

Voltage Controlled Oscillator

ZX95-520+

5V Tuning for PLL IC's 485 to 520 MHz

Features

- linear tuning characteristics
- low phase noise
- low pushing
- low pulling
- 0.5-5V tuning voltage range
- protected by US patent 6,790,049



CASE STYLE: GB956

Connectors	Model
SMA	ZX95-520-S+

Applications

- r & d
- lab
- instrumentation
- PLL circuitry
- wireless microphones

+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	
								VOLTAGE RANGE (V)	SENSITIVITY (MHz/V)	PORT CAP (pF)	3 dB MODULATION BANDWIDTH (MHz)	V _{cc}							Current (mA)	
																				Min.
ZX95-520+	485	520	-0.2	-90	-115	-135	-154	0.5	5	12	70	70	-90	-22	-14	0.2	0.1	5	17	

Maximum Ratings

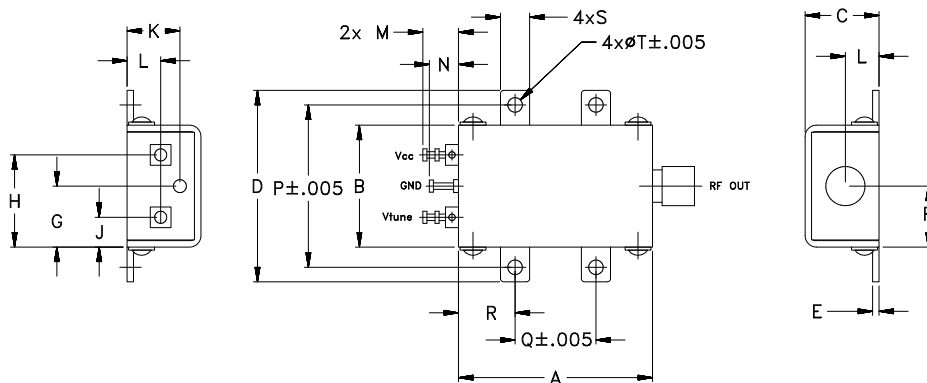
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (V _{cc})	7V
Absolute Max. Tuning Voltage (V _{tune})	7V
All specifications	50 ohm system

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



NOTE: When soldering the DC connections, caution must be used to avoid overheating the DC terminals. See Application Note [AN-40-10](#).

Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	wt.
1.20	.75	.46	1.18	.04	.38	.38	.57	.18	.33	.21	.22	.18	1.00	.50	.35	.18	.106	grams
30.48	19.05	11.68	29.97	1.02	9.65	9.65	14.48	4.57	8.38	5.33	5.59	4.57	25.40	12.70	8.89	4.57	2.69	35.0

Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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

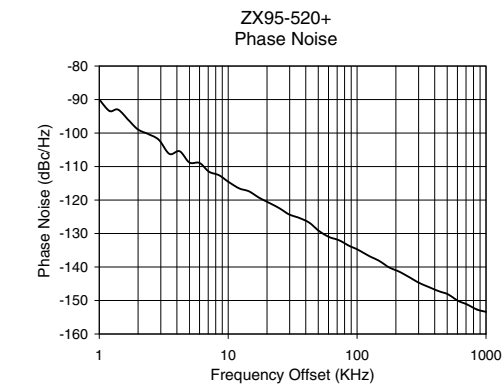
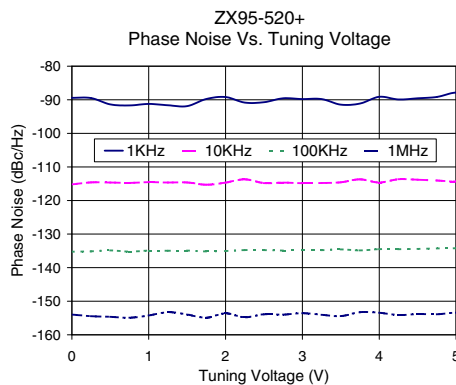
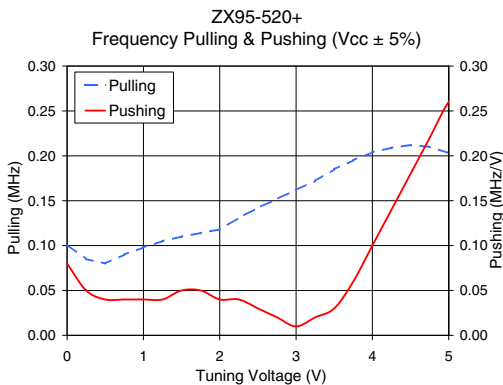
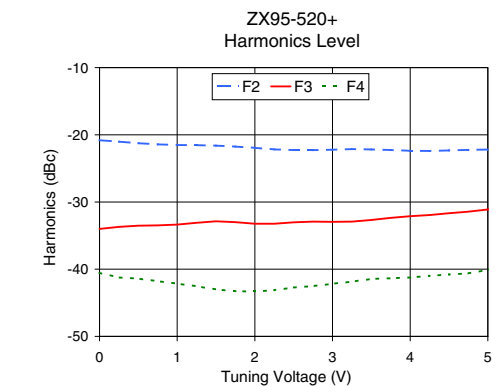
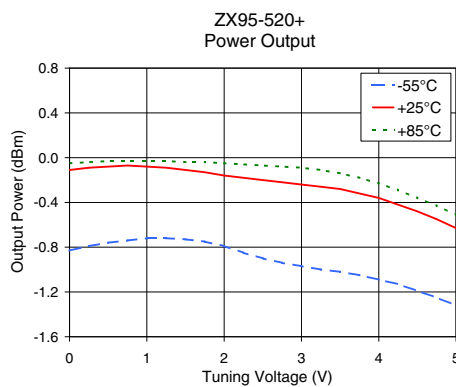
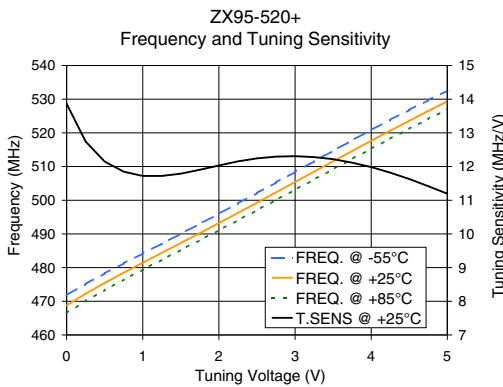


