Coaxial

Voltage Controlled Oscillator

ZOS-200+

Dual Output 100 to 200 MHz

Features
- octave bandwidth
- linear tuning, 7.7 MHz/V typ.
- excellent harmonic suppression, -25 dBc typ.
- rugged shielded case
- protected by US Patent, 6,943,629

Connectors	Model
SMA	ZOS-200+

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Applications
- auxiliary output freq. monitoring
- load insensitive source

Electrical Specifications

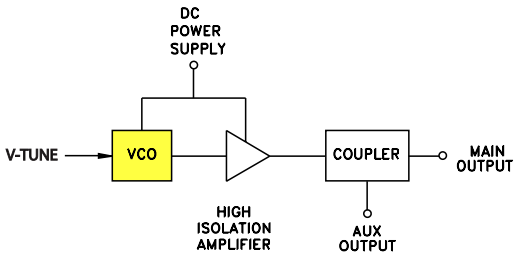
FREQUENCY (MHz)		POWER OUTPUT (dBm) Typ.		TUNING VOLTAGE (V)		PHASE NOISE (dBc/Hz) SSB at offset frequencies: Typ.			PULLING (MHz) pk-pk (open/short)	PUSHING (MHz/V)	TUNING SENSITIVITY (MHz/V)	HARMONICS (dBc)		3 dB MODULATION BANDWIDTH (MHz)	DC OPERATING POWER	
Min.	Max.	Main	Aux.	Min.	Max.	10 kHz	100 kHz	1 MHz	Typ.	Typ.	Typ.	Typ.	Max.	Typ.	Vcc (volts)	Current (mA) Max.
100	200	+10	-11	1	16	-106	-126	-141	0.015	0.42	7.7	-25	-20	0.1	12	140

Maximum Ratings

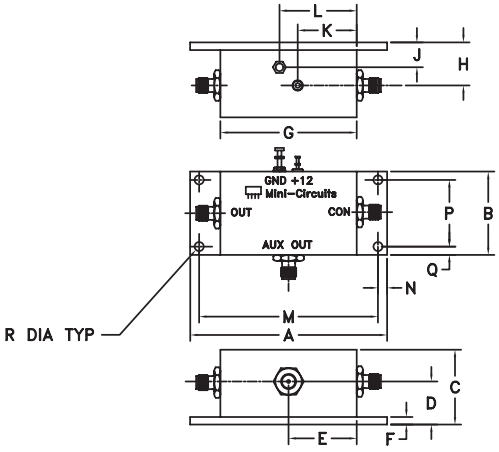
Operating Temperature	-55°C to 85°C
Storage Temperature	-55°C to 100°C
Absolute Max. Supply Voltage (Vcc)	+16V
Absolute Max. Tuning Voltage (Vtune)	+18V

all specifications: 50 ohm system
Permanent damage may occur if any of these limits are exceeded.

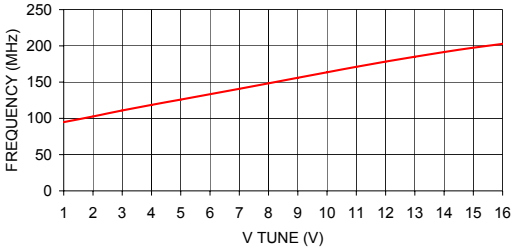
electrical schematic



Outline Drawing



ZOS-200+
FREQUENCY vs.TUNING VOLTAGE



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	wt
3.25	1.38	1.25	.71	1.13	.125	2.25	.71	.41	.98	1.28	2.950	.15	1.100	.14	.150	grams
82.55	35.05	31.75	18.03	28.70	3.18	57.15	18.03	10.41	24.89	32.51	74.93	3.81	27.94	3.56	3.81	180

