Surface Mount

Voltage Controlled Oscillator

ROS-2500W-319+

Wide Band 1000 to 2400 MHz

CASE STYLE: CK605

Features

- very wide band frequency range
- low phase noise
- low pulling
- low pushing
- aqueous washable

Applications

- wireless communications
- military & avionics

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Electrical Specifications

MODEL NO.	FREQ. (MHz)		POWER OUTPUT (dBm)	PHASE NOISE dBc/Hz SSB at offset frequencies,kHz Typ.				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
								VOLTAGE RANGE (V)		SENSI-TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)						Vcc (volts)	Current (mA)
	Min.	Max.	Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.		Max.
ROS-2500W-319+	1000	2400	+3.5	-65	-93	-116	-138	0.5	25	40-96	65	20	-90	-13	-	0.3	4.5	5	48

Pin Connections

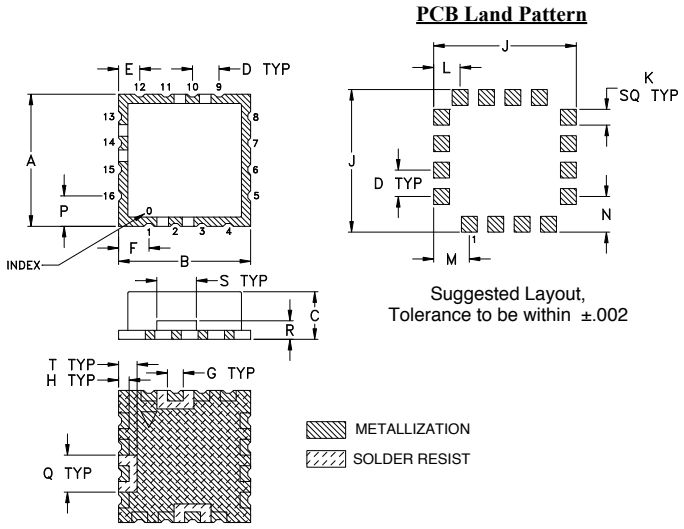
RF OUT	10
VCC	14
V-TUNE	2
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

Maximum Ratings

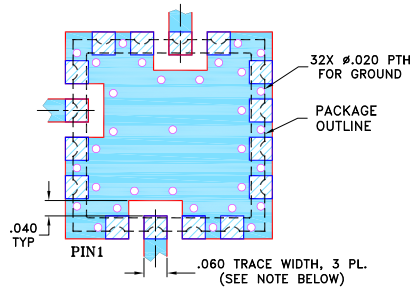
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	6V
Absolute Max. Tuning Voltage (Vtune)	27V
All specifications	50 ohm system

Permanent damage may occur if any of these limits are exceeded.

Outline Drawing



Demo Board MCL P/N: TB-10
Suggested PCB Layout (PL-012)



NOTES:

1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE BOTTOM IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
.500	**.500**	**.180**	**.100**	**.080**	**.115**	**.060**	**.040**	**.540**	**.060**	**.100**	**.135**	**.135**	**.115**	**.140**	**.070**	**.150**	**.070**	grams
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.0

Notes

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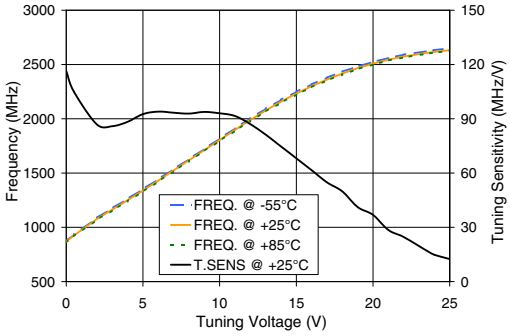
Performance Data & Curves*

