

- Frequency range 0.625MHz to 50.0MHz
- CMOS/TTL Output
- Supply Voltage 5.0 V or 3.3 VDC
- Integrated Phase Jitter 1ps typical

## DESCRIPTION

G42 VCXOs, are packaged in a miniature 11.4mm x 9.6mm x 2.5mm 4 pad SMD package. Typical phase jitter for G series VCXOs is <1ps, output CMOS/TTL. G series VCXOs use fundamental mode crystal oscillators. Applications include phase lock loop, SONET/ATM, set-top boxes, MPEG, audio/video modulation, video game consoles and HDTV.

## SPECIFICATION

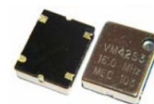
|                                     |                                                                                             |
|-------------------------------------|---------------------------------------------------------------------------------------------|
| Frequency Range                     |                                                                                             |
| Vdd = +3.3VDC:                      | 0.625MHz to 50.0MHz                                                                         |
| Vdd = +5.0VDC:                      | 1.0MHz to 50.0MHz                                                                           |
| Supply Voltage:                     | +3.3 VDC $\pm 5\%$ or +5.0VDC $\pm 5\%$                                                     |
| Output Logic:                       | TTL/HCMOS                                                                                   |
| Integrated Phase Jitter:            | 1.0ps maximum 12kHz to 20MHz                                                                |
| Period Jitter RMS:                  | 2.0ps typical                                                                               |
| Period Jitter Peak to Peak:         | 14ps maximum                                                                                |
| Phase Noise:                        | See table below                                                                             |
| Initial Frequency Accuracy          |                                                                                             |
| Tune to the nominal frequency with: |                                                                                             |
| +3.3VDC:                            | Vc = 1.65V $\pm 0.2$ V                                                                      |
| +5.0 VDC:                           | Vc = 2.5V $\pm 0.2$ V                                                                       |
| Output Voltage HIGH (1):            | 90% Vdd minimum                                                                             |
| Output Voltage LOW (0):             | 10% Vdd maximum                                                                             |
| Control Voltage Centre              |                                                                                             |
| +3.3VDC:                            | 1.65V                                                                                       |
| +5.0VDC:                            | 2.5V                                                                                        |
| Control Voltage Range               |                                                                                             |
| +3.3VDC:                            | 0.3V to 3.0V                                                                                |
| +5.0VDC:                            | 0.5V to 4.5V                                                                                |
| Pulling Range                       |                                                                                             |
| +3.3VDC                             | $\pm 80$ ppm to $\pm 120$ ppm (standard)                                                    |
| +5.0VDC:                            | $\pm 80$ ppm to $\pm 150$ ppm<br>( $\pm 200$ ppm available)                                 |
| Temperature Stability:              | See table                                                                                   |
| Output Load:                        | CMOS = 15pF, TTL = 2 gates                                                                  |
| Start-up Time:                      | 10ms maximum, 5ms typical                                                                   |
| Duty Cycle:                         | 50% $\pm 5\%$ measured at 50% Vdd                                                           |
| Rise/Fall Times:                    | 0.7ns typical (15pF load)                                                                   |
| Current Consumption:                | 10 to 45mA, frequency dependent                                                             |
| Linearity:                          | 10% maximum, 6% typical                                                                     |
| Modulation Bandwidth:               | 10kHz minimum                                                                               |
| Input Impedance:                    | 1 M $\Omega$ minimum                                                                        |
| Slope Polarity:                     | Monotonic and Positive. (An increase of control voltage always increases output frequency.) |
| Storage Temperature:                | -50° to +100°C                                                                              |
| Ageing:                             | $\pm 5$ ppm per year maximum                                                                |
| RoHS Status:                        | Fully compliant                                                                             |

## FREQUENCY STABILITY

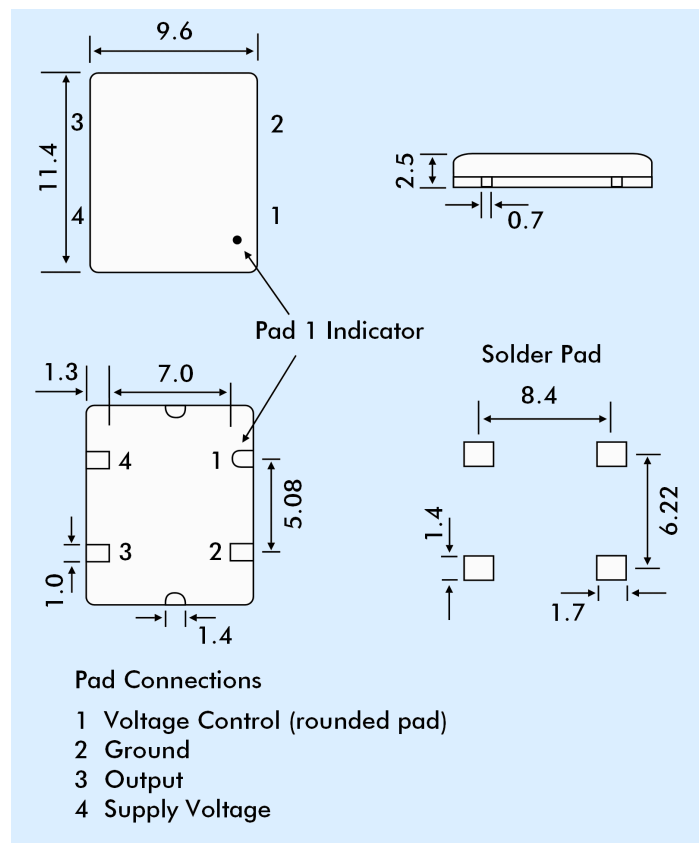
| Stability Code | Stability $\pm$ ppm | Temp. Range |
|----------------|---------------------|-------------|
| A              | 25                  | 0°~+70°C    |
| B              | 50                  | 0°~+70°C    |
| C              | 100                 | 0°~+70°C    |
| D              | 25                  | -40°~+85°C  |
| E              | 50                  | -40°~+85°C  |
| F              | 100                 | -40°~+85°C  |

If non-standard frequency stability is required  
Use 'I' followed by stability, i.e. I20 for  $\pm 20$ ppm

## 11.4 x 9.6 x 2.5mm 4 pad SMD



## OUTLINE & DIMENSIONS



## PHASE NOISE

| Offset | Frequency 27.0MHz |
|--------|-------------------|
| 10Hz   | -70dBc/Hz         |
| 100Hz  | -105dBc/Hz        |
| 1kHz   | -132dBc/Hz        |
| 10kHz  | -142dBc/Hz        |
| 1MHz   | -150dBc/Hz        |

## PART NUMBERING

