

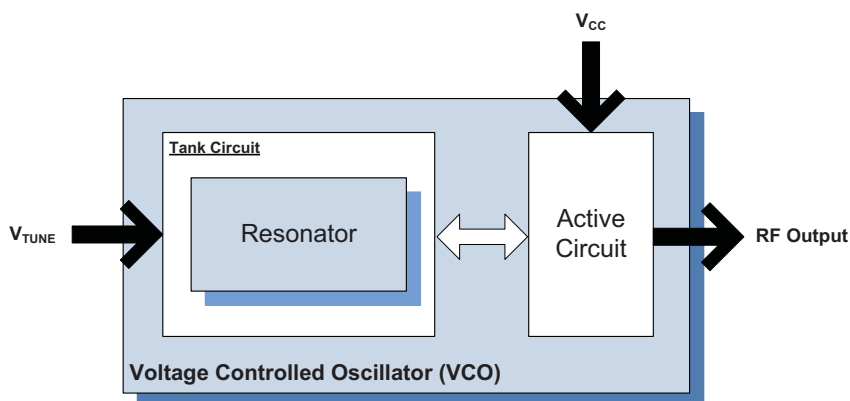


### Features

- Ultra-low Phase Noise/Low Current
- Frequency: 50MHz to 60MHz
- Resonator: Aircoil
- PCB: Rogers
- Package Size: 12.7mm x 12.7mm x 5.59mm (0.5in x 0.5in x 0.22in)

### Applications

- IF Conversion Applications
- Low Phase Noise Agile Clock Applications
- Low Phase Noise Applications



Functional Block Diagram

### Product Description

This series of VCO modules offers an ultra-low noise VCO which includes an internal buffer amplifier for high performance IF conversion.

### Ordering Information

UMJ-123-D14-G      Contact us at 1-480-756-6070

### Optimum Technology Matching® Applied

- |                                      |                                      |                                            |                                    |
|--------------------------------------|--------------------------------------|--------------------------------------------|------------------------------------|
| <input type="checkbox"/> GaAs HBT    | <input type="checkbox"/> SiGe BiCMOS | <input type="checkbox"/> GaAs pHEMT        | <input type="checkbox"/> GaN HEMT  |
| <input type="checkbox"/> GaAs MESFET | <input type="checkbox"/> Si BiCMOS   | <input type="checkbox"/> Si CMOS           | <input type="checkbox"/> BiFET HBT |
| <input type="checkbox"/> InGaP HBT   | <input type="checkbox"/> SiGe HBT    | <input checked="" type="checkbox"/> Si BJT | <input type="checkbox"/> LDMOS     |

## Absolute Maximum Ratings

| Parameter                        | Rating      | Unit |
|----------------------------------|-------------|------|
| Operating Ambient Temperature[1] | -40 to +85  | °C   |
| Storage Temperature              | -55 to +125 | °C   |

[1] Frequency drift: 0.1MHz typical (either extreme)



**Caution!** ESD sensitive device.

Exceeding any one or a combination of the Absolute Maximum Rating conditions may cause permanent damage to the device. Extended application of Absolute Maximum Rating conditions to the device may reduce device reliability. Specified typical performance or functional operation of the device under Absolute Maximum Rating conditions is not implied.