ROS-2500W-319+

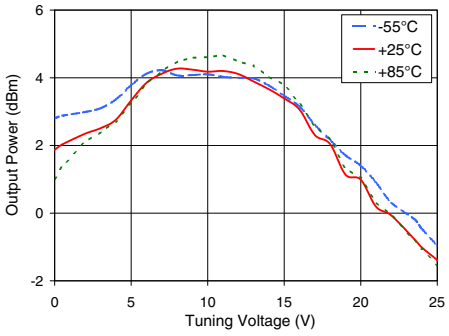
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 1700 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	116.32	875.2	867.1	859.1	2.80	1.87	1.01	36.86	-10.9	-22.2	-27.2	0.41	0.01	-68.3	-92.5	-113.6	-133.9	1.0	-62.76
0.50	104.94	933.6	925.3	917.9	2.88	2.03	1.39	37.15	-10.7	-21.6	-26.8	0.33	0.05	-68.8	-93.2	-114.5	-134.9	2.0	-70.70
2.00	86.83	1087.6	1077.0	1069.6	2.99	2.35	2.11	38.04	-11.1	-21.5	-25.3	0.42	0.03	-70.6	-94.8	-116.4	-137.2	3.5	-76.91
3.00	85.89	1175.9	1163.8	1155.9	3.10	2.51	2.39	38.72	-11.6	-22.5	-25.1	0.76	0.05	-71.0	-95.3	-117.3	-138.3	6.0	-82.81
4.00	88.33	1262.4	1249.7	1241.4	3.36	2.76	2.71	39.45	-10.9	-22.2	-25.3	1.00	0.06	-69.4	-95.4	-117.7	-139.1	8.5	-87.06
6.00	93.94	1443.8	1430.6	1421.7	4.12	3.85	3.82	40.74	-9.9	-20.2	-35.4	1.60	0.20	-67.9	-93.3	-116.4	-139.6	10.0	-88.78
8.00	92.86	1629.0	1617.9	1610.6	4.07	4.27	4.48	40.71	-9.9	-17.6	-32.4	4.86	0.30	-64.8	-89.0	-112.1	-135.4	20.8	-96.83
9.00	93.77	1723.5	1710.8	1703.5	4.08	4.24	4.59	39.97	-10.2	-17.2	-28.0	6.37	0.48	-61.9	-88.5	-112.4	-135.4	35.5	-102.35
10.00	93.03	1818.4	1804.5	1796.4	4.10	4.18	4.61	39.15	-10.9	-17.8	-32.9	7.11	0.30	-62.9	-88.4	-112.4	-135.3	60.7	-107.58
12.00	87.05	2005.2	1989.1	1979.3	4.00	4.11	4.48	37.88	-11.2	-22.5	-31.6	7.86	0.26	-63.2	-90.1	-114.2	-136.9	85.2	-111.02
13.00	81.25	2092.8	2076.1	2066.4	3.98	3.89	4.36	37.46	-12.4	-29.0	-38.9	7.43	0.24	-64.6	-91.9	-115.7	-138.1	100.0	-112.55
14.00	74.68	2174.1	2157.4	2147.5	3.77	3.66	4.03	37.17	-13.8	-29.6	-56.5	6.56	0.36	-64.3	-93.6	-117.2	-139.2	142.9	-115.93
15.00	68.14	2248.8	2232.1	2222.6	3.47	3.39	3.79	36.95	-14.7	-23.4	-46.5	5.47	0.46	-63.5	-93.9	-117.8	-139.6	167.8	-117.46
16.00	61.56	2316.9	2300.2	2291.2	3.15	3.06	3.24	36.79	-14.9	-22.1	-42.8	4.16	0.53	-67.4	-94.8	-118.5	-140.2	200.6	-119.22
18.00	49.83	2433.6	2416.7	2408.2	2.16	2.04	2.18	36.61	-17.5	-26.2	-34.1	2.58	0.37	-66.9	-93.7	-118.5	-140.3	281.6	-122.55
19.00	41.20	2481.8	2466.5	2457.6	1.71	1.14	1.32	36.56	-16.3	-27.4	-33.7	2.16	0.49	-66.3	-94.2	-119.0	-140.4	330.7	-124.15
20.00	36.89	2523.7	2507.7	2499.4	1.40	0.99	1.04	36.49	-16.6	-29.5	-34.9	1.79	0.46	-67.7	-94.6	-119.0	-140.2	464.2	-127.63
22.00	24.62	2590.5	2573.1	2565.2	0.31	-0.07	-0.06	36.42	-18.3	-32.4	-31.7	0.88	0.41	-68.7	-95.5	-119.0	-140.1	554.9	-129.50
24.00	14.85	2632.6	2617.0	2609.2	-0.47	-1.02	-1.06	36.37	-19.9	-32.8	-30.2	0.47	0.38	-68.9	-95.9	-119.3	-140.4	914.6	-134.69
25.00	12.50	2648.6	2631.9	2624.3	-0.95	-1.39	-1.53	36.33	-18.8	-31.4	-29.5	1.06	0.34	-67.3	-95.7	-118.9	-139.9	1000.0	-135.63

*at 25°C unless mentioned otherwise

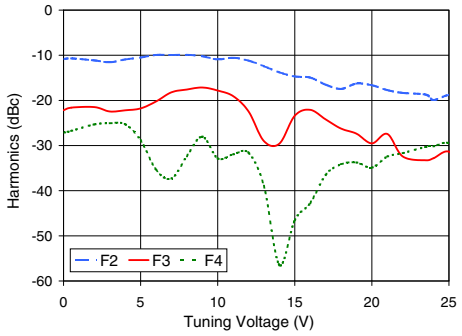
ROS-2500W-319+
Frequency and Tuning Sensitivity



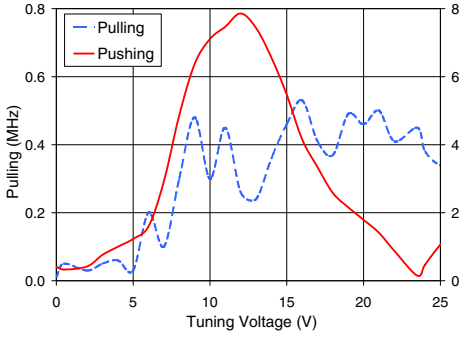
ROS-2500W-319+
Power Output



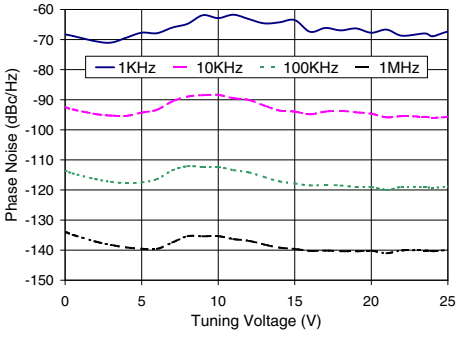
ROS-2500W-319+
Harmonics Level



ROS-2500W-319+
Frequency Pulling & Pushing (Vcc ± 5%)



ROS-2500W-319+
Phase Noise Vs. Tuning Voltage



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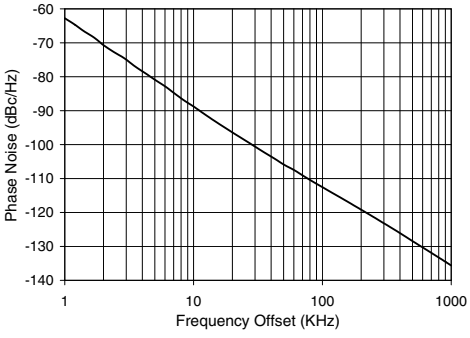
Phase Noise



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Mini-Circuits®
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com