

## SURFACE MOUNT MODEL VOLTAGE CONTROLLED OSCILLATOR

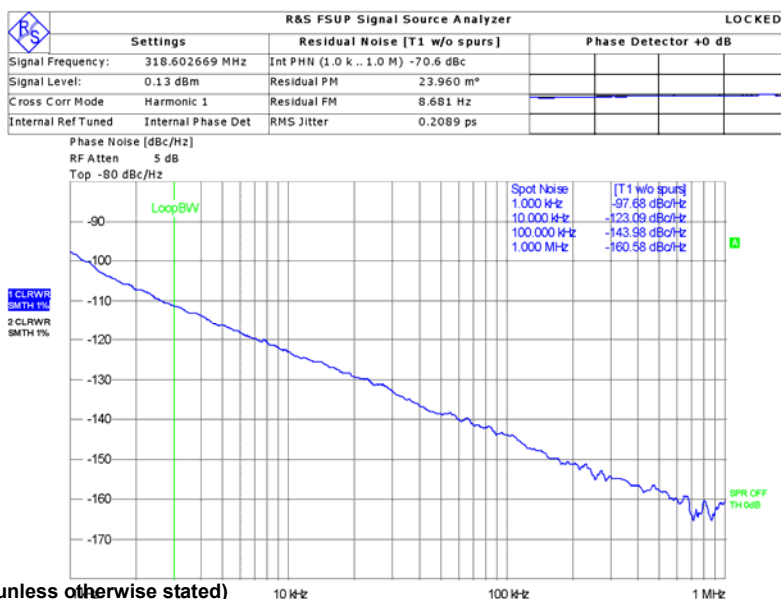
Frequency 308.6-328.6MHz

VT328M



### FEATURES

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



Electrical Specifications,  $T_A = +25^\circ\text{C}$ ,  $V_{CC} = +5.0\text{V}$  (unless otherwise stated)

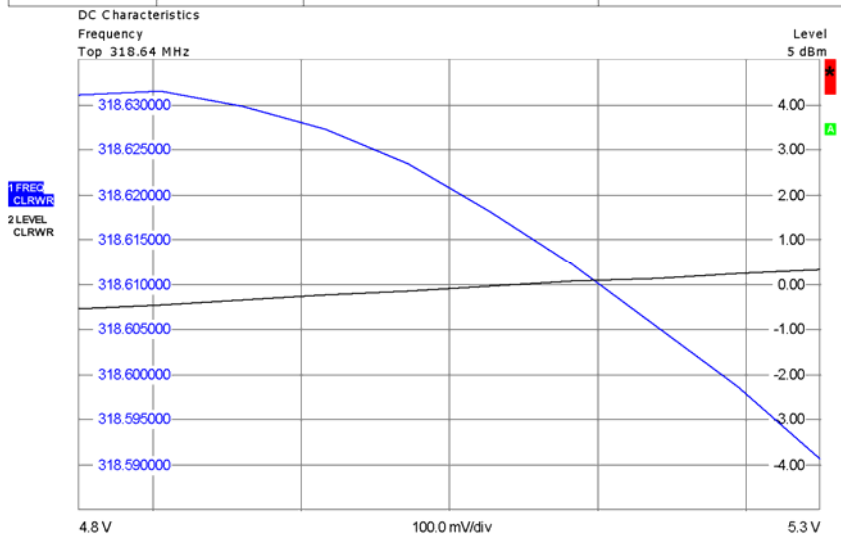
| Parameter                  | Test Conditions        | Min   | Typ  | Max   | Units            |
|----------------------------|------------------------|-------|------|-------|------------------|
| Frequency Rangs            |                        | 308.6 |      | 328.6 | MHz              |
| Tuning Voltage (V)         |                        | 0.5   |      | 4.5   | V                |
| RF Output Power            | 308.6-328.6MHz         | -2.0  |      | 2.0   | dBm              |
| Supply Voltage (Vcc)       |                        | 4.75  |      | 5.25  | V                |
| Supply Current (Icc)       |                        |       | 21   | 24    | mA               |
| Phase Noise :              |                        |       |      |       |                  |
|                            | @10kHz Offset:         |       | -122 | -119  | dBc/Hz           |
|                            | @100kHz Offset:        |       | -143 | -140  | dBc/Hz           |
| Average Tuning Sensitivity | 308.6-328.6MHz         |       | 9.8  |       | MHz/V            |
| Harmonic Outputs           |                        |       | -10  |       | dBc              |
| OperatingTemperature Range |                        | -55   |      | +85   | $^\circ\text{C}$ |
| Tune Input Capacitance     |                        |       | 100  |       | PF               |
| Output Impedance -         |                        |       | 50   |       | $\Omega$         |
| Package Type               | SK605(12.7X12.7X4.3mm) |       |      |       |                  |

