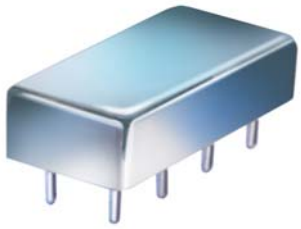
Engineering Development Model

Voltage Controlled Oscillator POS-ED9503A/2

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.



CASE STYLE : A06

ELECTRICAL SPECIFICATIONS 50Ω				
Parameter	**Min.**	**Typ.**	**Max.**	**Units**
Frequency	70		100	MHz
Tuning Voltage	1		10	V
Power Output		+7		dBm
Phase Noise				
at 1 kHz offset		-88		dBc/Hz
at 10 KHz offset		-110		dBc/Hz
at 100 KHz offset		-130		dBc/Hz
at 1000 kHz offset		-150		dBc/Hz
Pulling at 12 dBr PK-PK all phases		0.5		MHz
Pushing at Vcc=5V±0.25V		1		MHz/V
Tuning Sensitivity		5 - 10		MHz/V
Harmonic Suppression		-18		dBc
3 dB Modulation Bandwidth		490		kHz
Supply Voltage		5		V
Supply Current			30	mA

MAXIMUM RATINGS	
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Supply Voltage (Vcc)	+7V
Absolute Tuning Voltage (Vtune)	+12V

