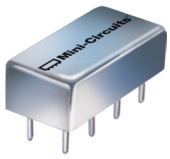
Plug-In

Voltage Controlled Oscillator

POS-1025+

Linear Tuning 685 to 1025 MHz



Generic photo used for illustration purposes only

CASE STYLE: A06

Features

- wide band
- low phase noise, -136 dBc/Hz typ. @ 1 MHz offset
- high power output, +8.5 dBm typ.
- hermetically sealed

Applications

- cellular up and down converters
- wideband frequency synthesizers
- signal generators

+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.
POS-1025+	685	1025	+8.5	-68	-90	-112	-136	1	16	19 - 58	47	1.2	-90	-23	-17	5	0.6	12	22

Pin Connections

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

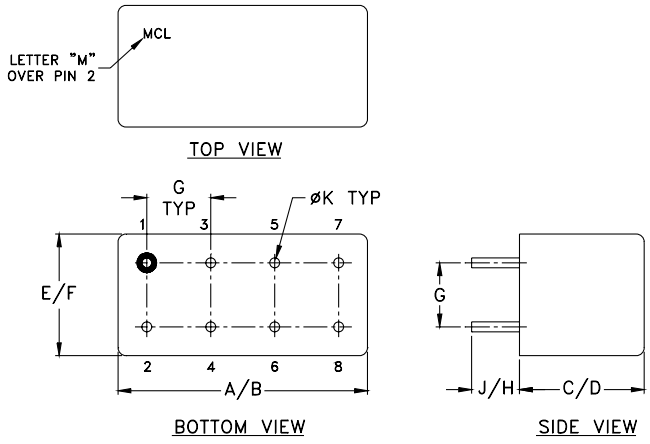
Maximum Ratings

Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	16V
Absolute Max. Tuning Voltage (Vtune)	18V
All specifications	50 ohm system

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

Environmental Ratings: ENV01

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	wt
.770	.800	.285	.310	.370	.400	.200	.20	.14	.031	grams
19.558	20.32	7.239	7.874	9.398	10.16	5.08	5.08	3.556	0.7874	5.2

