NON-CATALOG

Surface Mount

Voltage Controlled Oscillator ROS-1770-1PH19+

Linear Tuning 1710 to 1800 MHz

Features

- linear tuning characteristics
- low phase noise
- low pushing
- low pulling
- aqueous washable

Generic photo used for illustration purposes only

CASE STYLE: CK605

Applications

- cellular communication
- point-to-point communication

+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 VOLTAGE RANGE (V)		SENSI-TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @12 dBr (MHz)	PUSHING (MHz/V)	DC OPERATING POWER Vcc (volts)	DC OPERATING POWER Current (mA)
	Min.	Max.	Typ.	1	10	100	1000	Min.	Max.	Typ.	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Typ.		Max.
ROS-1770-1PH19+	1710	1800	+3	-86	-111	-132	-152	0.5	8	18-21	18	120	-90	-22	-13	0.1	0.2	5	30

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)	7V
Absolute Max. Tuning Voltage (Vtune)	10V
All specifications	50 ohm system

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

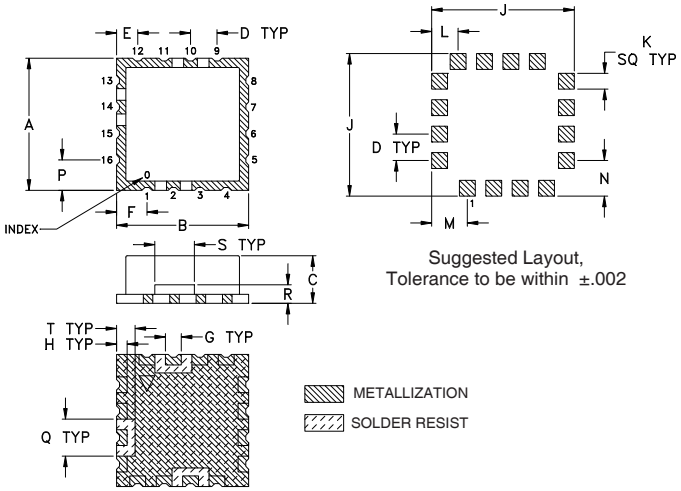
Tape & Reel: F37

7" Reels with 10, 20, 50, 100 devices

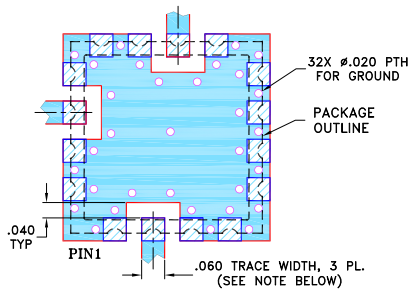
13" Reels with 200, 500 devices

Environmental Ratings: ENV65

Outline Drawing



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

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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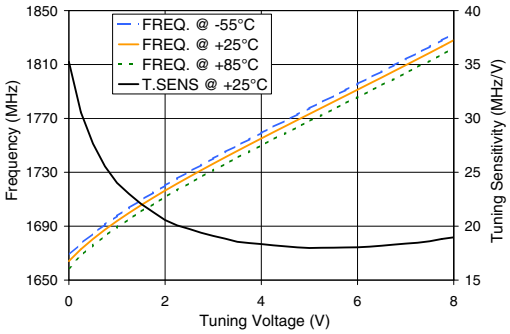
Performance Data & Curves*

