

SURFACE MOUNT MODEL VOLTAGE CONTROLLED OSCILLATOR

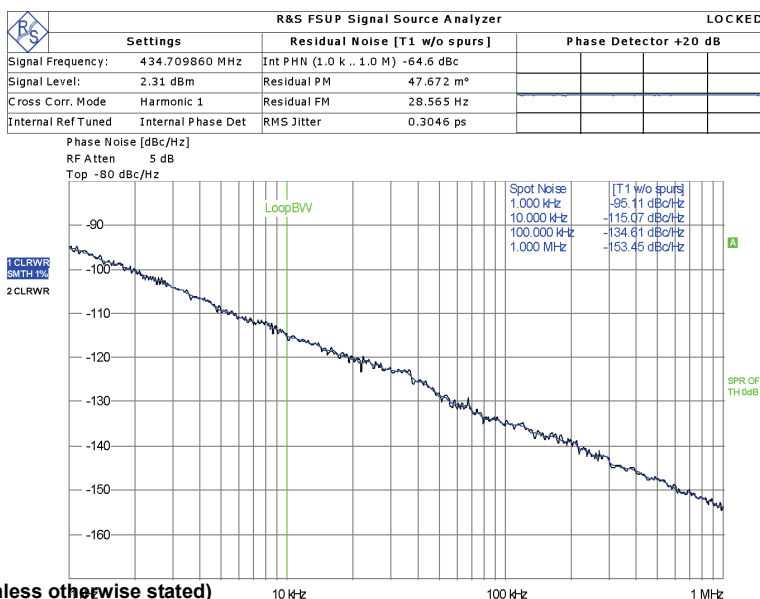
Frequency 400-470MHz

VT470M



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)

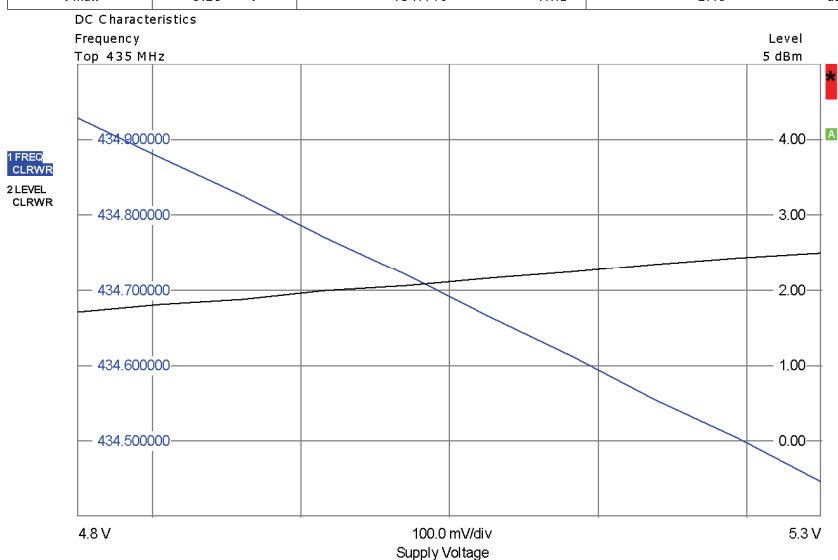
Parameter	Test Conditions	Min	Typ	Max	Units
Frequency Rangs		400		470	MHz
Tuning Voltage (V)		1.0		10.0	V
RF Output Power	400-470MHz	0.0		4.0	dBm
Supply Voltage (Vcc)		4.75	5	5.25	V
Supply Current (Icc)			13	16	mA
Phase Noise :					
	@10kHz Offset:		-113	-110	dBc/Hz
	@100kHz Offset:		-133	-130	dBc/Hz
Average Tuning Sensitivity	400-470MHz		11.7		MHz/V
Harmonic Outputs			-20		dBc
OperatingTemperature Range		-40		+85	°C
Tune Input Capacitance			100		PF
Output Impedance -			50		Ω
Package Type	SK605(12.7X12.7X4.3mm)				