PIN CONNECTIONS	
RF OUT	10
VCC	14
V-TUNE	8
GROUND	3,4,5,6,7

Voltage Controlled Oscillator POS-ED9503A/2

Typical Performance Data

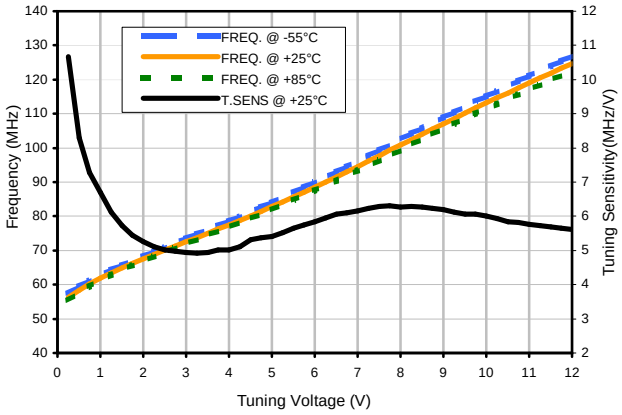
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			HARMONICS (dBc)			FREQ. PUSH (MHz/V)
		-55ºC	+25ºC	+85ºC	-55ºC	+25ºC	+85ºC	F2	F3	F4	
0.3	10.67	57.4	56.3	55.4	5.88	6.27	6.09	-19.0	-30.6	-43.6	0.59
0.5	8.29	59.4	58.4	57.6	6.17	6.52	6.35	-19.8	-32.8	-44.4	0.43
0.8	7.28	61.2	60.2	59.5	6.42	6.78	6.58	-20.3	-34.9	-44.9	0.49
1.0	6.70	62.8	61.9	61.3	6.65	7.02	6.83	-20.7	-36.0	-45.0	0.41
1.3	6.12	64.3	63.4	62.9	6.84	7.23	7.04	-21.1	-37.6	-43.9	0.35
1.5	5.72	65.7	64.9	64.3	7.01	7.40	7.23	-21.5	-39.4	-46.6	0.32
1.8	5.44	67.0	66.2	65.7	7.19	7.59	7.42	-21.9	-40.6	-48.1	0.29
2.0	5.26	68.4	67.6	67.0	7.33	7.74	7.58	-22.4	-42.4	-48.5	0.28
2.3	5.11	69.7	68.8	68.3	7.47	7.89	7.73	-22.9	-43.8	-48.7	0.27
2.5	5.02	70.9	70.1	69.6	7.62	8.04	7.87	-23.4	-46.1	-47.9	0.25
2.8	4.97	72.2	71.3	70.8	7.73	8.18	8.01	-23.9	-48.2	-47.2	0.26
3.0	4.94	73.5	72.6	72.0	7.84	8.31	8.15	-24.5	-51.5	-46.9	0.25
3.3	4.92	74.7	73.8	73.2	7.98	8.44	8.27	-25.1	-53.8	-45.2	0.24
3.5	4.94	76.0	75.0	74.4	8.09	8.57	8.39	-25.6	-53.2	-45.2	0.24
3.8	5.01	77.3	76.3	75.7	8.19	8.69	8.51	-26.2	-50.2	-44.9	0.24
4.0	5.01	78.6	77.5	76.9	8.30	8.80	8.63	-26.9	-48.2	-44.6	0.24
4.3	5.10	79.9	78.8	78.1	8.42	8.92	8.74	-27.6	-46.1	-44.1	0.24
4.5	5.32	81.3	80.1	79.4	8.53	9.05	8.84	-28.3	-44.4	-43.5	0.25
4.8	5.37	82.7	81.5	80.7	8.65	9.15	8.96	-29.0	-43.2	-43.3	0.25
5.0	5.40	84.1	82.8	82.0	8.77	9.27	9.07	-29.5	-41.9	-43.0	0.26
5.3	5.52	85.5	84.2	83.4	8.88	9.39	9.18	-30.1	-40.7	-42.8	0.28
5.5	5.66	87.0	85.6	84.7	8.98	9.51	9.29	-30.4	-38.7	-42.4	0.30
5.8	5.74	88.4	87.1	86.1	9.11	9.60	9.39	-30.8	-37.8	-38.3	0.32
6.0	5.83	89.9	88.5	87.5	9.21	9.72	9.48	-30.9	-37.2	-39.5	0.36
6.3	5.95	91.5	90.0	89.0	9.34	9.81	9.57	-31.0	-36.2	-39.6	0.40
6.5	6.07	93.0	91.5	90.4	9.45	9.92	9.66	-31.0	-35.4	-39.6	0.43
6.8	6.11	94.6	93.0	91.9	9.56	10.03	9.75	-30.9	-34.4	-39.6	0.48
7.0	6.16	96.1	94.6	93.4	9.67	10.12	9.84	-30.8	-34.0	-39.5	0.52
7.3	6.23	97.7	96.1	94.9	9.81	10.21	9.91	-30.7	-33.5	-39.5	0.57
7.5	6.28	99.3	97.7	96.4	9.91	10.32	9.98	-30.7	-32.9	-39.5	0.62
7.8	6.30	100.9	99.3	97.9	10.02	10.38	10.06	-30.6	-32.4	-39.4	0.66
8.0	6.27	102.5	100.9	99.4	10.12	10.46	10.11	-30.7	-31.8	-39.4	0.70
8.3	6.28	104.1	102.4	101.0	10.22	10.52	10.15	-30.7	-31.4	-39.5	0.74
8.5	6.27	105.7	104.0	102.5	10.31	10.59	10.18	-30.9	-30.8	-39.7	0.77
8.8	6.23	107.3	105.6	104.0	10.40	10.63	10.22	-31.1	-30.1	-39.7	0.79
9.0	6.19	108.9	107.1	105.5	10.48	10.67	10.22	-31.4	-29.7	-39.9	0.80
9.3	6.12	110.5	108.6	107.0	10.55	10.69	10.24	-31.8	-29.2	-39.9	0.82
9.5	6.07	112.0	110.2	108.5	10.61	10.70	10.24	-32.3	-28.7	-36.8	0.83
9.8	6.07	113.6	111.7	110.0	10.67	10.68	10.22	-32.7	-28.3	-38.2	0.84
10.0	6.00	115.1	113.2	111.4	10.72	10.67	10.18	-32.9	-27.8	-39.0	0.83
10.3	5.93	116.6	114.6	112.9	10.73	10.64	10.14	-32.7	-27.3	-39.0	0.82
10.5	5.84	118.1	116.1	114.3	10.75	10.63	10.07	-32.3	-25.5	-39.1	0.81
10.8	5.82	119.6	117.6	115.7	10.73	10.58	10.00	-31.5	-25.2	-38.9	0.81
11.0	5.77	121.1	119.0	117.1	10.71	10.50	9.95	-30.5	-24.8	-38.8	0.80
11.3	5.72	122.5	120.4	118.5	10.65	10.40	9.87	-29.1	-24.4	-38.9	0.80
11.5	5.68	124.0	121.9	119.9	10.61	10.29	9.78	-27.7	-24.0	-38.8	0.80
11.8	5.66	125.4	123.3	121.3	10.52	10.18	9.68	-26.4	-23.5	-38.5	0.80
12.0	5.62	126.9	124.7	122.7	10.44	10.05	9.57	-25.1	-23.0	-38.3	0.80

FREQ OFFSET (KHz)	PHASE NOISE (dBc/Hz)
1	-88
10	-110
100	-130
1000	-150

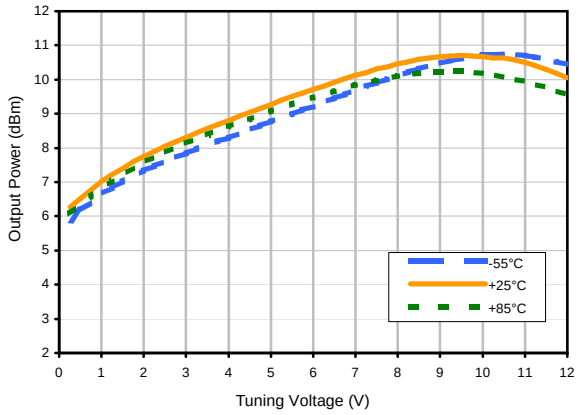
Voltage Controlled Oscillator POS-ED9503A/2