ROS-1770-1PH19+

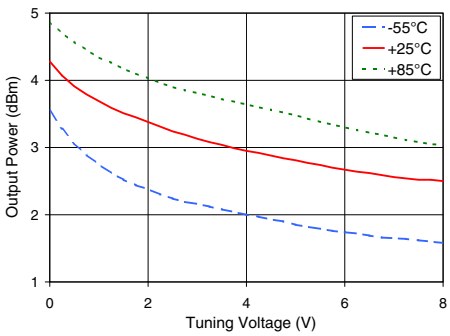
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (KHz)	PHASE NOISE at 1740 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	35.26	1668.7	1664.1	1658.9	3.55	4.28	4.87	23.54	-17.3	-29.2	-51.1	1.32	0.36	-83.5	-109.3	-129.9	-146.3	1.0	-86.63
0.25	30.57	1677.1	1672.9	1668.1	3.28	4.07	4.70	23.59	-17.4	-28.4	-49.1	0.83	0.42	-84.1	-110.9	-131.1	-150.1	2.0	-95.13
0.50	27.66	1684.5	1680.5	1675.8	3.06	3.91	4.57	23.63	-17.9	-28.5	-48.5	0.59	0.42	-84.1	-111.4	-132.3	-150.9	3.5	-102.39
1.00	24.02	1697.6	1693.8	1689.2	2.75	3.69	4.34	23.71	-18.8	-28.6	-46.8	0.32	0.35	-85.5	-112.9	-132.7	-151.3	6.0	-105.79
1.50	22.07	1709.3	1705.6	1700.9	2.52	3.51	4.17	23.80	-19.1	-28.7	-44.9	0.17	0.24	-87.1	-111.1	-132.2	-152.1	8.5	-110.34
2.00	20.57	1720.2	1716.4	1711.7	2.38	3.38	4.03	23.89	-19.7	-27.8	-43.8	0.06	0.11	-87.4	-112.4	-132.6	-152.5	10.0	-111.85
2.50	19.75	1730.4	1726.6	1721.8	2.24	3.24	3.90	23.98	-19.9	-29.0	-42.8	0.01	0.03	-87.6	-112.0	-132.8	-151.8	20.8	-119.27
3.00	19.10	1740.3	1736.4	1731.5	2.16	3.13	3.81	24.08	-20.5	-29.5	-41.7	0.08	0.14	-86.8	-111.8	-132.7	-151.7	35.5	-123.53
3.25	18.84	1745.1	1741.2	1736.2	2.12	3.08	3.77	24.13	-20.9	-29.4	-41.3	0.11	0.18	-86.8	-111.4	-132.8	-151.9	60.7	-128.15
3.75	18.44	1754.5	1750.5	1745.5	2.04	2.99	3.68	24.23	-21.6	-29.1	-39.7	0.17	0.24	-86.1	-111.8	-132.5	-151.3	86.7	-131.77
4.00	18.34	1759.2	1755.1	1750.0	2.00	2.95	3.64	24.28	-21.9	-29.8	-39.2	0.19	0.25	-86.8	-111.3	-132.6	-151.3	100.0	-132.28
4.50	18.13	1768.4	1764.3	1759.0	1.93	2.88	3.56	24.39	-22.1	-30.4	-38.2	0.24	0.24	-85.7	-110.7	-132.7	-151.4	148.1	-135.52
5.00	17.98	1777.5	1773.3	1768.0	1.85	2.81	3.48	24.50	-22.4	-29.8	-37.4	0.29	0.19	-87.2	-111.0	-132.4	-151.4	177.0	-138.03
5.50	18.00	1786.6	1782.3	1776.9	1.79	2.74	3.38	24.60	-22.8	-30.5	-35.9	0.34	0.11	-86.7	-110.4	-132.0	-152.7	211.6	-137.82
6.00	18.05	1795.6	1791.3	1785.7	1.74	2.67	3.30	24.72	-23.2	-30.9	-34.8	0.39	0.02	-84.7	-110.1	-132.0	-151.4	302.4	-140.06
6.50	18.19	1804.8	1800.3	1794.7	1.69	2.62	3.22	24.84	-23.6	-32.0	-33.3	0.44	0.07	-84.8	-110.0	-131.8	-151.2	361.5	-141.95
7.00	18.39	1813.9	1809.5	1803.7	1.65	2.56	3.15	24.96	-24.0	-31.6	-32.7	0.49	0.14	-85.9	-110.3	-132.0	-151.5	507.5	-145.92
7.50	18.60	1823.2	1818.7	1812.8	1.62	2.52	3.08	25.09	-24.5	-31.1	-32.6	0.54	0.18	-84.8	-109.8	-131.5	-150.8	606.7	-147.63
7.75	18.81	1827.9	1823.3	1817.3	1.60	2.52	3.05	25.15	-24.6	-32.4	-32.2	0.57	0.19	-83.5	-109.7	-131.5	-150.8	851.6	-150.58
8.00	18.97	1832.7	1828.0	1822.0	1.58	2.50	3.04	25.21	-24.6	-33.6	-31.3	0.61	0.19	-83.7	-108.2	-131.5	-151.1	1000.0	-152.58

*at 25°C unless mentioned otherwise

ROS-1770-1PH19+
Frequency and Tuning Sensitivity



ROS-1770-1PH19+
Power Output



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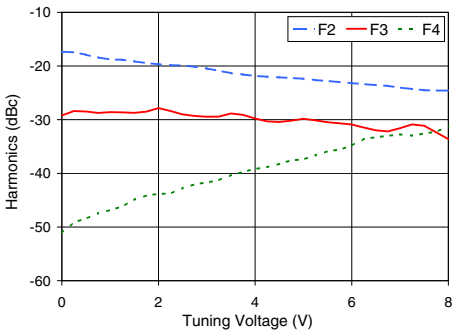
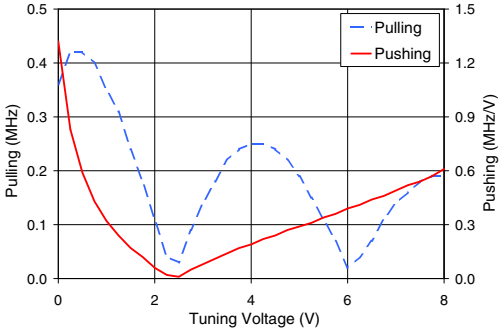
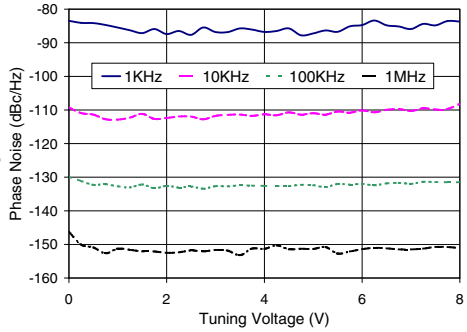
Harmonics Level



ROS-1770-1PH19+
Frequency Pulling & Pushing (Vcc ± 5%)



ROS-1770-1PH19+
Phase Noise Vs. Tuning Voltage



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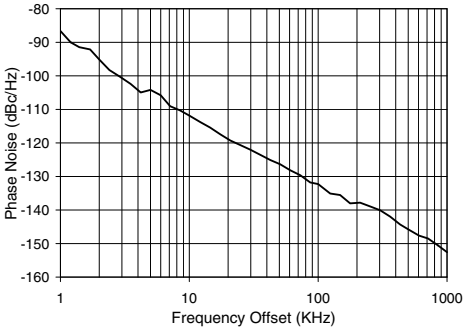
Phase Noise



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