Comments

X Indicates parameter to be tested 100% in production

V TUNE	TUNING SENS. (MHz/V)	FREQUENCY(MHz)			POWER OUTPUT(dBm)			HARMONIC(dBc)		
		-40℃	+25℃	+85℃	-40℃	+25℃	+85℃	-40℃	+25℃	+85℃
1.0	11.9	385.0	382.9	380.7	0.6	0.4	0.0	-22.9	-21.3	-12.9
2.0	12.3	397.0	394.9	392.6	0.9	0.7	0.2	-21.3	-24.7	-14.1
3.0	13.1	409.6	407.4	405.3	1.1	1.0	0.5	-19.4	-34.0	-16.4
4.0	13.2	422.3	420.2	418.1	1.3	1.1	0.7	-19.1	-30.3	-16.5
5.0	12.9	435.4	433.4	431.2	1.6	1.4	1.0	-17.7	-27.4	-17.6
6.0	12.0	447.9	445.9	443.6	1.9	1.7	1.2	-17.6	-23.7	-18.4
7.0	11.1	460.2	457.6	455.1	2.1	2.0	1.3	-18.6	-22.8	-17.8
8.0	10.3	471.5	468.8	466.3	2.3	2.2	1.5	-18.9	-24.1	-19.0
9.0	9.7	481.8	478.8	476.4	2.5	2.4	1.6	-19.0	-23.4	-19.9
10.0	9.2	491.6	488.3	485.7	2.6	2.5	1.5	-19.2	-22.6	-19.3

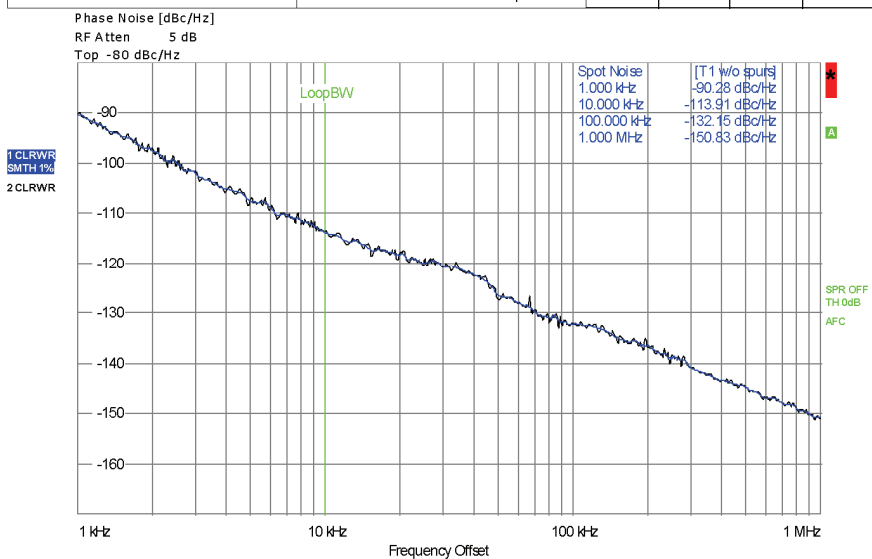
BS	R&S FSUP Signal Source Analyzer				
	Settings		Results		
	Supply	Voltage	Frequency		Level
	Vmin	4.75 V	434.928	MHz	1.71 dBm
	Vcurrent	5.00 V	434.693	MHz	2.11 dBm
	Vmax	5.25 V	434.446	MHz	2.49 dBm



