

## SMD Voltage Controlled Oscillator

### Frequency

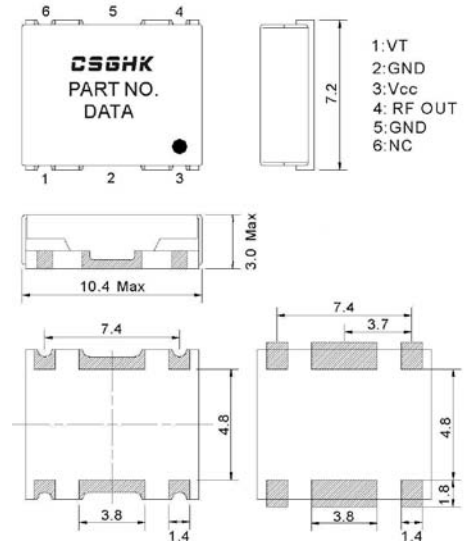
### VP928M

#### Features

- Miniature Size
- Surface Mount Package
- Electrically Shielded
- Low Phase Noise
- Highly Linear Tuning

#### Description

The VP928M is a fundamental single ended oscillator designed for use in cost sensitive wireless and telemetry applications. The device has been optimized by careful selection of the bipolar transistor and varactor diode for low phase noise and high linearity tuning characteristics.



Electrical Specifications,  $T_A = +25^{\circ}\text{C}$ ,  $V_{CC} = +5\text{V}$  (unless otherwise stated)

| Parameter                  | Test Conditions | Units              | Min. | Typ.  | Max. |
|----------------------------|-----------------|--------------------|------|-------|------|
| Frequency Rangs            |                 | MHz                |      | 928.5 |      |
| Tuning Voltage (V)         |                 | V                  | 0.5  |       | 4.5  |
| RF Output Power            |                 | dBm                | 0.0  |       | 4.0  |
| Supply Voltage (VCC)       |                 | V                  | 4.75 |       | 5.25 |
| Supply Current (Icc)       |                 | mA                 |      | 20    | 22   |
| Phase Noise :              |                 |                    |      |       |      |
|                            | @10kHz Offset:  | dBc/Hz             |      | -113  | -110 |
|                            | @100kHz Offset: | dBc/Hz             |      | -133  | -130 |
| Average Tuning Sensitivity |                 | MHz/V              |      | 7.6   |      |
| Harmonic Outputs           |                 | dBc                |      | -15   | -10  |
| OperatingTemperature Range |                 | $^{\circ}\text{C}$ | -40  |       | +85  |
| Tune Input Capacitance     |                 | PF                 |      | 47    |      |

#### Comments

All specifications apply with a 50 ohm load impedance.

**SMD Voltage Controlled Oscillator****Frequency****VP928M**

| Tuning Voltage (v) | Output Frequency (MHz) | Tuning Sensitivity (MHz/V) | Output Power (dBm) | Harmonic Suppression (dBc) |
|--------------------|------------------------|----------------------------|--------------------|----------------------------|
| <b>-40℃</b>        |                        |                            |                    |                            |
| 0.5                | <b>917.6</b>           | -                          | <b>2.2</b>         | <b>-17.4</b>               |
| 1.0                | <b>921.1</b>           | -                          | <b>2.1</b>         | <b>-17.6</b>               |
| 1.5                | <b>924.7</b>           | -                          | <b>2.1</b>         | <b>-17.6</b>               |
| 2.0                | <b>928.3</b>           | -                          | <b>1.9</b>         | <b>-17.4</b>               |
| 2.5                | <b>931.9</b>           | -                          | <b>1.9</b>         | <b>-17.6</b>               |
| 3.0                | <b>935.6</b>           | -                          | <b>1.8</b>         | <b>-17.7</b>               |
| 3.5                | <b>939.7</b>           | -                          | <b>1.8</b>         | <b>-17.8</b>               |
| 4.0                | <b>944.1</b>           | -                          | <b>1.7</b>         | <b>-18.0</b>               |
| 4.5                | <b>948.9</b>           | -                          | <b>1.6</b>         | <b>-17.9</b>               |
| <b>+25℃</b>        |                        |                            |                    |                            |
| 0.5                | <b>915.0</b>           | -                          | <b>1.9</b>         | <b>-17.6</b>               |
| 1.0                | <b>918.9</b>           | -                          | <b>1.9</b>         | <b>-17.8</b>               |
| 1.5                | <b>922.1</b>           | -                          | <b>1.9</b>         | <b>-17.8</b>               |
| 2.0                | <b>925.6</b>           | -                          | <b>1.8</b>         | <b>-17.6</b>               |
| 2.5                | <b>929.1</b>           | -                          | <b>1.8</b>         | <b>-17.6</b>               |
| 3.0                | <b>933.0</b>           | -                          | <b>1.7</b>         | <b>-17.7</b>               |
| 3.5                | <b>936.9</b>           | -                          | <b>1.7</b>         | <b>-17.7</b>               |
| 4.0                | <b>941.0</b>           | -                          | <b>1.6</b>         | <b>-17.7</b>               |
| 4.5                | <b>945.6</b>           | -                          | <b>1.6</b>         | <b>-17.7</b>               |
| <b>+85℃</b>        |                        |                            |                    |                            |
| 0.5                | <b>912.6</b>           | -                          | <b>1.5</b>         | <b>-17.7</b>               |
| 1.0                | <b>916.3</b>           | -                          | <b>1.6</b>         | <b>-18.2</b>               |
| 1.5                | <b>919.7</b>           | -                          | <b>1.5</b>         | <b>-18.1</b>               |
| 2.0                | <b>923.1</b>           | -                          | <b>1.5</b>         | <b>-18.0</b>               |
| 2.5                | <b>926.6</b>           | -                          | <b>1.5</b>         | <b>-18.0</b>               |
| 3.0                | <b>930.1</b>           | -                          | <b>1.5</b>         | <b>-17.9</b>               |
| 3.5                | <b>934.0</b>           | -                          | <b>1.5</b>         | <b>-18.0</b>               |
| 4.0                | <b>938.1</b>           | -                          | <b>1.5</b>         | <b>-18.1</b>               |
| 4.5                | <b>942.6</b>           | -                          | <b>1.5</b>         | <b>-18.1</b>               |