

Surface Mount

## Voltage Controlled Oscillator

## ROS-2230-119+

Wide Band 1430 to 2230 MHz

### Features

- high power output, +11 dBm typ.
- low phase noise
- low pushing
- aqueous washable

### Applications

- wireless communications
- satellite systems



Generic photo used for illustration purposes only

CASE STYLE: CK605

**+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				TUNING					NON HARMONIC SPURIOUS (dBc)	HARMONICS (dBc)		PULLING pk-pk @ 12 dB (MHz)	PUSHING (MHz/V)	DC OPERATING POWER	
	Min.	Max.		Typ.	1	10	100	1000	VOLTAGE RANGE (V)	SENSI- TIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)		Typ.	Typ.			Typ.	Typ.
ROS-2230-119+	1430	2230	+11	-70	-99	-120	-141	0.5	18	42-94	60	150	-90	-30	-	7	0.7	12	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)	13V
Absolute Max. Tuning Voltage (Vtune)	20V
All specifications	50 ohm system

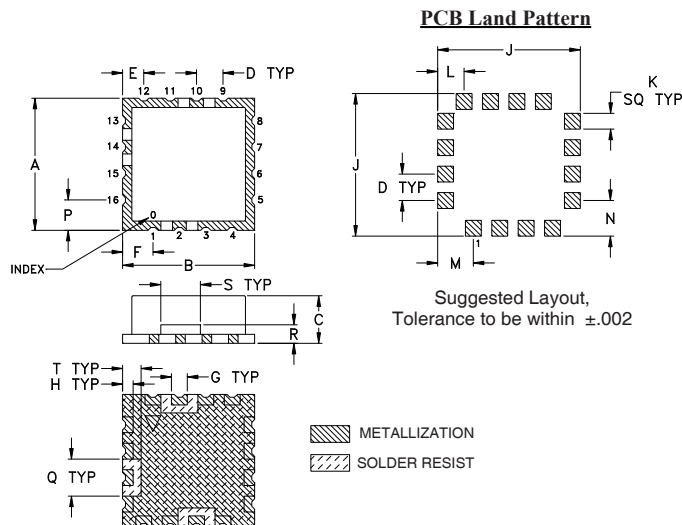
Permanent damage may occur if any of these limits are exceeded.

### Tape & Reel: F37

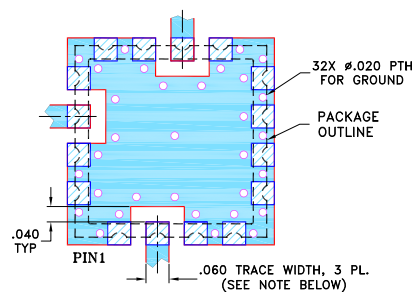
7" Reels with 10, 20, 50, 100 devices  
13" Reels with 200, 500 devices

### 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  $.030" \pm .002"$ ; 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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 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.  
 C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