Measurement Aborted

Date: 28.OCT.2009 10:54:39

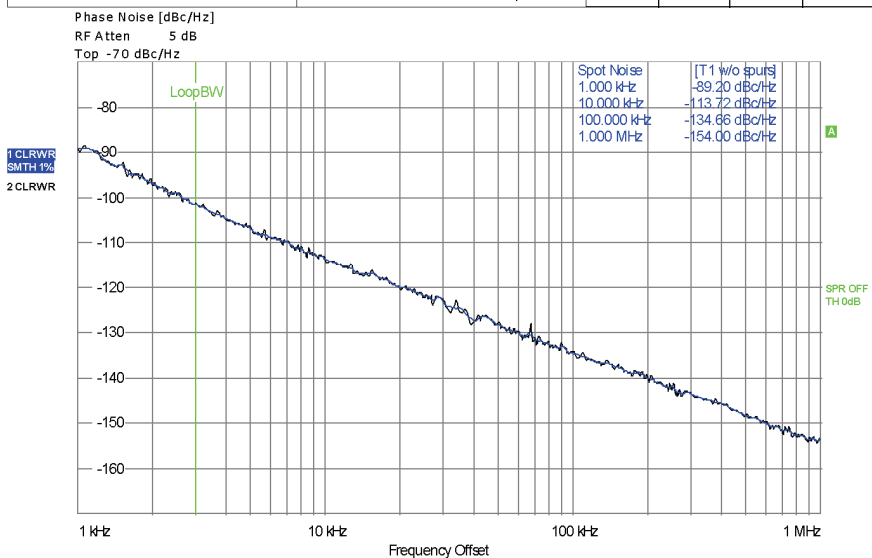
	R&S FSUP Signal Source Analyzer				UNLOCKED
	Settings	Residual Noise [T1 w/o spurs]		Phase Detector +0 dB	
Signal Frequency:	400.342573 MHz	Int PHN (1.0 k .. 1.0 M)	-61.6 dBc		
Signal Level:	1.64 dBm	Residual PM	67.576 m°		
Cross Corr. Mode	Harmonic 1	Residual FM	39.428 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.4689 ps		



Measurement Aborted

Date: 28.OCT.2009 10:46:41

	R&S FSUP Signal Source Analyzer				LOCKED
	Settings	Residual Noise [T1 w/o spurs]		Phase Detector +20 dB	
Signal Frequency:	470.102320 MHz	Int PHN (1.0 k .. 1.0 M)	-60.7 dBc		
Signal Level:	2.8 dBm	Residual PM	75.094 m°		
Cross Corr. Mode	Harmonic 1	Residual FM	27.429 Hz		
Internal Ref Tuned	Internal Phase Det	RMS Jitter	0.4437 ps		



Measurement Aborted

Date: 28.OCT.2009 10:53:00

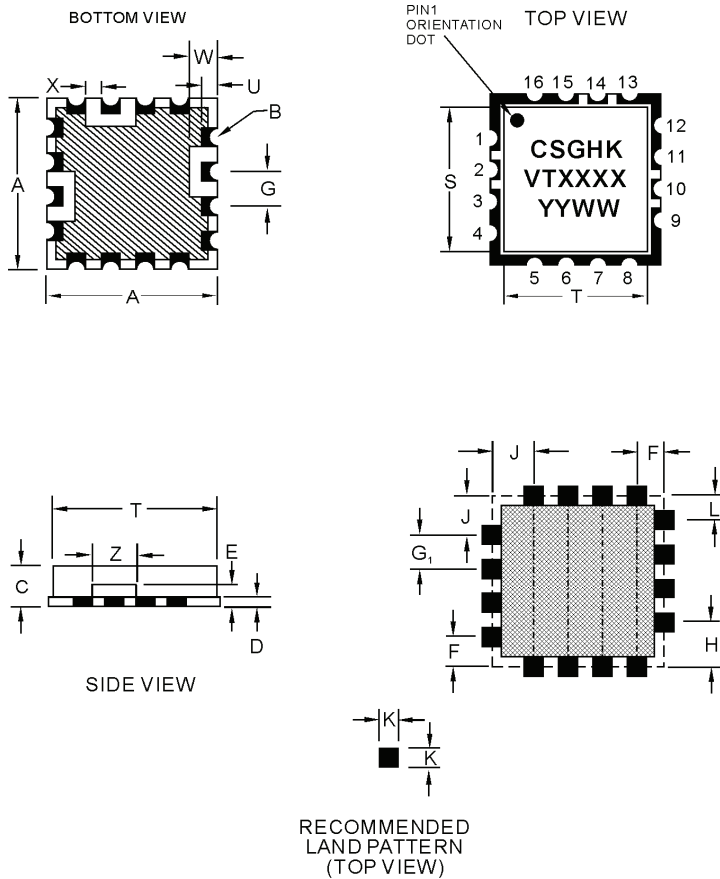
REVISIONS

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 ₁	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	 SK605 PACKAGE MECHANICAL PCB OUTLINE
DRAWN BY			
CHECKED BY			
PROCESS ENG			
QUALITY			