 2.5 or 1.8 V Operation
- Output Disable Feature
- Excellent 20ppm temperature stability
- -10/70°C, -40/85°C or -55/125°C operating temperature
- Small Industry Standard Package, 5x7mm
- Product is compliant to RoHS directive  and fully compatible with lead free assembly

Applications

- SONET/SDH/DWDM
- Ethernet, GE, SynchE
- Storage Area Networking
- Fiber Channel
- Digital Video
- Broadband Access
- Base Stations, Picocells
- Driving A/D's, D/A's, FPGA's
- Test and Measurement
- COTS

Block Diagram



Table 1. Electrical Performance, 5V Option

| Parameter | Symbol | Minimum | Typical | Maximum | Units |
|--|--|-------------------------------|-----------|----------------------|--------------------|
| Supply | | | | | |
| Voltage ¹ | V_{DD} | 4.5 | 5.0 | 5.5 | V |
| Max Voltage | | -0.7 | | 7 | V |
| Current ² ≤20.000MHz 20.001 to 50.000MHz 50.001 to 85.000MHz 85.001 to 125.000MHz | I_{DD} | | | 10 30 50 60 | mA |
| Current, Output Disabled | | | | 30 | uA |
| Frequency | | | | | |
| Nominal Frequency ³ | f_N | 1.544 | | 125.000 | MHz |
| Stability ⁴ , (Ordering Option) | | ±20, ±25, ±32, ±50, ±100 | | | ppm |
| Outputs | | | | | |
| Output Logic Levels ² Output Logic High Output Logic Low Output Logic High Drive Output Logic Low Drive | V_{OH} V_{OL} I_{OH} I_{OL} | 0.9* V_{DD} 16 16 | | 0.1* V_{DD} | V V mA mA |
| Load | I_{OUT} | | | 15 | pF |
| Output Rise /Fall Time ² <20.000MHz 20.000 to 50.000MHz 50.001 to 125.000MHz | t_R/t_F | | | 8 5 2 | ns |
| Output Leakage, Output Disabled | I_Z | | | ±10 | uA |
| Duty Cycle ^{2,5} | | 45 | 50 | 55 | % |
| Period Jitter ⁶ RMS Peak-Peak | ϕJ | | 2.5 18 | | ps |
| RMS Jitter, 12k-20MHz | ϕJ | | 0.5 | 1 | ps |
| Enable/Disable | | | | | |
| Output Enable/Disable ⁷ Output Enable Output Disable | V_{IH} V_{IL} | 4.0 | | 0.8 | V V |
| Disable time | t_D | | | 100 | ns |
| Enable Internal Pull-Up Resistor | | | 100 | | Kohm |
| Start-Up Time | t_{SU} | | | 10 | ms |
| Operating Temp, (Ordering Option) | T_{OP} | -10/70, -40/85, -55/125 | | | °C |

1] The power supply should have by-pass capacitors as close to the supply and to ground as possible, for example 0.1 and 0.01 uF

2] Parameters are tested with the test circuit shown in Figure 1.

3] See Standard Frequencies and Ordering Information tables for more specific information

4] Includes initial accuracy, operating temperature, supply voltage, shock and vibration (not under operation) and 10 years aging.

5] Duty Cycle is measured as On Time/Period, see Fig 2.

6] Broadband Period Jitter measured using a LeCroy Wavemaster 8600A, 90K samples, see Application Note for Typical Phase Noise and Jitter Performance

7] The Output is Enabled if the Enable/Disable is left open.

