

Voltage Controlled Oscillator

ROS-1801C-119+

50Ω 1800 MHz

The Big Deal:

- Low Phase Noise
- Good Pulling & Pushing
- Robust design and construction
- Small size .500" x .500" x .220"



CASE STYLE: CK1113

Product Overview:

The ROS-1801C-119+ is a Voltage Controlled Oscillator, designed to operate at 1800 MHz for point-to-point communication applications. The ROS-1801C-119+ is packaged in a metal case (size of .500" x .500" x .220") to shield against unwanted signals and noise.

Key Features

Feature	Advantages
Low Phase Noise: -126 dBc/Hz typ at 10kHz offset	Low phase noise improves system EVM (Error Vector Magnitude).
High Power Output, +6 dBm typ.	Reduces amplification requirements and improves immunity to external noise sources.
Good Pulling, 0.2 MHz typ.	Improves immunity against changes in output load.
Good Pushing, 0.1 MHz/V typ.	Provides increased immunity against noisy DC lines and improves output frequency stability vs. variations in supply voltage.
Robust design and construction	Each internal component of the ROS-1801C-119+ is bonded to the substrate, providing better immunity to microphonics, reduced phase hit, and decreased tombstoning risk during subsequent reflow operations.
Small size, .500" x .500" x .220"	The small size enables the ROS-1801C-119+ to be used in compact designs.

Low Noise 1800 MHz



CASE STYLE: CK1113

Features

- low phase noise, -126 dBc/Hz typ. @ 10kHz offset
- high power output, +6 dBm typ.
- low pulling, 0.2 MHz typ.
- low pushing, 0.1 MHz/V typ.
- aqueous washable

Applications

- wireless communications
- point-to-point communication

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

Electrical Specifications @ 0°C to 75°C

MODEL NO.	FREQ. (MHz)	POWER OUTPUT (dBm)	PHASE NOISE				TUNING					NON HARMONIC SPURIOUS		HARMONICS		PULLING pk-pk @12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
			dBc/Hz SSB at offset frequencies, kHz				VOLTAGE RANGE (V)	SENSITIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	(dBc)	(dBc)	Typ.	Max.	Vcc (volts)			Current (mA)	
			Typ.	1	10	100													1000
ROS-1801C-119+	1800	+6	-101	-126	-147	-166	0.5	9.5	1.5	15	50	-90	-16	-	0.2	0.1	8	37	

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)	9.5V
Absolute Max. Tuning Voltage (Vtune)	11.5V
All specifications	50 ohm system

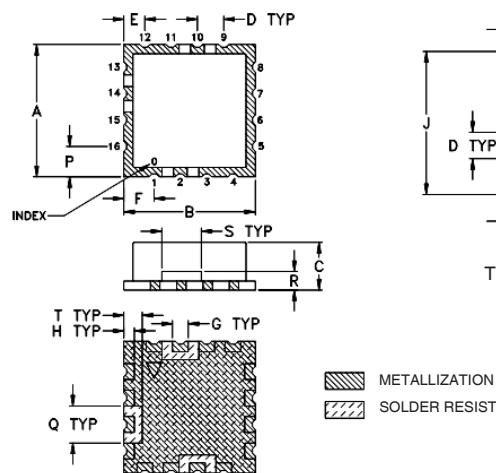
Permanent damage may occur if any of these limits are exceeded.

Tape & Reel: F37

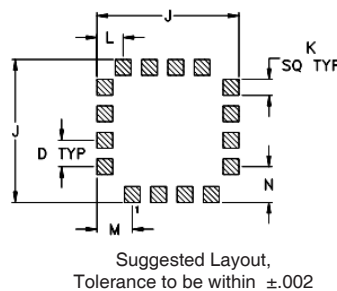
7" Reels with 10, 20, 50, 100 devices
13" Reels with 200, 500 devices

Environmental Ratings: ENV65

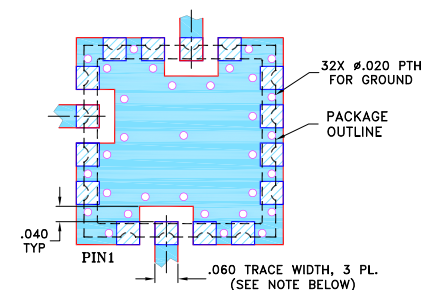
Outline Drawing



PCB Land Pattern



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.
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Outline Dimensions (inch/mm)

