

ACT7VC14 - VCXO

The ACT7VC14 family is a range of cost competitive VCXOs housed in A 14 pin through hole package. It offers good reliability at a low cost across a wide range of frequencies. The devices can be tuned between $\pm 100\text{ppm}$ & $\pm 250\text{ppm}$ by varying the voltage on pin one.. Applications include Communications, Instrumentation PL circuits, Consumer applications and many more. In addition to standard specifications it is also possible to supply some "custom" specifications (Please enquire).

Compatible with Eu Directive
2002/EC - RoHS



Specification

| Parameter | Symbol | Specification | Condition |
|-----------------------|--------|--|-----------------|
| Frequency Range | fo | 1.00 ~ 160.0 MHz | Please specify |
| Temp Operating Range | Topr | -0° ~ +70°C & -20 ~70°C | Please specify |
| Storage Temp Range | Tstg | -40 ~ 100°C | |
| Frequency Stability | | $\pm 5\text{ppm} \sim \pm 40\text{ppm}$ | See table one |
| Aging | Fa | $\pm 5\text{ppm}$ 1st year (Then 1ppm p/yr typical, thereafter | |
| Supply Voltage | Vdd | 3.3VDC $\pm 5\%$ or 5.0VDC $\pm 5\%$ | Please specify |
| Supply Current | Idd | <50MHz 25mA max <90MHz 40mA max <125MHz 60mA max <160MHz 80mA max | |
| Duty Cycle | Tw/t | 45/55% | (Square Wave) |
| Rise & Fall Time | Tr/Tf | <6ns | (Square Wave) |
| Start up time | | 5ms typical, 10ms max | See table two |
| Output Load | N/CL | 5 TTL 02 15 STTL 15pf max | |
| Pulling capability | | $\pm 100\text{ppm}$ min ~ $\pm 250\text{ppm}$ | See table one |
| Slope polarity | | Positive or negative | Please specify |
| Control voltage range | Vc | 0.5VDC $\pm 4.5\text{V}$ | |
| Centre Frequency | | +2.5VDC $\pm .25\text{VDC}$ | |
| Linearity | | 10% max | |
| Input impedance | | 50K Ω min | |
| Modulation bandwidth | | <15kHz | |
| Output waveform | | ACMOS, HCMOS, TTL, Clipped sine & Sine | Please specify |

For package details / options, please see following pages.

Please note that all parameters can not necessarily be specified in the same device

Customer to specify : Frequency, Supply Voltage, Polarity & Package Number / Tri-state

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For quotations or further information please contact us at:

3 The Business Centre, Molly Millars Lane, Wokingham, Berkshire, RG41 2EY, UK
<http://www.actcrystals.com>

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TABLE ONE - PULLING RANGE & TEMPERATURE FREQUENCY STABILITY (TFC)

| Temperature | Pull Range | TFC | Temperature | Pull Range | TFC |
|-------------|--------------|--------|-------------|--------------|--------|
| 0 - +70°C | ±100PPM Min. | ± 5PPM | 0 - +70°C | ±250PPM Min. | ±30PPM |
| 0 - +70°C | ±100PPM Min. | ±10PPM | -20 - +70°C | ±100PPM Min. | ±10PPM |
| 0 - +70°C | ±100PPM Min. | ±20PPM | -20 - +70°C | ±100PPM Min. | ±20PPM |
| 0 - +70°C | ±100PPM Min. | ±30PPM | -20 - +70°C | ±100PPM Min. | ±30PPM |
| 0 - +70°C | ±150PPM Min. | ± 5PPM | -20 - +70°C | ±150PPM Min. | ±10PPM |
| 0 - +70°C | ±150PPM Min. | ±10PPM | -20 - +70°C | ±150PPM Min. | ±20PPM |
| 0 - +70°C | ±150PPM Min. | ±20PPM | -20 - +70°C | ±150PPM Min. | ±30PPM |
| 0 - +70°C | ±150PPM Min. | ±30PPM | -20 - +70°C | ±200PPM Min. | ±20PPM |
| 0 - +70°C | ±200PPM Min. | ±10PPM | -20 - +70°C | ±200PPM Min. | ±30PPM |
| 0 - +70°C | ±200PPM Min. | ±20PPM | -20 - +70°C | ±200PPM Min. | ±40PPM |
| 0 - +70°C | ±200PPM Min. | ±30PPM | -20 - +70°C | ±250PPM Min. | ±20PPM |
| 0 - +70°C | ±250PPM Min. | ±10PPM | -20 - +70°C | ±250PPM Min. | ±30PPM |
| 0 - +70°C | ±250PPM Min. | ±20PPM | -20 - +70°C | ±250PPM Min. | ±40PPM |