Table 2. Electrical Performance, 3.3V Option

| Parameter | Symbol | Minimum | Typical | Maximum | Units |
|--|--|-----------------------------|-----------|---------------------|--------------------|
| Supply | | | | | |
| Voltage ¹ | V_{DD} | 2.97 | 3.3 | 3.63 | V |
| Maximum Voltage | | -0.5 | | 5 | V |
| Current ² ≤20.000 20.001 to 50.000 50.001 to 85.000 85.001 to 190.000 | I_{DD} | | | 7 20 30 50 | mA |
| Current, Output Disabled | | | | 30 | uA |
| Frequency | | | | | |
| Nominal Frequency ³ | f_N | 1.024 | | 190.000 | MHz |
| Stability ⁴ , (Ordering Option) | | ±20, ±25, ±32, ±50, ±100 | | | ppm |
| Outputs | | | | | |
| Output Logic Levels ² Output Logic High Output Logic Low Output Logic High Drive Output Logic Low Drive | V_{OH} V_{OL} I_{OH} I_{OL} | 0.9* V_{DD} 8 8 | | 0.1* V_{DD} | V V mA mA |
| Load | I_{OUT} | | | 15 | pF |
| Output Rise /Fall Time ² <20.000MHz 20.000 to 50.000MHz 50.001 to 90.000MHz 90.001 to 190.000MHz | t_R/t_F | | | 6 4 3 2 | ns |
| Output Leakage, Output Disabled ^{2,5} | I_z | | | ±10 | uA |
| Duty Cycle ^{2,5} | | 45 | 50 | 55 | % |
| Period Jitter ⁶ RMS Peak-Peak | ϕ_J | | 2.5 18 | | ps |
| RMS Jitter, 12k-20M | ϕ_J | | 0.5 | 1 | ps |
| Enable/Disable | | | | | |
| Output Enable/Disable ⁷ Output Enable Output Disable | V_{IH} V_{IL} | 2.0 | | 0.5 | V V |
| Disable time | t_D | | | 100 | ns |
| Enable Internal Pull-Up Resistor | | | 100 | | Kohm |
| Start-Up Time | t_{SU} | | | 10 | ms |
| Operating Temp, (Ordering Option) | T_{OP} | -10/70, -40/85, -55/125 | | | °C |

1] The power supply should have by-pass capacitors as close to the supply and to ground as possible, for example 0.1 and 0.01uF

2] Parameters are tested with the test circuit shown in Figure 1.

3] See Standard Frequencies and Ordering Information tables for more specific information

4] Includes initial accuracy, operating temperature, supply voltage, shock and vibration (not under operation) and 10 years aging.

5] Duty Cycle is measured as On Time/Period, see Fig 2.

6] Broadband Period Jitter measured using a LeCroy Wavemaster 8600A, 90K samples, see Application Note for Typical Phase Noise and Jitter Performance

7] The Output is Enabled if the Enable/Disable is left open.

Table 3. Electrical Performance, 2.5V Option

| Parameter | Symbol | Minimum | Typical | Maximum | Units |
|---|--|-----------------------------------|-----------|---------------------|--------------------------------|
| Supply | | | | | |
| Voltage ¹ | V_{DD} | 2.25 | 2.5 | 2.75 | V |
| Maximum Voltage | | -0.5 | | 5 | V |
| Current ² ≤20.000MHz 20.001 to 50.000MHz 50.001 to 110.000MHz 110.001 to 190.000MHz | I_{DD} | | | 7 15 20 30 | mA |
| Current, Output Disabled | | | | 30 | uA |
| Frequency | | | | | |
| Nominal Frequency ³ | f_N | 1.544 | | 190.000 | MHz |
| Stability ⁴ , (Ordering Option) | | ±20, ±25, ±32, ±50, ±100 | | | ppm |
| Outputs | | | | | |
| Output Logic Levels ^{2,3} Output Logic High Output Logic Low Output Logic High Drive Output Logic Low Drive Output Logic High Drive ⁵ Output Logic Low Drive ⁵ | V_{OH} V_{OL} I_{OH} I_{OL} | 0.9* V_{DD} 4 4 8 8 | | 0.1* V_{DD} | V V mA mA mA mA |
| Load | I_{OUT} | | | 15 | pF |
| Output Rise /Fall Time ² <20.000MHz 20.000 to 50.000MHz 50.001 to 90.000MHz 90.001 to 190.000MHz | t_R/t_F | | | 10 6 3 2 | ns |
| Output Leakage, Output Disabled | | | | ±10 | uA |
| Duty Cycle ^{2,6} | | 45 | 50 | 55 | % |
| Period Jitter ⁷ RMS Peak-Peak | ϕ_J | | 2.5 18 | | ps |
| RMS Jitter, 12k-20MHz | ϕ_J | | 0.5 | 1 | ps |
| Enable/Disable | | | | | |
| Output Enable/Disable ⁸ Output Enable Output Disable | V_{IH} V_{IL} | 1.75 | | 0.5 | V V |
| Disable time | t_D | | | 100 | ns |
| Enable Internal Pull-Up Resistor | | | 100 | | Kohm |
| Start-Up Time | t_{SU} | | | 10 | ms |
| Operating Temp, (Ordering Option) | T_{OP} | -10/70, -40/85, -55/125 | | | °C |