Typical Performance Data

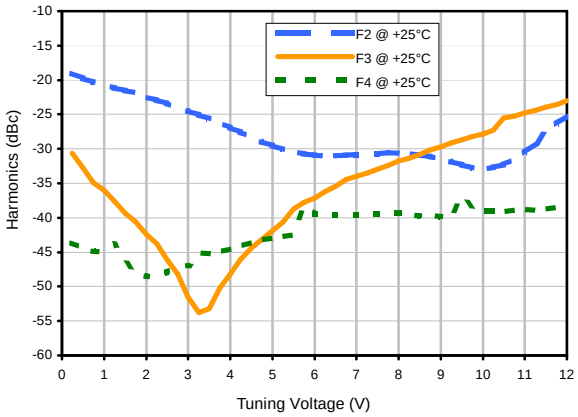
Frequency and Tuning Sensitivity



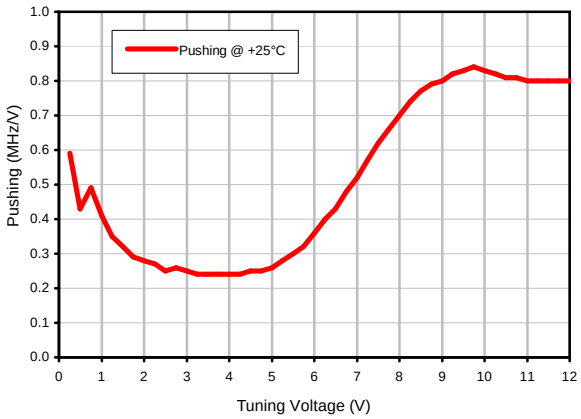
Power Output



Harmonics Level



Frequency Pushing

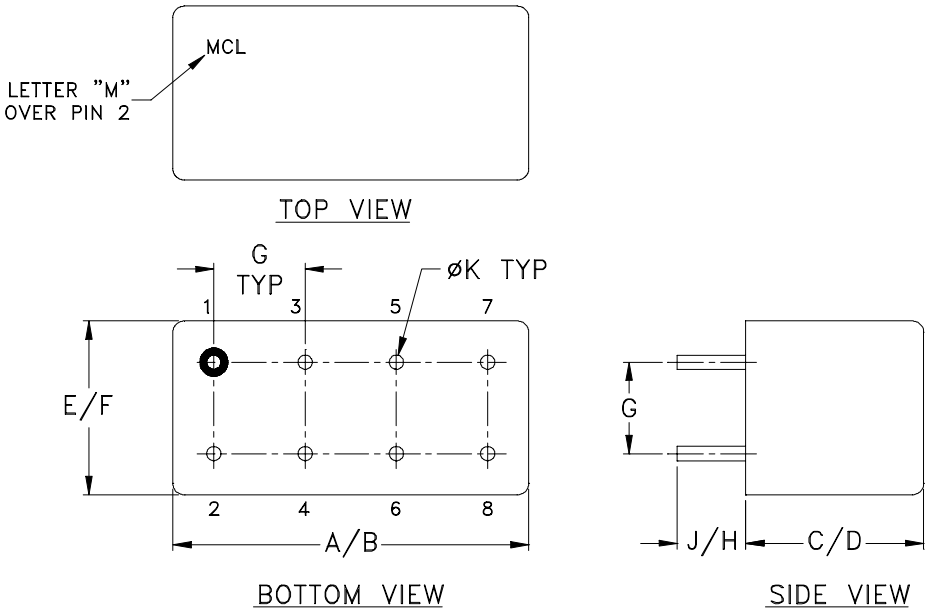


Phase Noise

Case Style A

A01
A04
A05
A06

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	WT, GRAM
A01	.770 (19.56)	.800 (20.32)	.385 (9.78)	.400 (10.16)	.370 (9.40)	.400 (10.16)	.200 (5.08)	.20 (5.08)	.14 (3.56)	.031 (.79)	5.2
A04			.200 (5.08)	.210 (5.33)							3.7
A05			.240 (6.10)	.250 (6.35)							3.7
A06			.285 (7.24)	.310 (7.87)							5.2

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

Notes:

1. Header material: C.R.S.
   Pin material: #52 alloy.
   Cover material: Cupro-Nickel.
2. Pin finish: Electro Tin-Silver.
3. Insulated spacer available. Request P/N B14-045-01.
4. Tolerance on pin diameter +/-.005 inch.
5. Glass meniscus 0.015 inch max.
6. Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.

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Environmental Specifications ENV01

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D