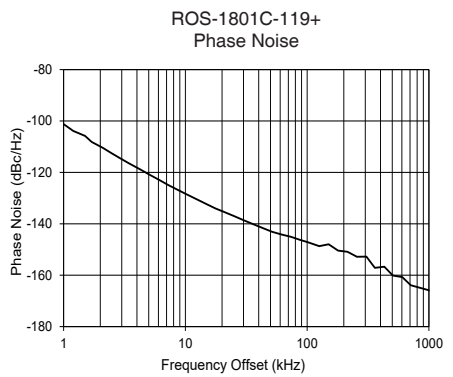
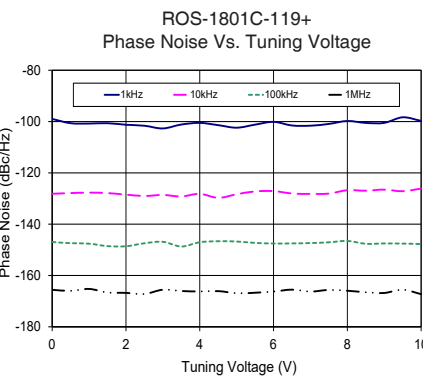
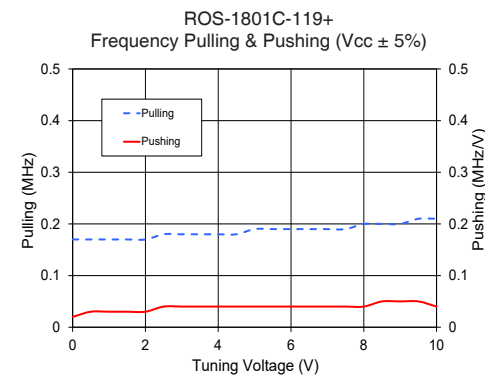
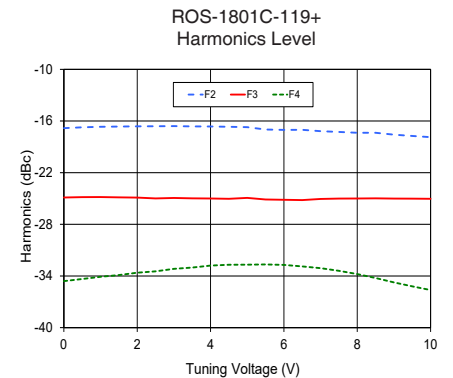
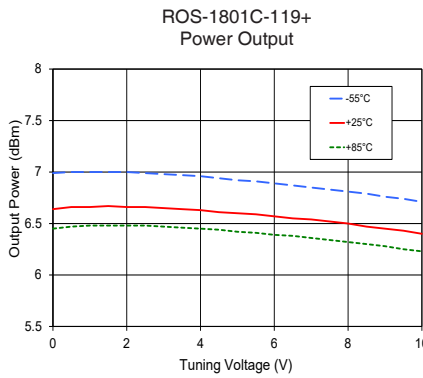
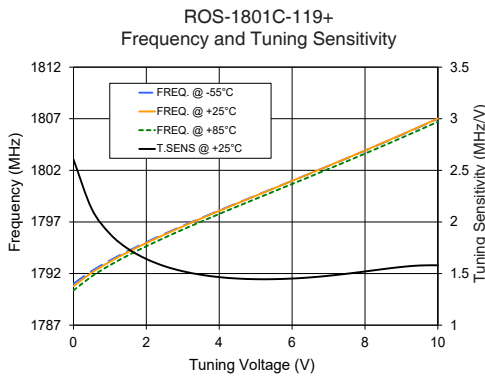
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
.500	.500	.220	.100	.080	.115	.060	.040	.540	.060	.100	.135	.135	.115	.140	.070	.150	.070	grams
12.70	12.70	5.59	2.54	2.03	2.92	1.52	1.02	13.72	1.52	2.54	3.43	3.43	2.92	3.56	1.78	3.81	1.78	1.2