1] The power supply should have by-pass capacitors as close to the supply and to ground as possible, for example 0.1 and 0.01uF

2] Parameters are tested with the test circuit shown in Figure 1.

3] See Standard Frequencies and Ordering Information tables for more specific information

4] Includes initial accuracy, operating temperature, supply voltage, shock and vibration (not under operation) and 10 years aging.

5] Output Frequencies > 35MHz

6] Duty Cycle is measured as On Time/Period, see Fig 2.

7] Broadband Period Jitter measured using a LeCroy Wavemaster 8600A, 90K samples, see Application Note for Typical Phase Noise and Jitter Performance

8] The Output is Enabled if the Enable/Disable is left open.

Table 4. Electrical Performance, 1.8V Option

| Parameter | Symbol | Minimum | Typical | Maximum | Units |
|---|--|---|-----------|---------------------------|--------------------|
| Supply | | | | | |
| Voltage ¹ | V_{DD} | 1.71 | 1.8 | 1.89 | V |
| Maximum Voltage | | -0.5 | | 3.6 | V |
| Current ² ≤20.000MHz 20.001 to 70.000MHz 70.001 to 96.000MHz 96.001 to 125.000MHz 125.001 to 172.000MHz | I_{DD} | | | 5 15 20 25 30 | mA |
| Current, Output Disabled | | | | 30 | uA |
| Frequency | | | | | |
| Nominal Frequency ³ | f_N | 1.544 | | 172.000 | MHz |
| Stability ⁴ , (Ordering Option) | | ±20, ±25, ±32, ±50, ±100 | | | ppm |
| Outputs | | | | | |
| Output Logic Levels ^{2,3} Output Logic High Output Logic Low Output Logic High Drive Output Logic Low Drive Output Logic High Drive ⁵ Output Logic Low Drive ⁵ | V_{OH} V_{OL} I_{OH} I_{OL} I_{OH} I_{OL} | 0.9* V_{DD} 2.8 2.8 8 8 | | 0.1* V_{DD} | V V mA mA |
| Load | I_{OUT} | | | 15 | pF |
| Output Rise /Fall Time ² <20.000MHz 20.000 to 50.000MHz 50.001 to 90.000MHz 90.000 to 172.000MHz | t_R/t_F | | | 4 4 3 2 | ns |
| Output Leakage, Output Disabled | I_z | | | ±10 | uA |
| Duty Cycle ^{2,6} | | 45 | 50 | 55 | % |
| Period Jitter ⁷ RMS Peak-to-peak | ϕ_J | | 2.5 18 | | ps |
| RMS Jitter, 12kHz-20MHz | ϕ_J | | 0.5 | 1 | ps |
| Enable/Disable | | | | | |
| Output Enable/Disable ⁸ Output Enable Output Disable | V_{IH} V_{IL} | 1.26 | | 0.5 | V V |
| Disable time | t_D | | | 100 | ns |
| Enable Internal Pull-Up Resistor | | | 1 | | Mohm |
| Start-Up Time | t_{SU} | | | 10 | ms |
| Operating Temp, Ordering Option | T_{OP} | -10/70, -40/85, -55/125 | | | °C |

1] The power supply should have by-pass capacitors as close to the supply and to ground as possible, for example 0.1 and 0.01uF

2] Parameters are tested with the test circuit shown in Figure 1.