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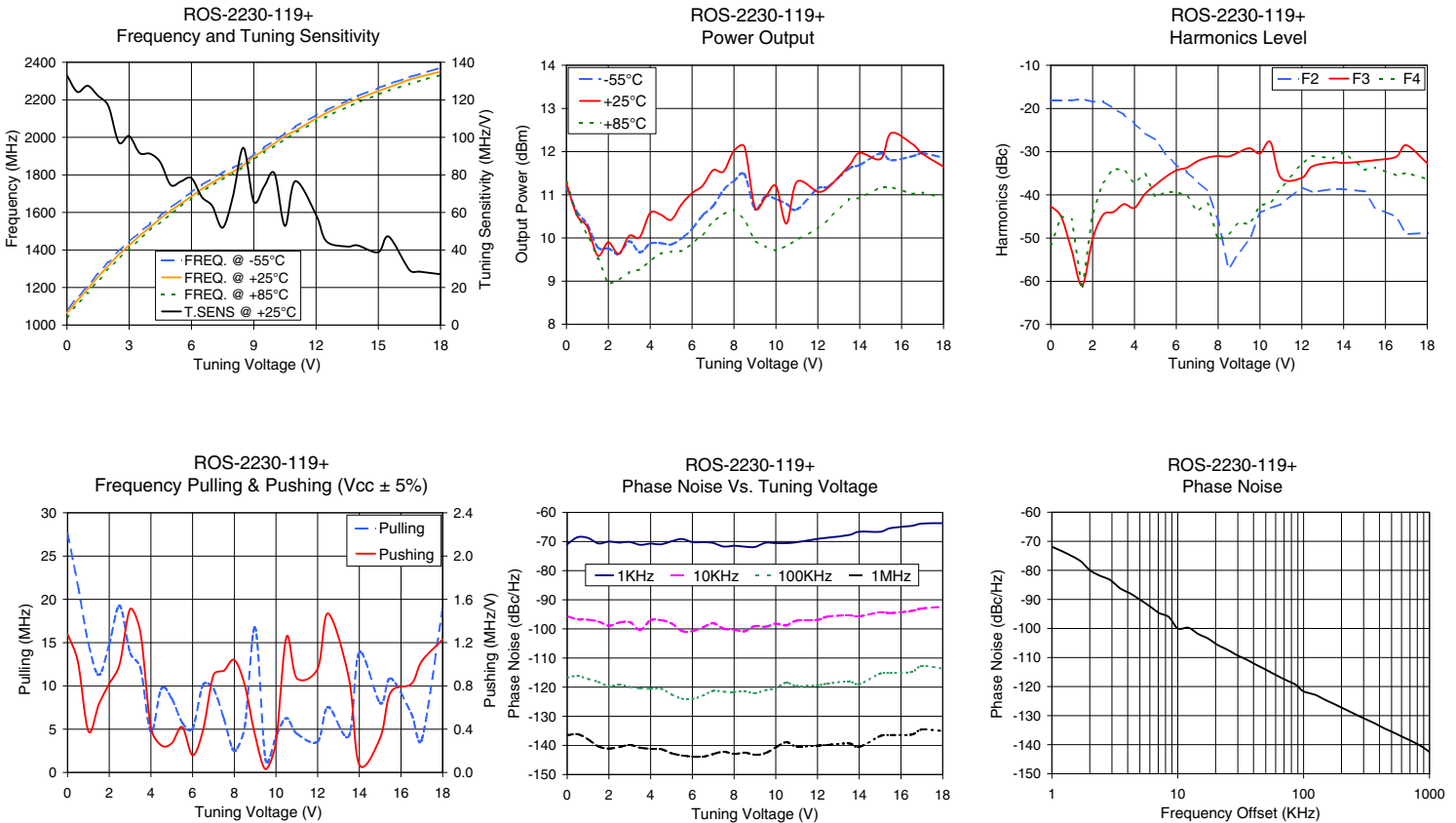
REV. B  
M176923  
EDR-7655MP  
ROS-2230-119+  
RAV  
200407  
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## Performance Data & Curves\*