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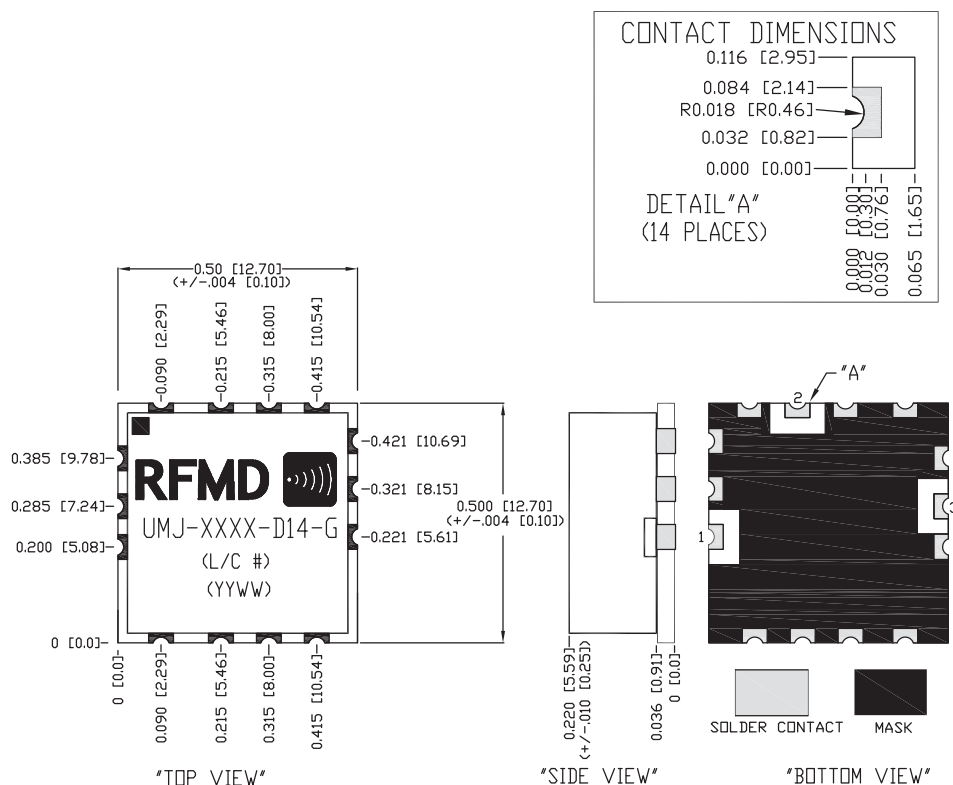


RoHS (Restriction of Hazardous Substances): Compliant per EU Directive 2002/95/EC.

| Parameter               | Specification |      |      | Unit            | Condition            |
|-------------------------|---------------|------|------|-----------------|----------------------|
|                         | Min.          | Typ. | Max. |                 |                      |
| Overall                 |               |      |      |                 |                      |
| Frequency Range         | 50            |      | 60   | MHz             |                      |
| Tuning Voltage          | 1             |      | 4    | V <sub>DC</sub> |                      |
| Tuning Sensitivity      |               | 4.5  |      | MHz/V           |                      |
| Output Power            | 7             | 9    | 11   | dBm             |                      |
|                         | 7             |      |      | dBm             | At V <sub>T</sub> =0 |
| Output Phase Noise      |               | -100 | -95  | dBc/ Hz         | 1 kHz                |
|                         |               | -124 | -119 | dBc/ Hz         | 10kHz                |
|                         |               | -144 | -139 | dBc/ Hz         | 100 kHz              |
|                         |               | -164 | -155 | dBc/ Hz         | 1000 kHz             |
| Second Harmonic         |               | -25  | -15  | dBc             |                      |
| Frequency Pulling       |               | 0.2  | 0.4  | MHz p-p         | At 12dBr, all phases |
| Tuning Port Capacitance |               | 1000 |      | pF              |                      |
| Modulation Bandwidth    |               | 100  |      | kHz             | 3dB BW               |
| Frequency Pushing       |               | 0.1  | 0.3  | MHz/V           |                      |
| Power Supply            |               |      |      |                 |                      |
| Operating Voltage       |               | 5    |      | V               |                      |
| Supply Current          |               | 15   |      | mA              |                      |

## Package Drawing & Pin Outs

12.7mm x 12.7mm x 5.59mm (0.5in x 0.5in x 0.22in)



| CONTACT ASSIGNMENTS:          |  |
|-------------------------------|--|
| 1: RF OUT                     |  |
| 2: SUPPLY INPUT               |  |
| 3: TUNING VOLTAGE INPUT       |  |
| ALL OTHER CONTACTS ARE GROUND |  |