3] See Standard Frequencies and Ordering Information tables for more specific information

4] Includes initial accuracy, operating temperature, supply voltage, shock and vibration (not under operation) and 10 years aging.

5] Output Frequencies > 35MHz

6] Duty Cycle is measured as On Time/Period, see Fig 2.

7] Broadband Period Jitter measured using a LeCroy Wavemaster 8600A, 90K samples, see Application Note for Typical Phase Noise and Jitter Performance

8] The Output is Enabled if the Enable/Disable is left open.

Test Diagram and Waveform

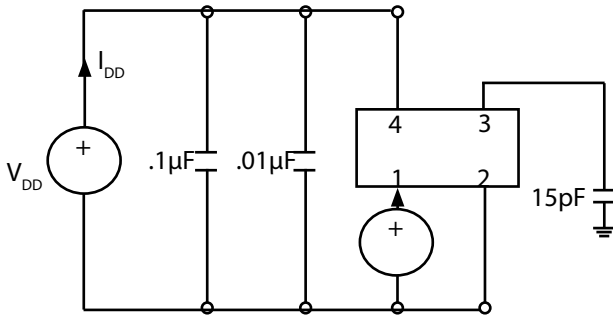
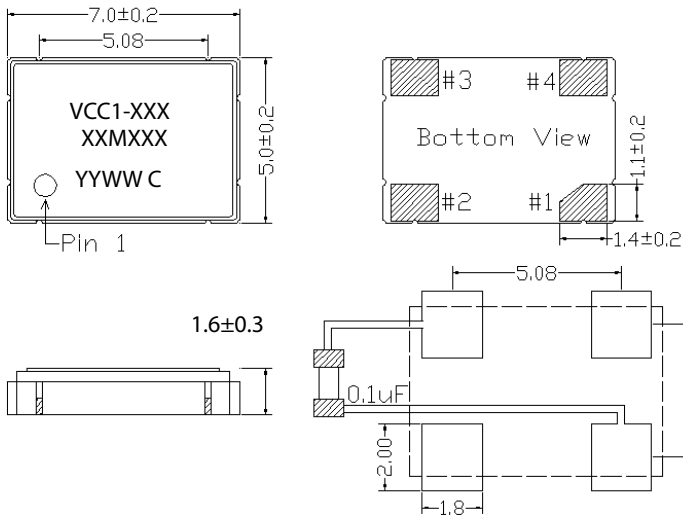


Fig 1: Test Circuit



Fig 2: Waveform

Outline Drawing & Pad Layout



Recommended Soldering Pad Layout

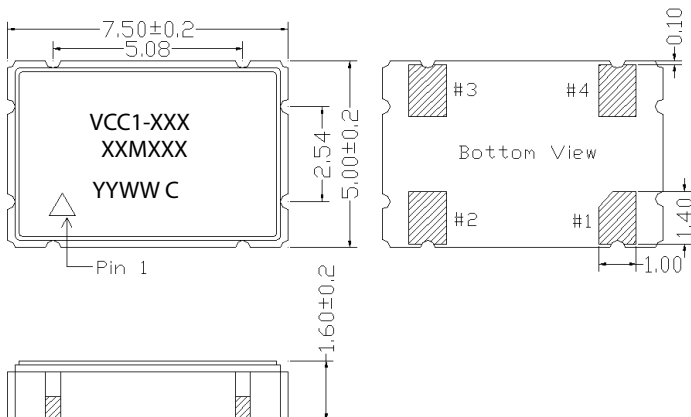
Dimensions in mm

Table 5. Pin Out

| Pin | Symbol | Function |
|-----|----------|----------------------------|
| 1 | E/D | Enable Disable |
| 2 | GND | Case and Electrical Ground |
| 3 | Output | Output |
| 4 | V_{DD} | Power Supply Voltage |