TABLE TWO - OUTPUT WAVEFORM AND LOAD CHARACTERISTICS

| Output Waveform | Frequency Range | Oscillation State | Output Characteristics |
|-------------------|--------------------------------|------------------------------|--|
| Clipped Sine Wave | 8MHz - 40MHz 40MHz - 160MHz | F: Fundamental Q Overtone | Load: 10kΩ /10pF Output level: >1Vp-p |
| TTL | 1MHz - 40MHz 40MHz - 160MHz | F: Fundamental Q Overtone | Load: Max. 10 low power consumption TTL gates "1" level: >+2.4VDC; "0" level: <+0.2VDC Duty cycle: 45/55 Rise/fall time: <6ns |
| HCMOS | 1MHz - 40MHz 40MHz - 160MHz | F: Fundamental Q Overtone | Load: Max. 10 low power consumption TTL/HCMOS "1" level: >+4.5VDC; "0" level: <+0.5VDC Duty cycle: 45/55 Rise/fall time: <6ns |
| ACMOS | 1MHz - 40MHz 40MHz - 160MHz | F: Fundamental Q Overtone | Load: Max. 10 low power consumption TTL/ACMOS "1" level: >+4.5VDC; "0" level: <+0.5VDC Duty cycle: 45/55 Rise/fall time: <6ns |
| Sine Wave | 8MHz - 40MHz 40MHz - 160MHz | F: Fundamental Q Overtone | Load: Nominal value 50Ω Output level: >2dBm Harmonic Attenuation: <-25dB Noise Attenuation: <-75dB |

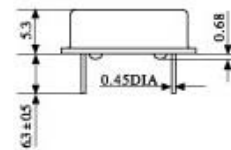
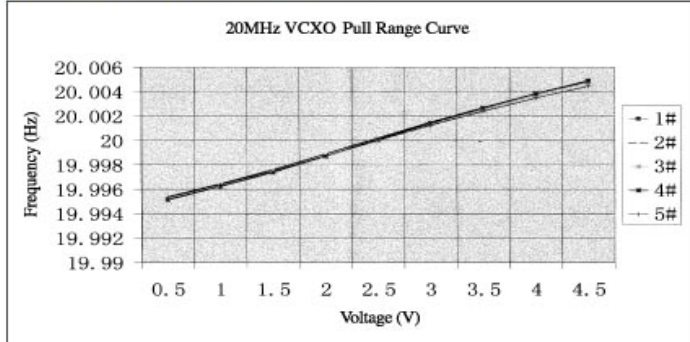
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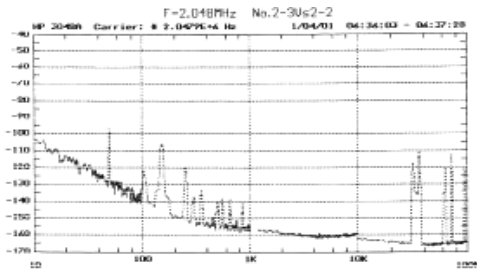
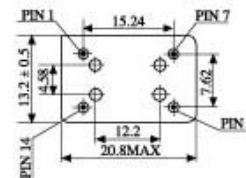
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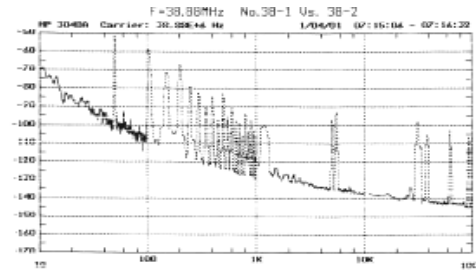
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PIN FUNCTION:
 PIN 1 – Control Voltage
 PIN 7 – GND/Case
 PIN 8 – Output
 PIN 14 – Power Supply



2.048MHz VCXO Phase Noise Curve



38.888MHz VCXO Phase Noise Curve

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