

VFVX100

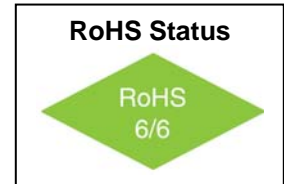
VCXO Low Noise to 1.0GHz

9x14mm SMD, PECL/LVPECL



Features

- 200MHz to 1.0 GHz Frequency Range
- Ultra Low Jitter and Phase Noise
- Absolute Pull Range of ± 35 ppm
- $K_{VCO} = 35$ ppm/V



Applications

- Universal Edge QAM
- Optical Networking, SONET / SDH
- 10 Gigabit Ethernet
- Broadband Access

Replacement for Valpey Fisher Part Number: VFT5V

Electrical Specifications

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|-----------------------------|-----------------|----------------------------------------------------------------------------------|--------------------|----------------------------------|----------------------------------|--------------|------------------------------------------------|
| Frequency Range | F | | 200 | | 1,000 | MHz | |
| Frequency Stability | $\Delta F/F$ | Vs. Operating Temp. B: 0°C to +70°C C: -10°C to +60°C G: -40°C to +85°C | | ± 10 ± 12 ± 18 | ± 20 ± 25 ± 30 | ppm | |
| | | Vs. Supply Voltage Vs. Aging / Year | | ± 3 ± 1 | | ppm/V ppm | First Year |
| Operating Temperature Range | T | | 0° -10° -40° | | +70° +60° +85° | °C | Order Code B Order Code C Order Code G |
| Output | | Signal | PECL / LVPECL | | | | |
| Supply Voltage | V _{CC} | | 4.75 3.15 | 5.00 3.30 | 5.25 3.45 | V | Order D Order E |
| Voltage Control | V _C | | 0 0 | | 5 3.3 | V | V _{CC} = 5V V _{CC} = 3.3V |
| Input Impedance | | $F_m < 10\text{KHz}$ | >50K Ω | | | | |
| K_{VCO} | | | | 35 | | ppm/V | |
| APR | | | ± 35 | | | ppm | |
| Deviation slope | | Monotonic positive | | | | | |
| Linearity | | | -10 | | +10 | % | |
| Modulation BW | | | 10 | | | KHz | 3dB BW |



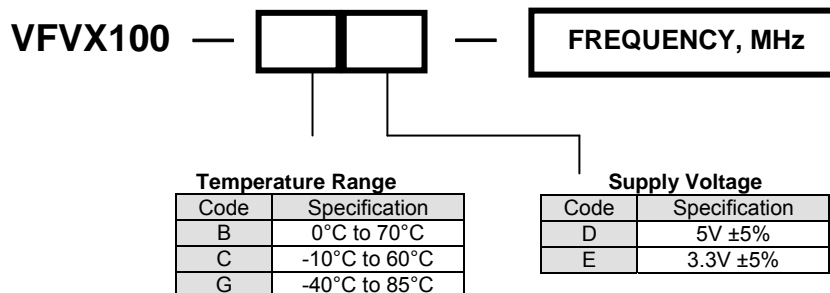
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|---------------------------|-----------------------------------------------------------------------|----------------------------------|----------|-----------------------------|----------|--------|-------------|
| Supply Current | Icc | 50 Ohm Load | | | 75 | mA | |
| Load | 50 Ohm to Vcc-2V or Thevenin Equivalent Bias Required | | | | | | |
| Duty Cycle | | @ 50% | 45 | 50 | 55 | % | |
| Rise / Fall Time | Tr/Tf | 20% to 80% | | | 0.6 | ns | |
| Logic "1" Level | Voh | | Vcc-0.96 | | Vcc-0.81 | V | |
| Logic "0" Level | Vol | | Vcc-1.85 | | Vcc-1.65 | V | |
| Start up time | | | | 2 | 10 | ms | |
| Jitter (RMS) | | 12KHz to 20MHz | | 0.2 | 0.5 | ps | |
| SSB Phase Noise | | 100Hz 1KHz 10KHz 100KHz | | -93 -118 -142 -145 | | dBc/Hz | @ 622.08MHz |
| Subharmonics | | | | -50 | -40 | dBc | |
| Enable / Disable Function | Input HIGH (>2.5V): DISABLED Input LOW (<0.5V) or floating: ACTIVE | | | | | | |
| Enable / Disable Time | Te/Td | | | | 100 | ns | |

How to Order



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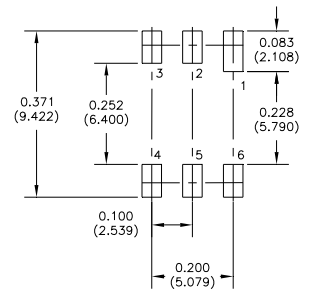
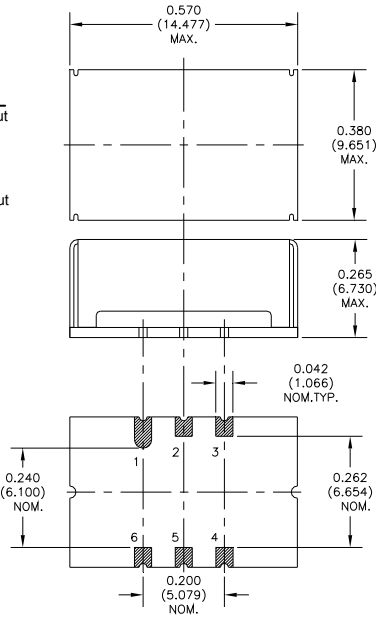
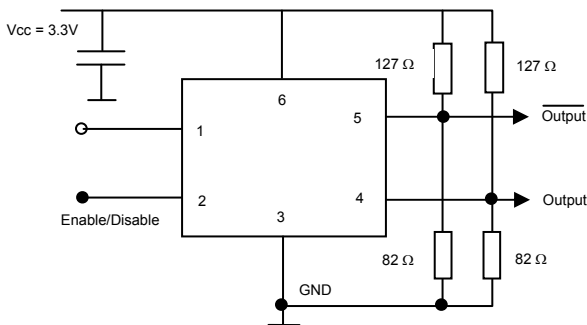


Absolute Maximum Ratings

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|---------------------------|-----------------|-----------|------|-----|-----|------|------|
| Supply Break Down Voltage | V _{cc} | | -0.5 | | 6.0 | V | |
| Storage Temperature | T _s | | -55 | | +85 | °C | |
| Control Voltage | V _c | | -1 | | 7 | V | |

Environmental and Mechanical

| Parameter | Specification |
|----------------------|--------------------------------------------------------------------------|
| Mechanical Shock | Per MIL-STD-202, Method 213, Condition E |
| Thermal Shock | Per MIL-STD-883, Method 1011, Condition A |
| Vibration | Per MIL-STD-883, Method 2007, Condition A |
| Soldering Conditions | 260°C for 10s max |
| Hermetic Seal | Leak rate less than 5x10 ⁻⁸ atm.cc/s of helium (crystal only) |



| Pin # | Connection |
|-------|-----------------|
| 1 | V _c |
| 2 | Enable |
| 3 | Case, GND |
| 4 | Output |
| 5 | Output |
| 6 | V _{cc} |