Table 6. Enable Disable Function

| E/D Pin | Output |
|---------|----------------|
| High | Clock Output |
| Open | Clock Output |
| Low | High Impedance |



Alternate Package Design

Reliability

Vectron qualification includes aging at various extreme temperatures, shock and vibration, temperature cycling, and IR reflow simulation. The VCC1 family is capable of meeting the following qualification tests:

| Table 7. Environmental Compliance | |
|-----------------------------------|---|
| Parameter | Conditions |
| Mechanical Shock | MIL-STD-883, Method 2002 |
| Mechanical Vibration | MIL-STD-883, Method 2007 |
| Temperature Cycle | MIL-STD-883, Method 1010 |
| Solderability | MIL-STD-883, Method 2003 |
| Gross and Fine Leak | MIL-STD-883, Method 1014 |
| Resistance to Solvents | MIL-STD-883, Method 2015 |
| Moisture Sensitivity Level | MSL 1 |
| Contact Pads | Gold (0.3 um min to 1.0 um max) over Nickel |
| Weight | 178 mg |

Although ESD protection circuitry has been designed into the VCC1 proper precautions should be taken when handling and mounting. Vectron employs a human body model (HBM) and a charged device model (CDM) for ESD susceptibility testing and design protection evaluation.

| Table 8. ESD Ratings | | |
|----------------------|---------|--------------------------|
| Model | Minimum | Conditions |
| Human Body Model | 1500V | MIL-STD-883, Method 3015 |
| Charged Device Model | 1000V | JESD22-C101 |

Stresses in excess of the absolute maximum ratings can permanently damage the device. Functional operation is not implied at these or any other conditions in excess of conditions represented in the operational sections of this datasheet. Exposure to absolute maximum ratings for extended periods may adversely affect device reliability. Permanent damage is also possible if E/D is applied before V_{DD} .

| Table 9. Absolute Maximum Ratings | | | |
|-----------------------------------|----------|------------|----------|
| Parameter | Symbol | Ratings | Unit |
| Storage Temperature | T_S | -55 to 125 | °C |
| Soldering Temp/Time | T_{LS} | 260 / 30 | °C / sec |

IR Reflow

The VCC1 is qualified to meet the JEDEC standard for Pb-Free assembly. The temperatures and time intervals listed are based on the Pb-Free small body requirements. The VCC1 device is hermetically sealed so an aqueous wash is not an issue.

Solderprofile:

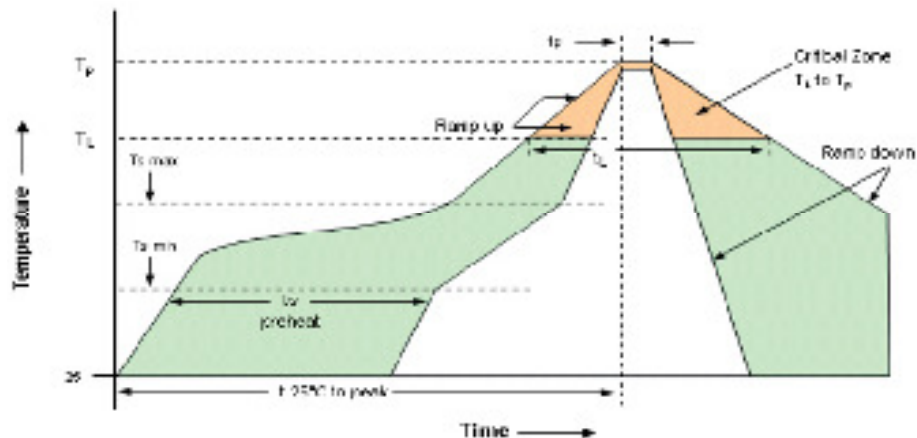


Table 10. Reflow Profile

| Parameter | Symbol | Value |
|----------------------------------|-------------|---|
| PreHeat Time Ts-min Ts-max | t_s | 60 sec Min, 260 sec Max 150°C 200°C |
| Ramp Up | R_{UP} | 3 °C/sec Max |
| Time Above 217 °C | t_L | 60 sec Min, 150 sec Max |
| Time To Peak Temperature | T_{AMB-P} | 480 sec Max |
| Time at 260 °C | t_p | 30 sec Max |
| Ramp Down | R_{DN} | 6 °C/sec Max |