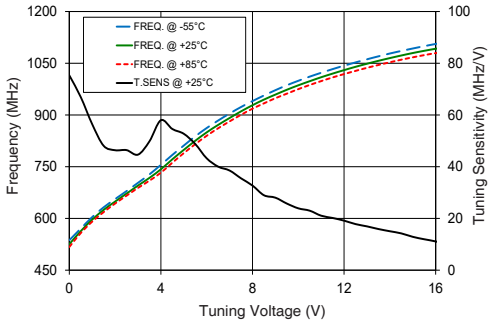
Performance Data & Curves*

POS-1025+

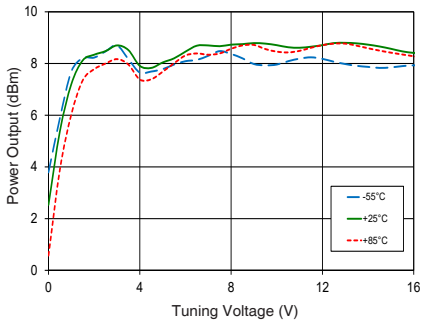
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			Icc (mA)	HARMONICS (dBc)			FREQ. PUSH (MHz/V)	FREQ. PULL (MHz)	PHASE NOISE (dBc/Hz) at offsets				FREQ OFFSET (kHz)	PHASE NOISE at 855 MHz (dBc/Hz)
		-55°C	+25°C	+85°C	-55°C	+25°C	+85°C		F2	F3	F4			1kHz	10kHz	100kHz	1MHz		
0.00	75.32	536.9	525.5	517.2	3.79	2.53	0.57	17.50	-28.0	-16.6	-22.0	0.66	0.10	-67.95	-84.9	-105.9	-126.9	1.0	-69.42
1.00	56.42	603.9	596.7	590.8	7.69	7.20	6.03	17.71	-25.3	-36.6	-25.7	0.98	0.43	-69.34	-90.6	-111.7	-131.1	2.5	-76.35
2.00	46.38	656.2	648.9	643.2	8.23	8.34	7.78	17.58	-26.9	-30.4	-30.1	0.07	0.61	-69.46	-91.9	-113.3	-134.5	4.2	-82.37
3.00	44.68	703.3	695.3	688.5	8.70	8.70	8.17	17.17	-24.8	-29.7	-32.3	0.17	0.58	-70.72	-92.2	-113.9	-135.2	7.3	-87.27
4.00	57.98	755.5	742.6	732.7	7.65	7.91	7.38	16.63	-22.7	-30.9	-67.9	1.76	2.83	-66.45	-88.5	-110.2	-133.3	10.0	-90.28
5.00	52.72	811.4	798.8	789.4	7.78	8.04	7.68	16.54	-21.6	-31.0	-45.8	1.25	0.48	-68.17	-89.3	-111.4	-134.5	12.2	-92.18
6.00	43.25	862.1	849.6	839.7	8.09	8.46	8.31	16.52	-22.2	-32.1	-46.4	0.75	2.06	-69.10	-90.7	-112.5	-135.4	24.0	-98.33
7.00	38.52	904.2	891.2	881.4	8.30	8.70	8.34	16.48	-22.8	-33.6	-40.5	0.63	1.93	-67.25	-90.4	-112.7	-136.6	40.2	-102.99
8.00	32.71	940.2	928.2	918.2	8.37	8.73	8.57	16.46	-22.5	-33.0	-37.5	0.52	0.26	-67.40	-90.6	-113.3	-138.1	66.3	-107.84
8.50	28.97	956.5	944.6	933.7	8.20	8.75	8.70	16.46	-22.1	-32.4	-38.3	0.39	2.44	-67.30	-89.9	-112.4	-137.2	100.0	-112.36
9.50	25.76	986.2	973.1	961.8	7.93	8.77	8.56	16.44	-22.9	-32.5	-37.6	0.06	0.23	-67.12	-90.7	-113.0	-137.9	111.3	-113.52
10.00	23.91	999.1	986.0	974.9	7.96	8.71	8.46	16.42	-23.9	-32.3	-38.0	0.09	2.44	-66.79	-89.8	-112.7	-137.4	156.2	-117.31
11.00	21.06	1022.3	1009.4	998.2	8.19	8.61	8.49	16.40	-24.5	-31.8	-38.7	0.33	2.17	-68.31	-90.2	-113.0	-137.2	183.5	-119.02
11.50	20.18	1033.0	1020.0	1008.9	8.24	8.65	8.61	16.39	-25.1	-32.8	-40.1	0.40	0.35	-69.24	-90.1	-112.9	-137.0	219.3	-120.93
12.50	17.82	1052.3	1039.6	1027.8	8.07	8.79	8.77	16.36	-27.7	-33.0	-41.2	0.55	2.90	-68.49	-90.9	-113.2	-136.9	307.9	-124.56
13.00	16.94	1061.4	1048.5	1036.7	7.98	8.80	8.77	16.34	-28.5	-33.1	-43.4	0.61	2.96	-67.26	-90.7	-113.1	-136.7	361.5	-126.06
14.00	15.05	1078.2	1065.0	1052.8	7.87	8.73	8.59	16.31	-30.3	-33.6	-45.1	0.71	0.50	-68.55	-91.2	-113.2	-136.3	507.5	-129.50
14.50	14.22	1085.7	1072.5	1060.3	7.83	8.66	8.50	16.29	-31.3	-33.3	-46.2	0.78	1.26	-68.84	-91.2	-113.2	-136.1	606.7	-131.02
15.50	11.96	1099.5	1086.0	1073.5	7.90	8.47	8.35	16.25	-34.1	-33.8	-47.3	0.88	3.54	-67.88	-91.2	-113.4	-135.7	851.6	-134.09
16.00	11.12	1105.9	1092.0	1079.3	7.93	8.41	8.28	16.22	-35.8	-33.6	-48.3	0.97	4.07	-65.84	-90.8	-113.1	-135.0	1000.0	-135.53

*at 25°C unless mentioned otherwise

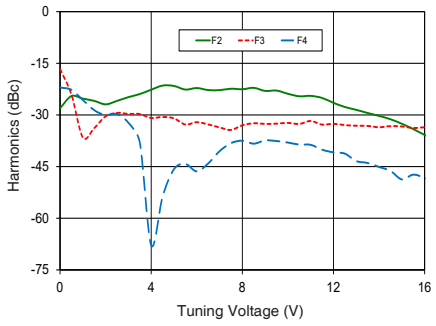
POS-1025+
Frequency and Tuning Sensitivity