### Comments

X Indicates parameter to be tested 100% in production

| V<br>TUNE | TUNING<br>SENS.<br>(MHz/V) | FREQUENCY(MHz) |       |       | POWER OUTPUT(dBm) |      |      | HARMONIC(dBc) |       |       |
|-----------|----------------------------|----------------|-------|-------|-------------------|------|------|---------------|-------|-------|
|           |                            | -55℃           | +25℃  | +85℃  | -55℃              | +25℃ | +85℃ | -55℃          | +25℃  | +85℃  |
| 0.5       | 10.8                       | 300.3          | 298.8 | 297.9 | 0.5               | 0.3  | 0.0  | -10.5         | -10.6 | -11.3 |
| 1.0       | 9.3                        | 305.5          | 304.0 | 302.9 | 0.0               | 0.1  | -0.1 | -10.8         | -11.1 | -11.8 |
| 1.5       | 9.3                        | 310.0          | 308.5 | 307.4 | 0.1               | 0.0  | -0.3 | -11.3         | -11.5 | -12.1 |
| 2.0       | 9.0                        | 314.5          | 313.0 | 311.9 | 0.1               | 0.0  | -0.3 | -11.4         | -11.8 | -12.4 |
| 2.5       | 9.1                        | 319.0          | 317.8 | 316.4 | 0.2               | -0.1 | -0.4 | -11.4         | -12.1 | -12.5 |
| 3.0       | 9.9                        | 323.8          | 322.3 | 320.9 | 0.2               | -0.1 | -0.4 | -12.1         | -12.0 | -12.5 |
| 3.5       | 10.1                       | 329.3          | 327.5 | 325.9 | 0.2               | -0.1 | -0.5 | -11.4         | -11.9 | -12.3 |
| 4.0       | 10.6                       | 334.5          | 332.5 | 330.9 | 0.2               | -0.1 | -0.7 | -11.7         | -11.9 | -12.0 |
| 4.5       | 11.1                       | 340.0          | 338.0 | 336.2 | 0.3               | 0.1  | -0.4 | -12.4         | -12.4 | -12.6 |

| R&S FSUP Signal Source Analyzer |         |   |           |     |           |
|---------------------------------|---------|---|-----------|-----|-----------|
| Settings                        |         |   | Results   |     |           |
| Supply                          | Voltage |   | Frequency |     | Level     |
| Vmin                            | 4.75    | V | 318.631   | MHz | -0.55 dBm |
| Vcurrent                        | 5.00    | V | 318.621   | MHz | -0.10 dBm |
| Vmax                            | 5.25    | V | 318.591   | MHz | 0.32 dBm  |