Tape and Reel

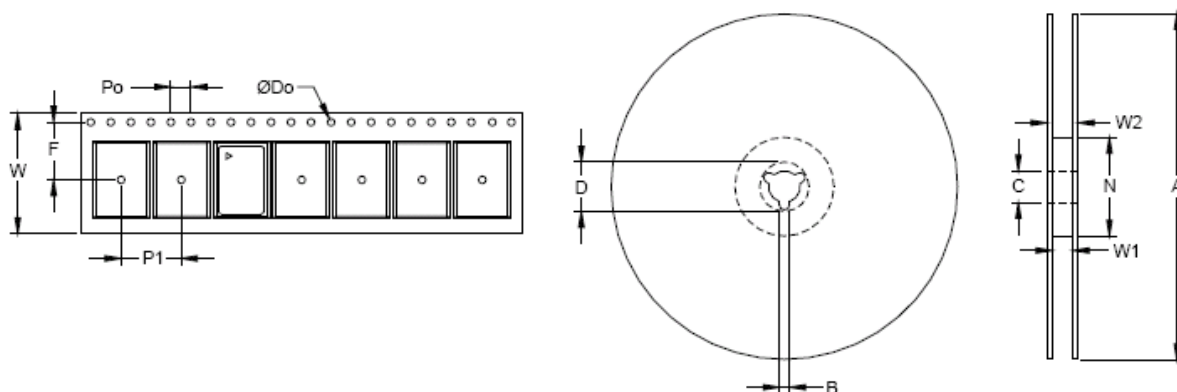


Table 11. Tape and Reel Information

| Tape Dimensions (mm) | | | | | | Reel Dimensions (mm) | | | | | | | |
|----------------------|-----|-----|-----|-----|-----|----------------------|-----|-----|-----|-----|-----|-----|------------|
| Dimension | W | F | Do | Po | P1 | A | B | C | D | N | W1 | W2 | # Per Reel |
| Tolerance | Typ | Typ | Typ | Typ | Typ | Typ | Min | Typ | Min | Min | Typ | Max | |
| VCC1 | 16 | 7.5 | 1.5 | 4 | 8 | 180 | 2 | 13 | 21 | 60 | 17 | 21 | 1000 |

Table 12. Standard Output Frequencies (MHz)