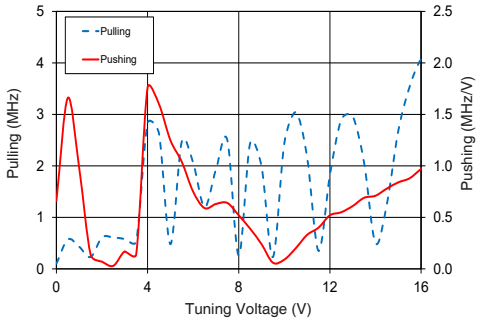
POS-1025+
Power Output



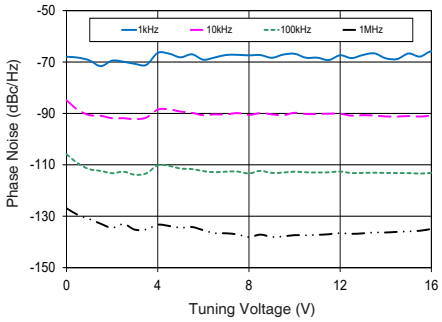
POS-1025+
Harmonics Level



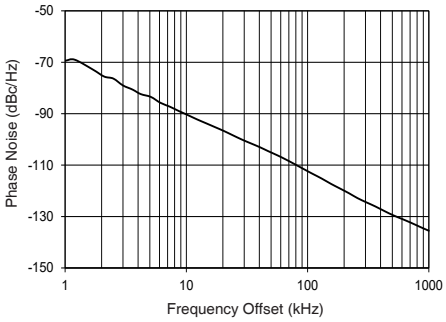
POS-1025+
Frequency Pulling & Pushing (Vcc ± 5%)



POS-1025+
Phase Noise Vs. Tuning Voltage



POS-1025+
Phase Noise



Additional 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.

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

Voltage Controlled Oscillator POS-1025+

Typical Performance Data

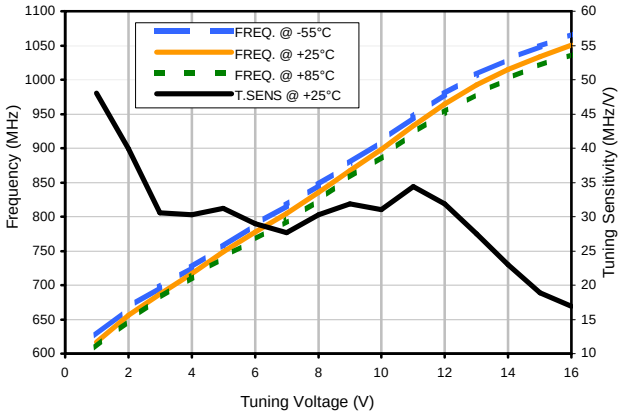
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			HARMONICS (dBc)			FREQ. PUSH (MHz/V)
		-55ºC	+25ºC	+85ºC	-55ºC	+25ºC	+85ºC	F2	F3	F4	
1.0	48.00	626.9	616.5	609.1	5.72	5.15	4.56	-25.2	-23.5	-33.8	0.51
2.0	39.90	667.2	656.4	649.6	7.12	7.25	6.98	-33.6	-21.9	-44.1	-0.07
3.0	30.60	697.3	687.0	681.7	7.91	8.11	7.97	-29.1	-22.8	-36.7	0.08
4.0	30.30	725.9	717.2	711.9	7.45	8.34	8.55	-27.4	-23.8	-32.4	0.60
5.0	31.20	755.7	748.4	740.0	7.68	8.91	8.81	-27.9	-24.9	-35.1	-0.38
6.0	29.00	788.7	777.4	766.4	8.61	9.19	8.74	-29.0	-28.0	-43.8	-0.42
7.0	27.70	816.9	805.1	793.9	8.39	8.99	8.50	-28.0	-36.6	-50.7	-0.27
8.0	30.30	846.7	835.5	824.7	7.95	8.64	8.27	-27.2	-36.0	-45.9	0.38
9.0	31.90	879.0	867.3	856.8	7.31	8.58	8.30	-27.5	-41.3	-42.4	0.07
10.0	31.00	910.3	898.4	888.2	7.42	8.15	8.00	-28.8	-36.6	-38.7	1.33
11.0	34.40	946.2	932.8	922.0	7.46	8.03	7.92	-31.8	-33.1	-37.0	0.92
12.0	31.90	979.2	964.7	952.7	7.69	8.32	8.26	-31.6	-32.4	-39.2	-0.05
13.0	27.50	1007.1	992.1	978.9	8.15	8.60	8.36	-27.5	-33.0	-42.8	-0.90
14.0	23.00	1029.6	1015.1	1001.4	8.52	8.97	8.63	-25.7	-34.5	-47.4	-1.08
15.0	18.90	1048.8	1034.0	1020.2	8.48	9.09	8.86	-23.6	-35.9	-47.7	-1.22
16.0	16.90	1065.9	1050.9	1036.6	8.44	8.98	8.87	-23.5	-36.2	-46.1	-1.32