Performance Data & Curves*

ZX95-520+

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 500 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	13.86	471.8	468.8	466.5	-0.83	-0.11	-0.05	12.27	-20.8	-34.0	-40.6	0.08	0.10	-89.4	-115.2	-135.3	-154.0	1.0	-90.01
0.50	12.15	478.3	475.4	473.4	-0.76	-0.08	-0.03	12.29	-21.3	-33.5	-41.4	0.04	0.08	-91.4	-114.7	-134.9	-154.6	2.0	-98.96
0.75	11.85	481.3	478.5	476.4	-0.74	-0.07	-0.03	12.31	-21.4	-33.5	-41.8	0.04	0.09	-91.7	-114.8	-135.2	-154.9	3.5	-106.24
1.00	11.72	484.2	481.4	479.4	-0.72	-0.08	-0.03	12.32	-21.5	-33.4	-42.2	0.04	0.10	-91.2	-114.5	-134.9	-154.3	6.0	-108.93
1.25	11.72	487.1	484.4	482.3	-0.72	-0.09	-0.03	12.32	-21.5	-33.1	-42.5	0.04	0.11	-91.6	-114.7	-135.0	-153.3	8.5	-112.60
1.50	11.79	490.0	487.3	485.2	-0.73	-0.11	-0.04	12.33	-21.6	-32.9	-43.0	0.05	0.11	-91.9	-114.6	-134.9	-154.0	10.0	-114.54
1.75	11.90	493.0	490.3	488.2	-0.75	-0.13	-0.04	12.34	-21.8	-33.0	-43.3	0.05	0.11	-89.8	-115.3	-135.2	-154.9	20.8	-120.86
2.00	12.03	496.0	493.2	491.1	-0.79	-0.16	-0.05	12.35	-21.9	-33.2	-43.3	0.04	0.12	-89.2	-114.7	-135.1	-153.6	35.5	-125.33
2.25	12.15	499.0	496.2	494.1	-0.85	-0.18	-0.06	12.36	-22.2	-33.2	-43.1	0.04	0.13	-90.8	-113.7	-134.8	-154.8	60.7	-131.05
2.50	12.24	502.1	499.3	497.1	-0.90	-0.20	-0.07	12.38	-22.3	-33.0	-42.7	0.03	0.14	-90.7	-114.8	-134.8	-153.9	86.7	-133.67
2.75	12.30	505.3	502.3	500.1	-0.94	-0.22	-0.08	12.39	-22.3	-32.9	-42.5	0.02	0.15	-89.6	-114.7	-134.9	-154.0	100.0	-134.70
3.00	12.31	508.4	505.4	503.1	-0.97	-0.24	-0.09	12.40	-22.2	-33.0	-42.2	0.01	0.16	-89.8	-114.9	-134.9	-153.6	148.1	-138.16
3.25	12.28	511.6	508.5	506.1	-1.00	-0.26	-0.11	12.41	-22.1	-32.9	-41.9	0.02	0.17	-89.8	-114.8	-134.8	-154.0	177.0	-140.10
3.50	12.22	514.7	511.6	509.2	-1.02	-0.28	-0.14	12.41	-22.2	-32.7	-41.5	0.03	0.19	-91.5	-114.6	-134.6	-154.4	211.6	-141.36
3.75	12.11	517.8	514.6	512.2	-1.05	-0.32	-0.18	12.42	-22.3	-32.4	-41.4	0.06	0.20	-91.1	-113.7	-134.9	-153.3	302.4	-144.72
4.00	11.98	520.8	517.6	515.3	-1.09	-0.36	-0.23	12.42	-22.4	-32.1	-41.2	0.10	0.20	-89.1	-114.6	-134.5	-153.4	361.5	-146.01
4.25	11.82	523.9	520.6	518.3	-1.13	-0.42	-0.29	12.42	-22.4	-31.9	-41.0	0.14	0.21	-89.9	-113.7	-134.5	-154.1	507.5	-148.15
4.50	11.63	526.8	523.6	521.2	-1.19	-0.48	-0.36	12.42	-22.3	-31.7	-40.8	0.18	0.21	-89.6	-113.8	-134.4	-153.8	606.7	-150.09
4.75	11.42	529.7	526.5	524.1	-1.25	-0.55	-0.43	12.42	-22.2	-31.4	-40.6	0.22	0.21	-89.2	-114.1	-134.3	-153.9	851.6	-152.70
5.00	11.19	532.5	529.4	527.0	-1.32	-0.63	-0.51	12.42	-22.2	-31.1	-40.1	0.26	0.20	-87.9	-114.3	-134.2	-153.4	1000.0	-153.37

*at 25°C unless mentioned otherwise



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-Circuits' 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