## ROS-2230-119+

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 1830 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	133.03	1081.8	1064.7	1040.6	11.18	11.27	11.31	22.66	-18.0	-42.6	-51.8	1.28	27.65	-71.0	-95.6	-116.7	-136.5	1.0	-71.87
0.50	124.21	1147.4	1131.3	1112.3	10.61	10.53	10.53	22.68	-18.0	-45.1	-45.0	1.02	21.57	-68.5	-96.7	-116.1	-136.1	2.0	-79.95
1.00	127.50	1206.4	1193.4	1171.3	10.31	10.25	10.08	22.70	-18.1	-52.9	-45.7	0.38	14.91	-68.8	-96.8	-117.2	-137.9	3.5	-86.26
2.00	116.61	1335.8	1318.2	1297.0	9.76	9.90	8.93	22.87	-18.4	-50.2	-44.4	0.82	14.78	-70.0	-98.9	-119.7	-141.0	6.0	-92.37
3.00	100.68	1444.6	1425.2	1407.4	9.92	10.05	9.21	23.09	-20.0	-43.9	-33.9	1.51	13.82	-70.2	-97.7	-119.9	-139.8	8.5	-96.07
4.00	91.30	1540.1	1521.3	1505.5	9.87	10.58	9.47	23.52	-23.5	-43.0	-37.3	0.41	4.67	-70.7	-97.0	-120.6	-141.2	10.0	-99.99
5.00	74.65	1625.6	1610.3	1590.5	9.85	10.42	9.68	23.87	-27.2	-37.7	-40.4	0.27	8.51	-69.9	-98.1	-122.5	-142.7	20.8	-105.72
6.00	78.27	1709.1	1685.9	1673.9	10.21	11.04	9.87	23.93	-33.0	-34.3	-39.3	0.16	5.06	-70.2	-100.8	-124.1	-143.8	35.5	-110.80
7.00	63.44	1781.7	1759.2	1745.4	10.74	11.57	10.38	23.94	-36.9	-32.2	-43.8	0.90	9.66	-70.5	-98.1	-121.2	-143.0	60.7	-116.11
8.00	68.61	1837.8	1816.8	1806.1	11.32	12.02	10.66	23.79	-45.8	-31.0	-50.5	1.04	2.50	-71.5	-100.3	-121.7	-143.0	86.7	-119.38
9.00	65.83	1909.5	1898.3	1882.2	10.67	10.70	9.93	23.69	-53.3	-30.1	-46.4	0.34	16.70	-71.9	-99.0	-122.1	-143.2	100.0	-121.63
10.00	80.73	1983.8	1968.1	1955.1	10.90	11.20	9.70	23.75	-44.1	-30.4	-42.5	0.28	4.16	-70.6	-98.2	-120.3	-140.7	148.1	-124.56
11.00	76.67	2056.7	2034.9	2023.8	10.66	11.30	9.95	23.92	-42.2	-36.1	-38.4	0.87	4.48	-70.2	-97.2	-119.6	-140.4	177.0	-126.10
12.00	58.73	2118.4	2100.4	2084.2	11.15	11.07	10.22	24.01	-38.2	-36.1	-32.9	0.96	3.58	-69.1	-96.9	-119.4	-140.1	211.6	-127.74
13.50	41.84	2196.7	2183.2	2162.5	11.61	11.68	10.91	23.80	-38.6	-32.5	-31.6	0.87	4.22	-67.8	-95.3	-118.0	-139.3	302.4	-130.98
14.00	42.46	2219.7	2204.1	2184.8	11.69	11.97	10.92	23.77	-38.7	-32.6	-30.0	0.07	13.89	-66.6	-95.7	-119.0	-140.5	361.5	-132.50
15.00	38.81	2263.2	2247.0	2228.5	11.96	11.83	11.18	23.45	-39.2	-32.2	-34.2	0.32	8.00	-66.7	-94.3	-115.4	-136.8	507.5	-135.65
16.50	29.36	2320.7	2308.1	2285.4	11.89	12.18	11.02	23.21	-45.0	-31.2	-35.5	0.82	6.78	-64.6	-93.8	-114.8	-136.3	606.7	-137.24
17.00	28.46	2338.2	2322.8	2301.9	11.96	11.95	11.05	23.14	-49.1	-28.5	-34.9	1.03	3.84	-63.8	-93.0	-112.8	-134.6	851.6	-140.41
18.00	27.05	2370.6	2349.8	2332.1	11.86	11.65	10.93	22.96	-48.8	-32.7	-36.4	1.23	19.01	-63.7	-92.4	-113.6	-135.1	1000.0	-142.51

\*at 25°C unless mentioned otherwise



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