FREQ OFFSET (KHz)	PHASE NOISE (dBc/Hz)
1	-65
10	-84
100	-104
1000	-124

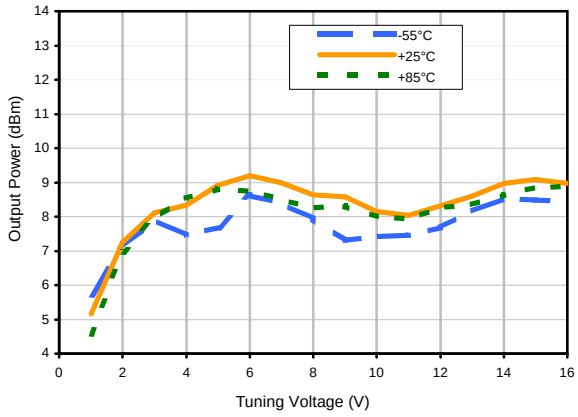
Voltage Controlled Oscillator POS-1025+

Typical Performance Data

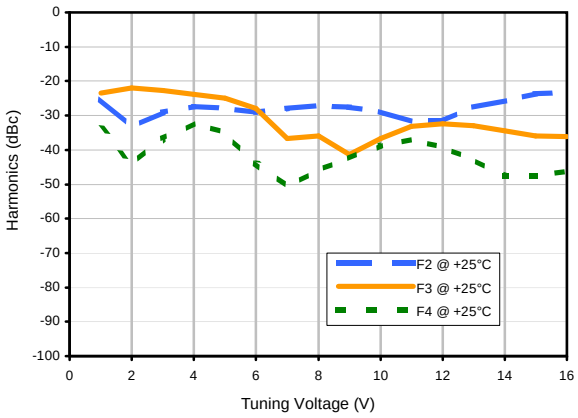
Frequency and Tuning Sensitivity



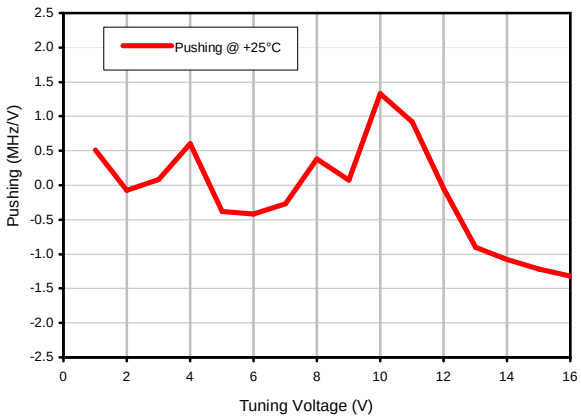
Power Output



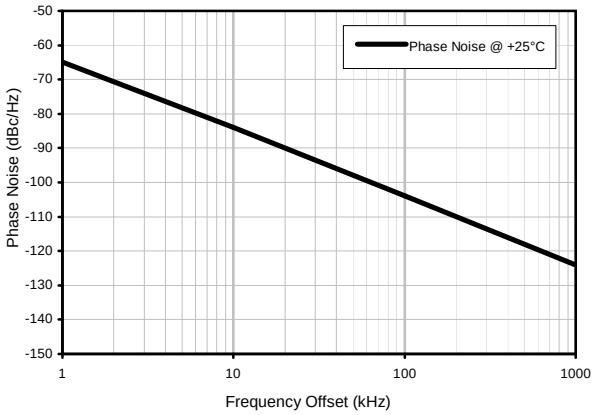
Harmonics Level



Frequency Pushing



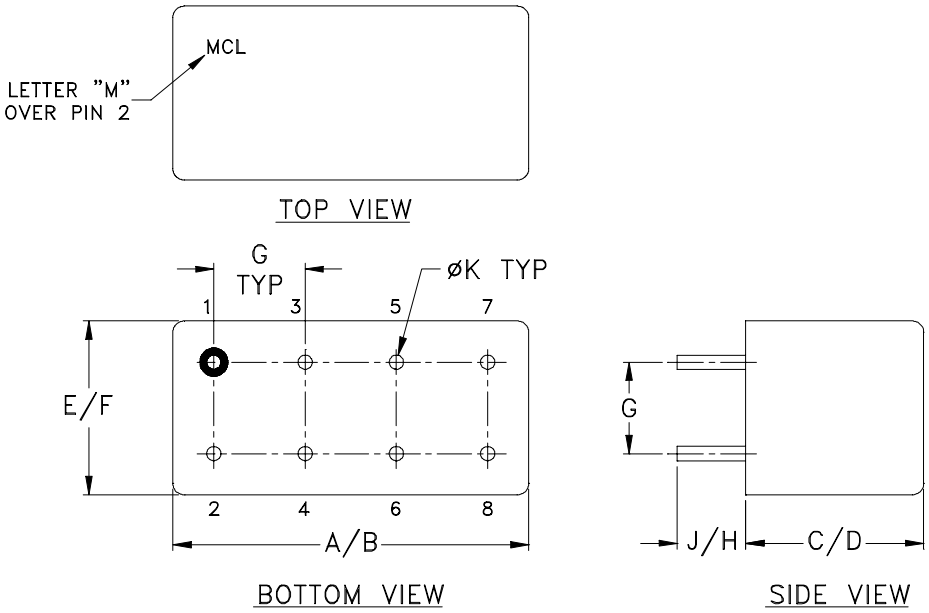
Phase Noise



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.

Mini-Circuits®
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Mini-Circuits

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