

# RFMD®

## MMIC VCO Series

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The RFMD® RFVC18xx series is a family of voltage-controlled oscillators (VCO) with integrated RF output buffer amplifiers based on GaAs InGaP MMIC technology. The monolithic structure of the VCO ensures excellent temperature, shock, and vibration performance. With both broadband and narrowband options available these parts are suited for applications in the 4 to 15GHz frequency range. Typical applications include military, satellite communications, test instrumentation, industrial and medical, aerospace, CATV, and Point-to-Point radio. All products in the family operate from a single positive supply voltage and deliver low phase noise performance with minimum power consumption. Each VCO comes in a compact, RoHS compliant QFN package.

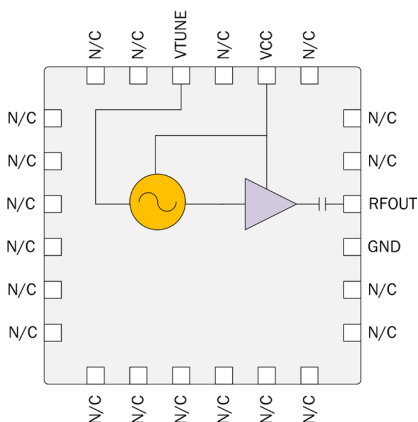
### BROADBAND MMIC VCO SPECIFICATIONS

| Freq Range (Min) (MHz) | Freq Range (Max) (MHz) | V <sub>TUNE</sub> (V) | Phase Noise (dBc/Hz at 10kHz) | Phase Noise (dBc/Hz at 100kHz) | V <sub>CC</sub> (V) | I <sub>D</sub> (mA) | P <sub>OUT</sub> (dBm) | Part Number |
|------------------------|------------------------|-----------------------|-------------------------------|--------------------------------|---------------------|---------------------|------------------------|-------------|
| 8000                   | 12000                  | 0.0 to 13.0           | -66                           | -93                            | 5.0                 | 55                  | 4.0                    | RFVC1800    |
| 5000                   | 10000                  | 0.0 to 18.0           | -72                           | -96                            | 5.0                 | 52                  | 3.0                    | RFVC1801    |
| 4000                   | 8000                   | 0.0 to 18.0           | -74                           | -99                            | 5.0                 | 53                  | 4.0                    | RFVC1802    |
| 6000                   | 9000                   | 0.0 to 15.0           | -73                           | -97                            | 5.0                 | 53                  | 3.5                    | RFVC1803    |

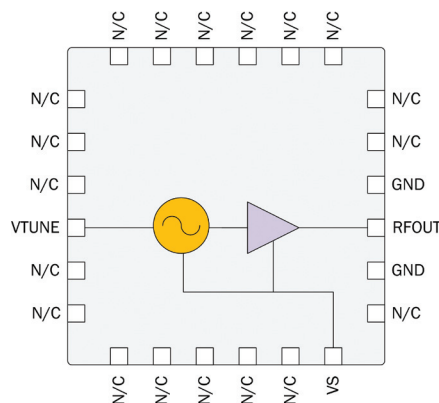
### NARROWBAND MMIC VCO SPECIFICATIONS

| Freq Range (Min) (MHz) | Freq Range (Max) (MHz) | V <sub>TUNE</sub> (V) | Phase Noise (dBc/Hz at 10kHz) | Phase Noise (dBc/Hz at 100kHz) | V <sub>CC</sub> (V) | I <sub>D</sub> (mA) | P <sub>OUT</sub> (dBm) | Part Number |
|------------------------|------------------------|-----------------------|-------------------------------|--------------------------------|---------------------|---------------------|------------------------|-------------|
| 4450                   | 5000                   | 0.0 to 12.0           | -84                           | -108                           | 3.0                 | 43                  | 8.0                    | RFVC1821    |
| 5000                   | 5500                   | 0.0 to 12.0           | -80                           | -103                           | 3.0                 | 45                  | 9.0                    | RFVC1822    |
| 6100                   | 6750                   | 0.0 to 10.0           | -76                           | -101                           | 3.0                 | 37                  | 8.0                    | RFVC1823    |
| 7200                   | 8000                   | 0.0 to 12.0           | -80                           | -106                           | 3.0                 | 65                  | 12.0                   | RFVC1824    |
| 7800                   | 8700                   | 0.0 to 12.0           | -80                           | -107                           | 3.0                 | 67                  | 11.0                   | RFVC1825    |
| 6800                   | 7400                   | 0.0 to 12.0           | -80                           | -103                           | 3.0                 | 70                  | 12.0                   | RFVC1829    |

Narrowband MMIC VCO Diagram



Broadband MMIC VCO Diagram



### FEATURES

- Broadband and narrowband frequency options
- No external resonator needed
- Integrated buffer amplifier
- Single supply voltage operation
- Low power consumption
- Excellent phase noise performance

NARROWBAND MMIC VCO WITH INTEGRATED DIVIDERS SPECIFICATIONS

| Freq Range<br>(Min) (MHz) | Freq Range<br>(Max) (MHz) | V <sub>TUNE</sub><br>(V) | Phase Noise<br>(dBc/Hz<br>at 10kHz) | Phase Noise<br>(dBc/Hz<br>at 100kHz) | V <sub>CC</sub><br>(V) | P <sub>OUT</sub><br>(dBm) | Part<br>Number |
|---------------------------|---------------------------|--------------------------|-------------------------------------|--------------------------------------|------------------------|---------------------------|----------------|
| 7300                      | 8200                      | 2.0 to 12.0              | -90                                 | -114                                 | 5.0                    | 10.0                      | RFVC1831       |
| 7800                      | 8800                      | 2.0 to 12.0              | -90                                 | -114                                 | 5.0                    | 10.0                      | RFVC1832       |
| 8450                      | 9550                      | 2.0 to 12.0              | -89                                 | -112                                 | 5.0                    | 9.0                       | RFVC1833       |
| 9000                      | 10200                     | 2.0 to 12.0              | -90                                 | -114                                 | 5.0                    | 8.0                       | RFVC1834       |
| 9600                      | 10800                     | 2.0 to 12.0              | -90                                 | -114                                 | 5.0                    | 7.0                       | RFVC1835       |
| 10400                     | 11600                     | 2.0 to 12.0              | -88                                 | -113                                 | 5.0                    | 7.0                       | RFVC1836       |
| 11100                     | 12500                     | 2.0 to 12.0              | -88                                 | -113                                 | 5.0                    | 8.0                       | RFVC1837       |
| 11500                     | 12800                     | 2.0 to 12.0              | -87                                 | -113                                 | 5.0                    | 8.0                       | RFVC1838       |
| 12400                     | 13900                     | 2.0 to 12.0              | -87                                 | -112                                 | 5.0                    | 8.0                       | RFVC1839       |
| 13600                     | 14900                     | 2.0 to 12.0              | -84                                 | -110                                 | 5.0                    | 7.0                       | RFVC1840       |
| 9300                      | 10700                     | 2.0 to 12.0              | -90                                 | -114                                 | 5.0                    | 8.0                       | RFVC1842       |
| 9800                      | 11300                     | 2.0 to 12.0              | -90                                 | -114                                 | 5.0                    | 7.0                       | RFVC1843       |
| 10500                     | 12100                     | 2.0 to 12.0              | -88                                 | -113                                 | 5.0                    | 7.0                       | RFVC1844       |