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 ZOS-200+

Typical Performance Data

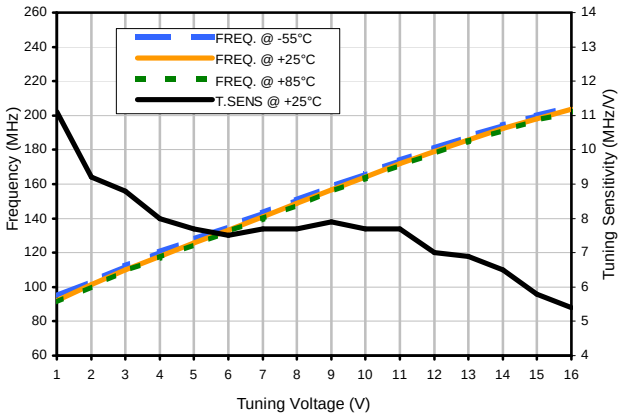
V TUNE	TUNE SENS (MHz/V)	FREQUENCY (MHz)			POWER OUTPUT (dBm)			HARMONICS (dBc)			FREQ. PUSH (MHz/V)
		-55ºC	+25ºC	+85ºC	-55ºC	+25ºC	+85ºC	F2	F3	F4	
1.0	11.10	94.7	92.1	91.0	11.35	8.84	10.23	-34.2	-24.5	-36.0	0.15
2.0	9.20	103.2	101.2	100.4	11.37	9.09	10.28	-30.8	-24.3	-35.5	0.24
3.0	8.80	112.2	110.0	109.1	11.23	10.84	10.07	-26.7	-25.7	-37.4	0.16
4.0	8.00	120.3	118.0	117.0	11.27	10.85	10.06	-26.4	-25.9	-37.7	0.17
5.0	7.70	127.9	125.7	124.6	11.28	10.76	10.00	-26.6	-26.5	-38.5	0.13
6.0	7.50	135.5	133.2	132.2	11.55	10.69	9.93	-26.9	-26.7	-38.9	0.15
7.0	7.70	143.1	140.9	139.8	11.54	10.93	10.13	-27.2	-26.9	-38.7	0.20
8.0	7.70	150.7	148.7	147.6	11.69	10.98	10.18	-27.6	-27.3	-39.0	0.22
9.0	7.90	158.7	156.5	155.3	11.52	10.78	9.99	-28.7	-27.7	-38.7	0.26
10.0	7.70	166.1	164.2	163.2	11.87	10.65	9.84	-29.5	-28.2	-38.2	0.18
11.0	7.70	173.9	171.9	170.7	11.75	10.97	10.16	-30.8	-28.6	-37.6	0.25
12.0	7.00	180.9	179.0	177.9	11.26	10.45	9.61	-31.3	-29.1	-37.1	0.12
13.0	6.90	187.6	185.9	184.8	11.56	10.73	9.47	-32.0	-29.8	-36.7	0.10
14.0	6.50	194.2	192.4	191.2	11.47	10.63	9.79	-32.9	-29.9	-36.2	0.15
15.0	5.80	200.0	198.2	197.1	11.36	10.52	9.67	-33.1	-30.1	-36.3	0.15
16.0	5.40	205.2	203.6	202.5	11.22	10.45	9.59	-33.4	-30.6	-36.2	0.33