Performance Data & Curves*

ROS-1801C-119+

V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			I _{cc} (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 1800 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	2.61	1791.0	1790.8	1790.4	6.99	6.64	6.45	30.32	-16.8	-24.9	-34.6	0.02	0.17	-98.99	-128.2	-147.0	-165.6	1.0	-101.22
0.50	2.13	1792.2	1792.1	1791.7	7.00	6.66	6.47	30.33	-16.7	-24.8	-34.4	0.03	0.17	-100.65	-127.9	-147.4	-166.0	2.1	-110.45
1.00	1.89	1793.3	1793.2	1792.8	7.00	6.66	6.48	30.33	-16.7	-24.8	-34.1	0.03	0.17	-100.79	-127.7	-147.6	-165.2	3.5	-116.68
2.00	1.64	1795.0	1795.0	1794.6	7.00	6.66	6.48	30.32	-16.6	-24.9	-33.6	0.03	0.17	-101.26	-128.5	-148.6	-166.8	6.1	-122.93
2.50	1.57	1795.8	1795.8	1795.5	6.99	6.66	6.48	30.32	-16.6	-25.0	-33.5	0.04	0.18	-101.64	-129.0	-147.4	-167.2	8.6	-126.73
3.00	1.52	1796.6	1796.6	1796.3	6.98	6.65	6.47	30.31	-16.6	-24.9	-33.2	0.04	0.18	-102.69	-128.6	-146.9	-165.6	10.0	-128.30
3.50	1.49	1797.4	1797.3	1797.0	6.97	6.64	6.46	30.29	-16.6	-25.0	-33.0	0.04	0.18	-101.17	-129.2	-148.7	-166.1	21.1	-135.50
4.00	1.47	1798.1	1798.1	1797.8	6.96	6.63	6.45	30.27	-16.6	-25.0	-32.8	0.04	0.18	-100.53	-128.2	-147.0	-166.2	36.0	-140.13
4.50	1.45	1798.8	1798.8	1798.5	6.94	6.61	6.44	30.26	-16.7	-25.0	-32.7	0.04	0.18	-101.41	-129.7	-146.6	-166.1	61.5	-144.15
5.00	1.45	1799.6	1799.5	1799.2	6.92	6.60	6.42	30.24	-16.7	-24.9	-32.7	0.04	0.19	-102.40	-128.3	-146.8	-166.9	87.9	-146.30
5.50	1.45	1800.3	1800.3	1800.0	6.91	6.59	6.41	30.22	-17.0	-25.1	-32.7	0.04	0.19	-101.21	-127.2	-147.3	-166.7	100.0	-147.09
6.00	1.45	1801.0	1801.0	1800.7	6.89	6.57	6.39	30.20	-17.0	-25.2	-32.7	0.04	0.19	-100.13	-127.1	-147.5	-166.3	150.2	-147.96
6.50	1.46	1801.7	1801.7	1801.4	6.87	6.55	6.38	30.17	-17.0	-25.2	-32.9	0.04	0.19	-101.54	-128.0	-147.5	-165.5	179.5	-150.43
7.00	1.48	1802.4	1802.4	1802.1	6.85	6.54	6.36	30.15	-17.2	-25.1	-33.1	0.04	0.19	-101.62	-128.2	-147.4	-166.3	214.6	-150.88
7.50	1.50	1803.2	1803.2	1802.9	6.83	6.52	6.34	30.12	-17.3	-25.0	-33.4	0.04	0.19	-100.93	-128.1	-147.1	-165.6	306.6	-152.75
8.00	1.52	1803.9	1803.9	1803.6	6.81	6.50	6.32	30.09	-17.4	-25.0	-33.8	0.04	0.20	-99.80	-126.8	-146.5	-165.9	360.0	-157.12
8.50	1.54	1804.7	1804.7	1804.4	6.79	6.47	6.30	30.07	-17.4	-25.0	-34.2	0.05	0.20	-100.54	-127.0	-147.6	-166.5	505.3	-160.12
9.00	1.56	1805.4	1805.5	1805.1	6.76	6.45	6.28	30.04	-17.6	-25.0	-34.8	0.05	0.20	-100.52	-126.5	-147.5	-166.8	604.0	-160.73
9.50	1.58	1806.2	1806.2	1805.9	6.74	6.43	6.25	30.00	-17.7	-25.0	-35.2	0.05	0.21	-98.35	-127.2	-147.6	-165.5	995.5	-165.84
10.00	1.58	1807.0	1807.0	1806.7	6.71	6.40	6.23	29.98	-17.9	-25.0	-35.6	0.04	0.21	-99.75	-126.1	-147.8	-167.3	1000.0	-165.99

*at 25°C unless mentioned otherwise



Additional Notes

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