

CFPV-7 Low Power Miniature SMD VCXO

ISSUE 4 ; 4 JULY 2006

Delivery Options

- Please contact our sales office for current leadtimes

Description

- Voltage controlled crystal oscillator (VCXO) with crystal packed into its own holder
- Grounded crystal enclosure acts like a shield and provides low EMI
- Non PLL based design ensures low jitter
- 3.3V or 5V supply voltage
- CMOS, PECL, SINE or LVDS Output

RoHS Compliance

- Parts with the suffix 'LF' on the part number are fully compliant with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
Note. The RoHS compliant parts are suitable for assembly using both Lead-free solders and Tin / Lead solders.

Standard Frequencies

- 8.192, 20.0, 24.576, 32.768, 34.368, 38.88, 39.3216, 44.736, 50.0, 51.84, 52.0, 61.44, 63.8976, 77.76, 80.0, 82.3341, 140.0, 155.52MHz

Frequency Range

- 2.0 to 170MHz

Package Outline

- 4-pad (style 578) or 6-pad (style 579) Industry standard, Glass epoxy laminate (FR4) base, end-termination finish: gold (<0.1 μ m) on nickel (3-5 μ m) and high temperature plastic cover

Supply Current

- 3.3V \pm 5% (option)
- 5.0V \pm 5% (option)

Supply Voltage

- Ranging from typ. 10mA @ 2MHz/3.3V CMOS to typ. 80mA @ 170MHz/5V PECL, at nominal load. Contact sales office for specific values

CMOS Output (option)

- Load: 15pF nom.
- Duty Cycle @ 50%: 40/60%
- Rise & Fall Time (20 to 80%): \leq 2ns typ.
- VoH: \geq 90% Vs

- VoL: \leq 10% Vs
- Tri-state control (6 pad package only)
Control Input Logic '0' (\leq 30% Vs) will put the output in the tri-state mode
Control Input Logic '1' (\geq 70% Vs) or left unconnected will enable the output
'Active High' is standard but a version with 'Active Low' can be supplied on request

Single Ended or Differential PECL Output (option)

- Load: 50 Ω to Vs-2V
- Duty Cycle @ 50%: 40/60%
- Rise & Fall Time (20%-80%): \leq 0.5ns typ.
- VoH: 2.4V typ. @Vs=3.3V
- VoL: 1.5V typ. @Vs=3.3V
- Tri-state control
The output is enabled if tri-state control is:-
a) Left open circuit
b) Connected to GND
c) Connected to a voltage <(Vs-1.65V) = PECL logic low
The output is disabled if tri-state control is:-
a) Connected to Vs
b) Connected to a voltage >(Vs-0.96V) = PECL logic high
When disabled, pad 5 goes low and pad 4 goes high.
The tri-state control pad has an internal 75k Ω pull down to GND resistor

Sine Output (option)

- Load: 50 Ω
- Level: can be specified up to +8dBm
- Harmonics: \leq -20dBc

LVDS Output (option)

- Load: 100 Ω differential +10pF each output to GND
- Diff. output voltage: \pm 250mV min. \pm 400mV max.
- Duty Cycle @ 50%: 40/60%
- Rise & Fall Time (20 to 80%): \leq 0.5ns typ.
- Tri-state control (6 pad package only)
Control Input Logic '0' (0.8V) will put the output in tri-state mode
Control Logic '1' (>2.0V) will enable the output

Frequency Stability

- All causes stability (including calibration, temperature, supply, load, reflow and ageing) can be specified down to \pm 30ppm, 0 to 70°C or \pm 50ppm, -40 to 85°C. Please specify operating condition; Temperature Range, Lifetime, etc.



Control Voltage Range

- 1.65V \pm 1.35V ($V_s = 3.3V$)
- 2.5V \pm 2.0V ($V_s = 5.0V$)

Frequency Pulling

- $\geq \pm 60$ ppm standard, other values on request
- Positive Transfer Function
- Modulation Bandwidth ≥ 10 kHz
- Input Impedance $\geq 100k\Omega$
- Linearity (MIL-PRF-55310) $\leq \pm 10\%$

Jitter (rms, typ. @ 155.52 MHz)

- 12kHz to 5MHz 0.18ps
- 12kHz to 20MHz 0.36ps
- 12kHz to 80MHz 0.72ps

Phase Noise (typ. @ 155.52MHz)

- 100Hz -75dBc/Hz
- 1kHz -105dBc/Hz
- 10kHz -130dBc/Hz
- ≥ 100 Hz -145dBc/Hz

Marking

- Model number
- Frequency

Environmental Specification

- Storage: -40 to 100°C
- Vibration: IEC 60068-2-6 Test Fc Procedure B4, 10 - 60Hz 0.75mm displacement, 60 - 500Hz, 98.1m/s² (10gn) acceleration, 30 minutes in each of three mutually perpendicular planes at 1 octave per minute
- Shock: IEC 60068-2-27 Test Ea, 981m/s² (100gn) acceleration for 6ms duration, 3 shocks in each direction along three mutually perpendicular axes
- Soldering: SMD product, suitable for Pb-free convection reflow soldering. Compliant with JDEC standard J-STD-020, Level 1
- Sealing: Non hermetic package
- Marking: Label resistant to all common solvents

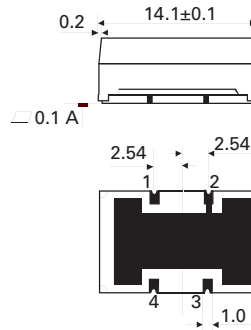
Minimum Order Information Required

- Frequency
- Supply voltage

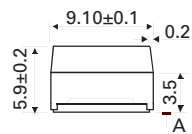
- Output type
- All causes stability
- Temperature range
- Lifetime
- Package style
- RoHS compliance
- Other requirements

Outline in mm - (4 pad) (Style 578)

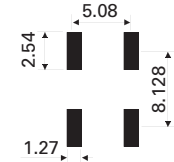
Tri-state / Enable Control and Differential Output are not available in this package.



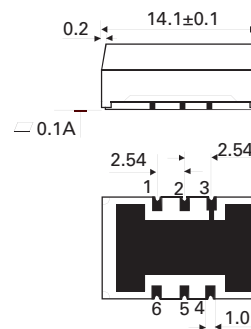
- Pad Connections
- Voltage Control
 - GND
 - Output
 - +Vs



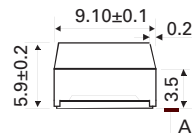
Solder pad layout



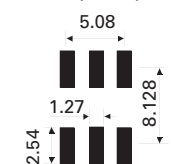
Outline in mm - (6 pad) (Style 579)



- Pad Connections
- Voltage Control
 - Enable/Tri-state control
 - GND
 - Output 1
 - Output 2
 - +Vs



Solder pad layout



SURFACE MOUNT
VCOs