

# Voltage Controlled Oscillator MOS-1739-219R+

50Ω 1690 to 1760 MHz

## The Big Deal:

- Good Harmonic Suppression
- Low Phase Noise
- Robust design and construction
- Small size .375" x .375" x .131"



CASE STYLE: CZ682

## Product Overview:

The MOS-1739-219R+ is a Voltage Controlled Oscillator, designed to operate from 1690 to 1760 MHz for cellular base station applications. The MOS-1739-219R+ is packaged in a metal case (size of .375" x .375" x .131") to shield against unwanted signals and noise.

## Key Features

Feature	Advantages
Linear Tuning Sensitivity Ratio: 1.15:1 typ.	Optimal for loop filter design.
Good Harmonic Suppression, -25dBc typ.	Provides clear signals suitable for systems requiring high spectral purity.
Low Phase Noise: -103dBc/Hz typ at 10kHz offset	Low phase noise improves system EVM (Error Vector Magnitude).
Good Pulling, 0.1MHz typ.	Improves immunity against changes in output load.
Good Pushing, 1.4MHz/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 MOS-1739-219R+ is bonded to the substrate, providing better immunity to microphonics, reduced phase hit, and decreased tombstoning risk during subsequent reflow operations.
Small size, .375" x .375 x .131"	The small size enables the MOS-1739-219R+ to be used in compact designs.

Surface Mount

# Voltage Controlled Oscillator

# MOS-1739-219R+

Linear Tuning 1690 to 1760 MHz

## Features

- linear tuning characteristics
- low phase noise, -103 dBc/Hz typ. @ 10kHz offset
- low pulling, 0.1 MHz typ.
- low pushing, 1.4 MHz/V typ.
- aqueous washable

## Applications

- wireless communications
- cellular base station
- MW & MMW



CASE STYLE: CZ682

### +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.	Max.	Typ.	Max.	Vcc	Current (mA)
MOS-1739-219R+	1690	1760	1	-74	-103	-124	-144	0.5	5	26-30	25	300	-90	-25	-17	0.1	1.4	5	37			

## Pin Connections

RF OUT	5
VCC	3
V-TUNE	1
GROUND	2,4,6,7,8

## 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)	7V
All specifications	50 ohm system

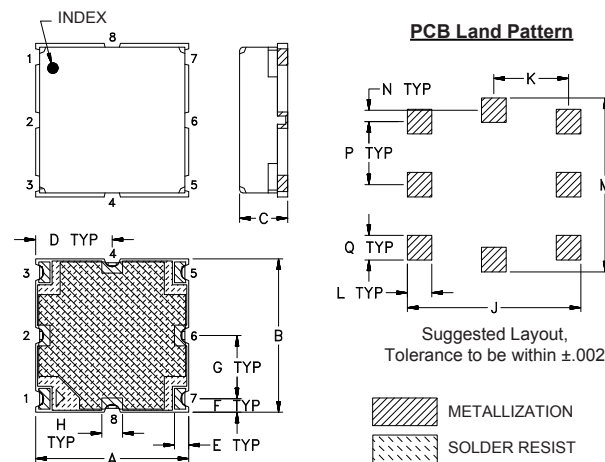
Permanent damage may occur if any of these limits are exceeded.

## Tape & Reel: F60

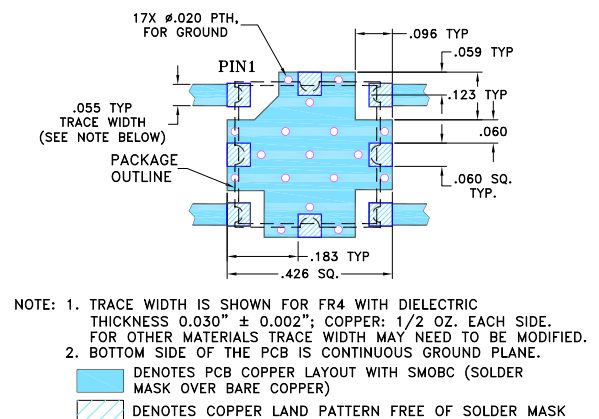
7" Reels with 10, 20, 50, 100 devices  
13" Reels with 200, 500, 1000 devices