| | | | | | | | | | |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1.544 | 1.843 | 2.000 | 2.048 | 2.560 | 3.080 | 3.686 | 4.000 | 4.032 | 4.096 |
| 4.9152 | 5.000 | 6.000 | 6.176 | 7.3728 | 7.680 | 8.000 | 8.192 | 9.216 | 9.600 |
| 9.830 | 10.000 | 10.240 | 10.486 | 12.000 | 12.222 | 12.2725 | 12.288 | 12.352 | 12.500 |
| 12.544 | 12.624 | 12.729 | 12.800 | 12.81089 | 12.960 | 13.000 | 13.070 | 13.107 | 13.200 |
| 13.248 | 13.400 | 13.401 | 13.500 | 13.560 | 13.711 | 13.824 | 14.000 | 14.284 | 14.2848 |
| 14.285 | 14.318 | 14.31818 | 14.336 | 14.400 | 14.500 | 14.5152 | 14.720 | 14.736 | 14.745 |
| 14.746 | 15.000 | 15.211 | 15.360 | 15.555 | 15.625 | 15.748 | 15.74886 | 15.974 | 16.000 |
| 16.016 | 16.128 | 16.368 | 16.384 | 16.388 | 16.500 | 16.588 | 16.610 | 16.660 | 16.666 |
| 16.667 | 16.670 | 16.776 | 16.780 | 16.896 | 16.9344 | 17.000 | 17.0664 | 17.37476 | 17.408 |
| 17.600 | 17.664 | 17.734 | 17.73448 | 17.920 | 17.992 | 18.000 | 18.333 | 18.400 | 18.432 |
| 18.688 | 18.750 | 19.000 | 19.022 | 19.200 | 19.268 | 19.286 | 19.392 | 19.440 | 19.456 |
| 19.530 | 19.654 | 19.660 | 19.6608 | 19.752 | 19.774 | 19.872 | 19.968 | 20.000 | 20.00271 |
| 20.141 | 20.200 | 20.2752 | 20.480 | 20.516 | 20.712 | 20.736 | 20.769 | 20.7692 | 20.800 |
| 20.828 | 20.829 | 20.829 | 20.830 | 20.875 | 20.950 | 20.971 | 21.000 | 21.333 | 21.400 |
| 21.500 | 21.504 | 21.616 | 21.71055 | 21.711 | 22.000 | 22.118 | 22.174 | 22.184 | 22.217 |
| 22.500 | 22.579 | 22.5792 | 22.600 | 22.855 | 22.85568 | 23.000 | 23.040 | 23.732 | 24.000 |
| 24.431 | 24.444 | 24.540 | 24.545 | 24.5454 | 24.576 | 24.704 | 24.832 | 25.000 | 25.088 |
| 25.175 | 25.180 | 25.272 | 25.920 | 26.000 | 26.25641 | 26.664 | 26.6649 | 26.666 | 27.000 |
| 27.120 | 27.500 | 28.000 | 28.224 | 28.60489 | 28.636 | 28.63636 | 28.65645 | 28.672 | 28.800 |
| 29.000 | 29.265 | 29.491 | 29.49893 | 29.500 | 30.000 | 30.150 | 30.200 | 30.720 | 30.880 |
| 31.000 | 31.104 | 31.250 | 31.307 | 31.500 | 31.680 | 31.948 | 31.949 | 32.000 | 32.250 |
| 32.256 | 32.270 | 32.500 | 32.764 | 32.768 | 32.768 | 32.800 | 33.000 | 33.1776 | 33.300 |
| 33.333 | 33.792 | 33.810 | 33.860 | 33.8688 | 34.368 | 34.450 | 34.560 | 34.816 | 35.000 |
| 35.280 | 35.46895 | 35.500 | 35.600 | 35.840 | 35.984 | 36.000 | 36.500 | 36.666 | 36.860 |
| 36.864 | 36.923 | 37.000 | 37.056 | 37.140 | 37.376 | 37.500 | 37.643 | 38.000 | 38.3107 |
| 38.800 | 38.810 | 38.880 | 38.912 | 39.0625 | 39.497 | 39.9278 | 40.000 | 40.010 | 40.079 |
| 40.500 | 40.550 | 40.632 | 40.63232 | 40.920 | 40.960 | 41.472 | 41.500 | 41.657 | 41.660 |
| 41.670 | 41.750 | 41.895 | 41.931 | 42.000 | 42.400 | 42.500 | 42.620 | 43.000 | 43.560 |
| 44.000 | 44.137 | 44.236 | 44.250 | 44.267 | 44.330 | 44.434 | 44.539 | 44.732 | 44.736 |
| 44.928 | 45.000 | 45.135 | 45.158 | 45.818 | 46.080 | 46.232 | 46.2321 | 46.320 | 46.796 |
| 46.864 | 47.13333 | 47.16602 | 47.197 | 47.404 | 47.40437 | 48.000 | 48.33008 | 48.587 | 48.58736 |
| 48.600 | 48.81441 | 49.127 | 49.152 | 49.36221 | 49.408 | 49.512 | 49.58632 | 49.867 | 49.980 |
| 50.000 | 51.156 | 51.200 | 51.840 | 51.840 | 52.000 | 52.416 | 52.500 | 52.560 | 53.125 |
| 53.330 | 54.000 | 54.072 | 54.125 | 54.2174 | 54.500 | 55.000 | 55.289 | 55.500 | 56.000 |
| 56.064 | 56.446 | 56.448 | 56.666 | 57.272 | 57.344 | 57.600 | 57.800 | 58.000 | 58.250 |
| 58.320 | 58.982 | 58.982 | 59.000 | 60.000 | 60.480 | 61.000 | 61.250 | 61.440 | 62.000 |
| 62.208 | 62.500 | 62.800 | 63.000 | 63.8976 | 64.000 | 64.512 | 65.000 | 65.520 | 65.536 |
| 66.000 | 66.600 | 66.660 | 66.666 | 66.667 | 66.670 | 67.500 | 67.584 | 68.000 | 68.680 |
| 68.736 | 69.632 | 70.000 | 70.626 | 70.656 | 70.660 | 70.676 | 70.833 | 71.680 | 72.000 |
| 73.728 | 74.176 | 74.250 | 75.000 | 76.800 | 77.680 | 77.760 | 78.000 | 78.336 | 79.452 |
| 80.000 | 81.000 | 81.920 | 83.000 | 83.300 | 83.333 | 85.000 | 87.040 | 87.182 | 87.472 |
| 89.472 | 89.512 | 89.97804 | 90.000 | 91.008 | 92.000 | 95.000 | 96.000 | 97.776 | 98.304 |
| 100.000 | 102.400 | 103.680 | 104.000 | 106.250 | 110.000 | 112.500 | 114.000 | 115.200 | 116.640 |
| 120.000 | 125.000 | 125.010 | 127.000 | 128.000 | 133.000 | 135.000 | 144.600 | 150.000 | 155.520 |
| 156.250 | 157.000 | 166.000 | 167.000 | 189.000 | 190.000 | | | | |