Measurement Aborted

Date: 16.AUG.2012 09:06:04

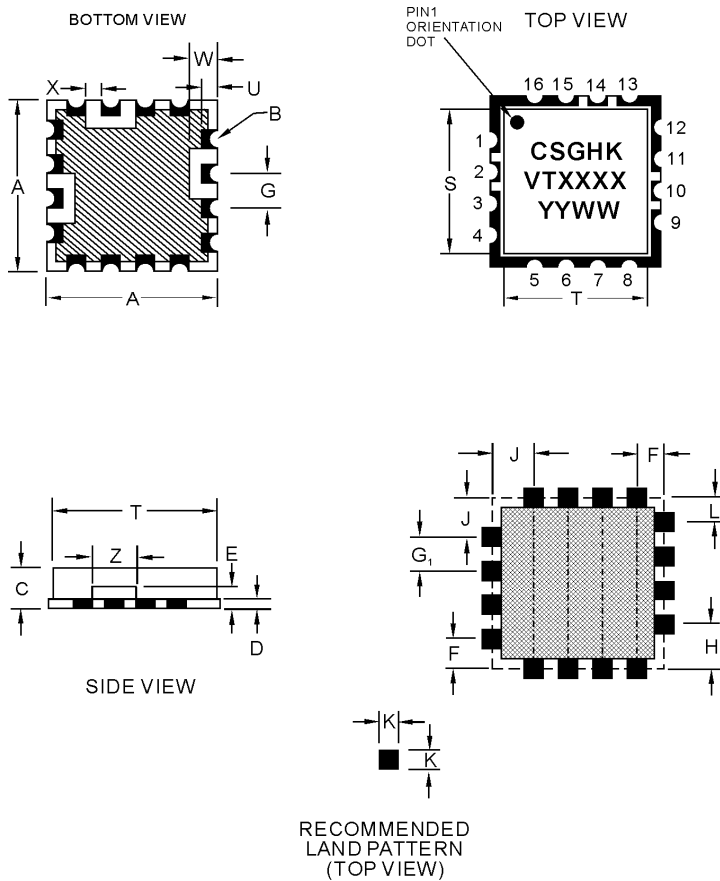
# REVISIONS

NOTE. UNLESS OTHERWISE SPECIFIED:

1. THE METAL CASE IS GROUND
2. ALL HALF VIA CONTACTS ARE PLATED THRU FROM THE PAD ON THE TOP SIDE TO THE PAD ON THE BOTTOM SIDE OF THE BOARD.
3. HATCHED AREAS GROUND AND ARE COVERED WITH LPI SOLDER MASK OVER BARE COPPER. ALL CONTACT AREAS ARE PLATED. SIGNAL VIAS MAY BE LOCATED WITHIN GROUND PLANE.
4. SUBSTRATE MATERIAL: FR-4
5. XXXX REPRESENTS THE MODEL NUMBER.
6. YYWW IS THE DATA CODE.

| PIN OUT FOR PLL |             |
|-----------------|-------------|
| PIN             | APPLICATION |
| 2               | VT          |
| 10              | RF OUT      |
| 14              | VCC         |

ALL OTHER PINS ARE GROUND



| SYMBOL         | DIMENSION   |             |
|----------------|-------------|-------------|
|                | MILLIMETERS | INCHES      |
| A              | 12.7±0.25   | 0.50±0.010  |
| B              | R=0.50      | R=0.019     |
| C              | 4.3         | 0.169       |
| D              | 0.99MAX     | 0.039MAX    |
| E              | 1.75MAX     | 0.069MAX    |
| F              | 2.16        | 0.085       |
| G              | 2.54±0.08   | 0.100±0.003 |
| G <sub>1</sub> | 2.54        | 0.100       |
| H              | 3.07        | 0.121       |
| J              | 2.92        | 0.115       |
| K              | 1.52        | 0.060       |
| L              | 2.00        | 0.079       |
| S              | 11.68       | 0.460       |
| T              | 11.81       | 0.465       |
| U              | 1.10        | 0.043       |
| W              | 1.78        | 0.188       |
| X              | 1.02        | 0.040       |
| Z              | 3.49        | 0.137       |

|             | APPROVALS | DATA | <br>SK605 PACKAGE<br>MECHANICAL PCB OUTLINE |
|-------------|-----------|------|---------------------------------------------------------------------------------------------------------------------------------|
| DRAWN BY    |           |      |                                                                                                                                 |
| CHECKED BY  |           |      |                                                                                                                                 |
| PROCESS ENG |           |      |                                                                                                                                 |
| QUALITY     |           |      |                                                                                                                                 |