## Environmental Ratings: ENV65

## Outline Drawing



## Demo Board MCL P/N: TB-128 Suggested PCB Layout (PL-023)



## Outline Dimensions (inch/mm)

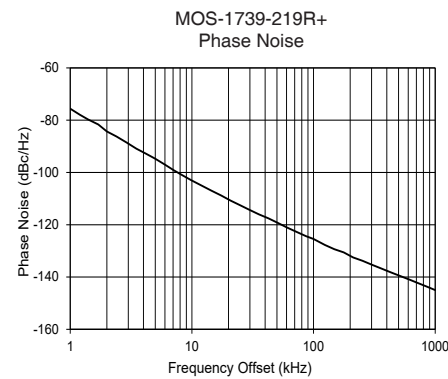
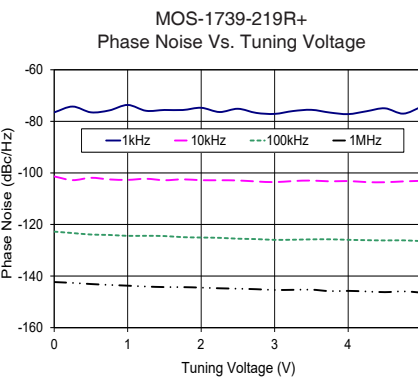
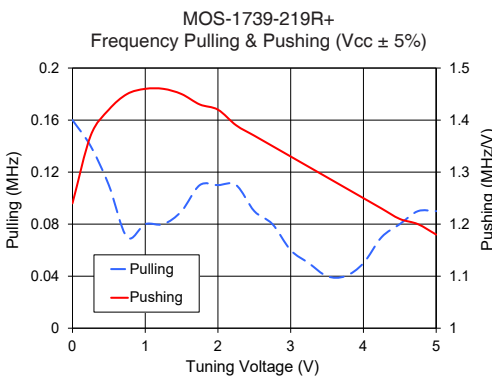
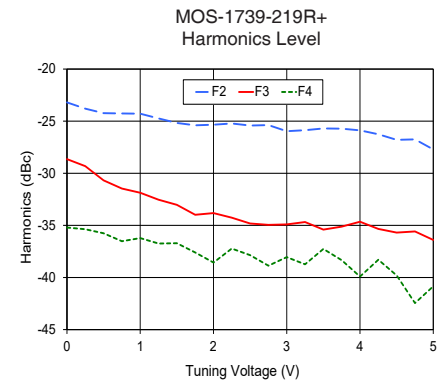
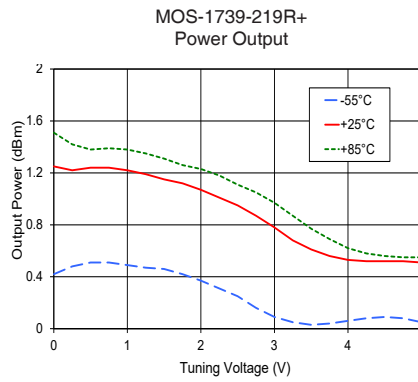
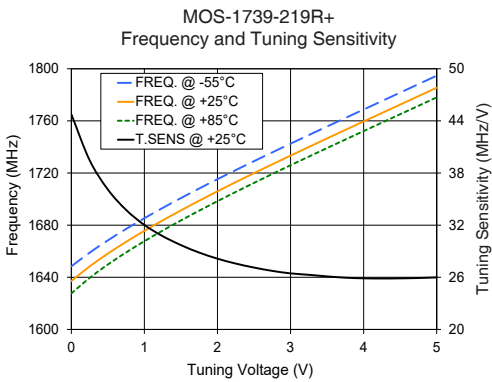
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	wt.
.375	.375	.131	.188	.035	.033	.154	.050	.425	.183	.060	.425	.028	.154	.060	grams
9.52	9.52	3.33	4.77	0.89	0.84	3.91	1.27	10.80	4.65	1.52	10.80	0.71	3.91	1.52	.60