Ordering Information

VCC1- B3B- xxMxxxxxxx

Product

5x7 Crystal Oscillator

Frequency in MHz

Power Supply

A: +5.0 Vdc, 15pF

B: +3.3 Vdc, 15pF

C: +3.0 Vdc, 15pF

E: +5.0 Vdc, 50pF

F: +3.3 Vdc, 50pF

G: +2.5 Vdc, 15pF

H: +1.8 Vdc, 15pF

StabilityA: ± 100 ppm over -10/70°CB: ± 50 ppm over -10/70°CC: ± 100 ppm over -40/85°CD: ± 50 ppm over -40/85°CE: ± 25 ppm over -10/70°CF: ± 25 ppm over -40/85°CK: ± 32 ppm over -10/70°CO: ± 32 ppm over -40/85°CP: ± 100 ppm over -55/125°CR: ± 50 ppm over -55/125°C**Electrical Options:****3: Tri-state 45/55% Duty Cycle***The following codes are not recommended for new designs*

0: No Tri-state, 40/60% Duty

1: Tri-state, 40/60% Duty

2: No tri-state, 45/55% Duty

5: Enable, 40/60% Duty

6: Enable, 45/55% Duty

Example: VCC1-B3B-125M000000

**Note: not all combination of options are available.
Other specifications may be available upon request.*

20ppm Stability Ordering Information

VCC1-105-frequency = ± 20 ppm over -10/70°C, +5.0Vdc, 45/55% Duty Cycle, 15pF loadVCC1-103-frequency = ± 20 ppm over -10/70°C, +3.3Vdc, 45/55% Duty Cycle, 15pF loadVCC1-118-frequency = ± 20 ppm over -10/70°C, +2.5Vdc, 45/55% Duty Cycle, 15pF loadVCC1-119-frequency = ± 20 ppm over -10/70°C, +1.8Vdc, 45/55% Duty Cycle, 15pF load*** Add SNPB for tin lead solder dip****Example: VCC1-B3B-125M000000_SNPB**

Revision History

| Revision Date | Approved | Description |
|-----------------|----------|--|
| August 10, 2018 | FB | Update logo and contact information, add SNPBDIP ordering option |
| August 08, 2019 | FB | Update logo and contact information, change to SNPB ordering |

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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