# Performance Data & Curves\*

# MOS-1739-219R+

V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			I <sub>cc</sub> (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 1725 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	44.77	1648.4	1637.1	1627.6	0.42	1.25	1.51	29.12	-23.2	-28.6	-35.2	1.24	0.16	-76.52	-101.4	-122.8	-142.3	1.0	-75.60
0.50	36.11	1668.3	1658.2	1649.8	0.51	1.24	1.38	29.28	-24.2	-30.7	-35.8	1.42	0.11	-76.51	-101.9	-123.9	-143.1	2.0	-84.32
0.75	33.75	1677.1	1667.2	1659.1	0.51	1.24	1.39	29.34	-24.3	-31.5	-36.5	1.45	0.07	-75.76	-102.5	-124.1	-143.4	3.5	-90.91
1.00	32.02	1685.3	1675.6	1667.7	0.49	1.22	1.38	29.39	-24.3	-31.9	-36.2	1.46	0.08	-73.65	-102.7	-124.4	-143.7	6.0	-96.98
1.25	30.74	1693.2	1683.6	1675.9	0.47	1.19	1.35	29.44	-24.7	-32.5	-36.7	1.46	0.08	-75.91	-102.3	-124.4	-144.1	8.5	-101.26
1.50	29.71	1700.8	1691.3	1683.6	0.46	1.15	1.31	29.48	-25.2	-33.0	-36.7	1.45	0.09	-75.59	-102.8	-124.5	-144.3	10.0	-103.09
1.75	28.85	1708.1	1698.8	1691.1	0.42	1.12	1.26	29.52	-25.4	-34.0	-37.6	1.43	0.11	-75.61	-102.5	-124.9	-144.3	20.8	-110.76
2.00	28.15	1715.2	1706.0	1698.4	0.37	1.07	1.23	29.56	-25.3	-33.8	-38.6	1.42	0.11	-74.75	-102.8	-125.1	-144.5	35.5	-116.02
2.25	27.58	1722.2	1713.0	1705.5	0.31	1.01	1.18	29.60	-25.2	-34.3	-37.2	1.39	0.11	-76.39	-102.8	-125.2	-144.7	60.7	-121.07
2.50	27.12	1729.1	1719.9	1712.4	0.25	0.95	1.11	29.64	-25.4	-34.8	-37.9	1.37	0.09	-75.13	-102.9	-125.5	-144.9	86.7	-124.37
2.75	26.74	1735.8	1726.7	1719.3	0.16	0.87	1.05	29.67	-25.4	-35.0	-38.9	1.35	0.08	-76.73	-103.3	-125.7	-145.1	100.0	-125.45
3.00	26.45	1742.5	1733.4	1726.0	0.09	0.78	0.97	29.70	-26.0	-34.9	-38.1	1.33	0.06	-77.11	-103.6	-126.0	-145.4	148.1	-129.34
3.25	26.29	1749.1	1740.0	1732.6	0.05	0.68	0.87	29.72	-25.9	-34.7	-38.7	1.31	0.05	-76.01	-103.2	-125.9	-145.3	177.0	-130.56
3.50	26.11	1755.7	1746.5	1739.2	0.03	0.61	0.77	29.75	-25.7	-35.4	-37.3	1.29	0.04	-75.54	-103.0	-125.8	-145.3	211.6	-132.49
3.25	26.29	1749.1	1740.0	1732.6	0.05	0.68	0.87	29.72	-25.9	-34.7	-38.7	1.31	0.05	-76.01	-103.2	-125.9	-145.3	302.4	-135.31
4.00	25.88	1768.7	1759.6	1752.2	0.06	0.53	0.62	29.80	-25.9	-34.7	-39.9	1.25	0.05	-77.20	-103.2	-125.9	-145.7	361.5	-136.75
4.25	25.86	1775.2	1766.0	1758.7	0.08	0.52	0.58	29.82	-26.3	-35.3	-38.3	1.23	0.07	-76.09	-103.6	-126.1	-146.0	507.5	-139.47
4.50	25.88	1781.7	1772.5	1765.1	0.09	0.52	0.56	29.84	-26.8	-35.7	-39.8	1.21	0.08	-74.95	-103.6	-126.2	-146.2	606.7	-140.88
4.75	25.92	1788.2	1779.0	1771.6	0.08	0.52	0.55	29.85	-26.8	-35.6	-42.5	1.20	0.09	-77.01	-103.3	-126.1	-145.9	851.6	-143.62
5.00	25.99	1794.7	1785.4	1778.0	0.05	0.51	0.55	29.88	-27.7	-36.4	-40.9	1.18	0.09	-74.34	-103.1	-126.5	-146.4	1000.0	-143.62

\*at 25°C unless mentioned otherwise



## Additional Notes

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