FREQ OFFSET (KHz)	PHASE NOISE (dBc/Hz)
10	-106
100	-126
1000	-141

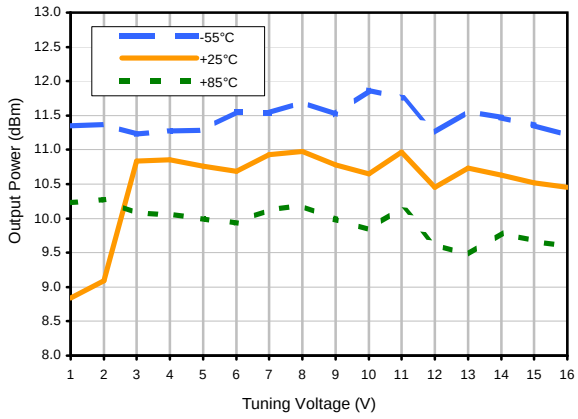
Voltage Controlled Oscillator ZOS-200+

Typical Performance Data

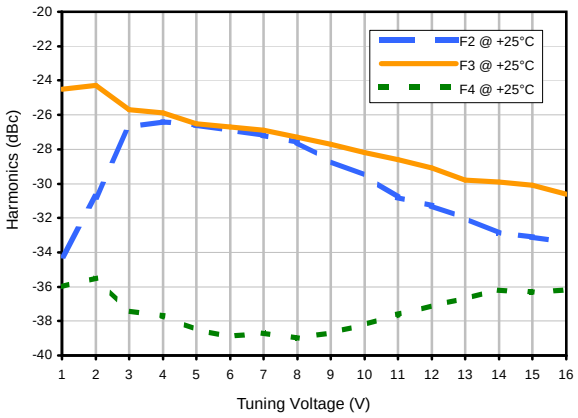
Frequency and Tuning Sensitivity



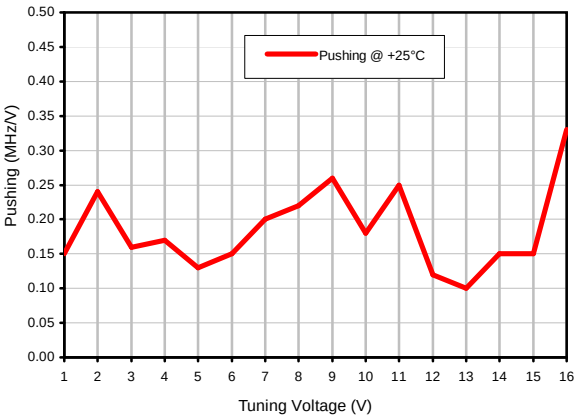
Power Output



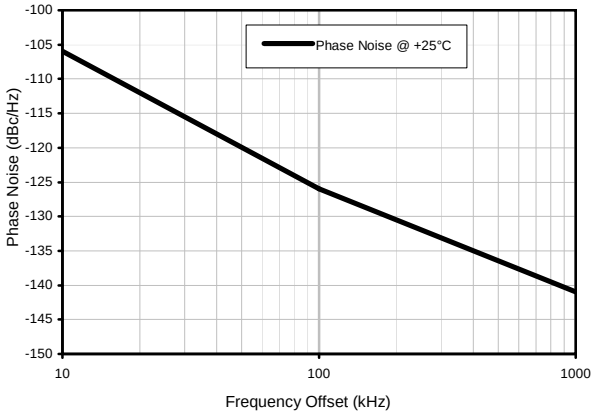
Harmonics Level



Frequency Pushing



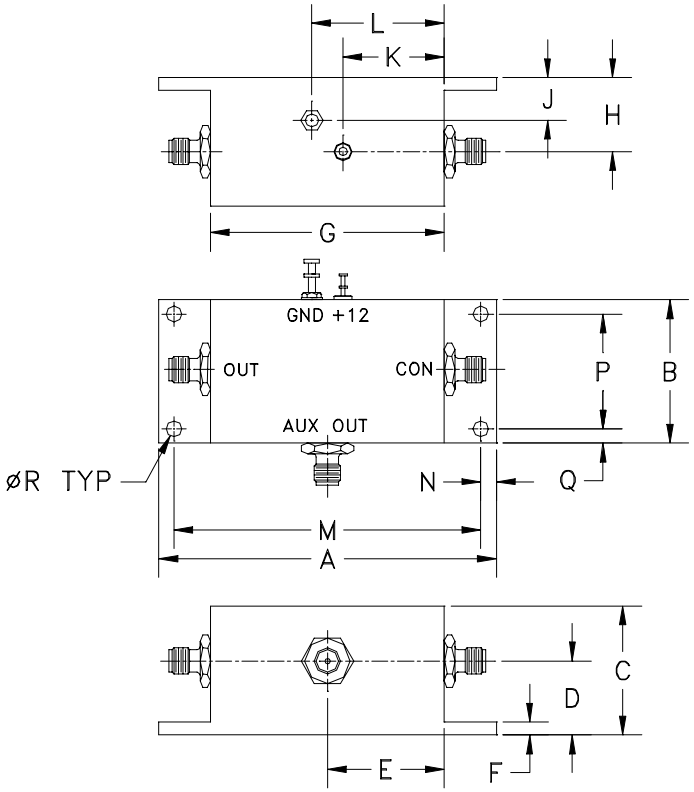
Phase Noise



Case Style BR

BR386

Outline Dimensions



CASE #	A	B	C	D	E	F	G	H	J	K	L
BR386	3.25 (82.55)	1.38 (35.05)	1.25 (31.75)	.71 (18.03)	1.13 (28.70)	.125 (3.18)	2.25 (57.15)	.71 (18.03)	.41 (10.41)	.98 (24.89)	1.28 (32.51)

CASE #	M	N	P	Q	R	WT. GRAM
BR386	2.950 (74.93)	.15 (3.81)	1.100 (27.94)	.14 (3.56)	.150 (3.81)	180

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

Notes:

1. Case material: Aluminum alloy.
2. Case finish:

   For RoHS Case Styles: Clear chemical conversion coating, non-chrome or trivalent chrome based.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

Mini-Circuits

Environmental Specifications **ENV28T8**

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 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I

This document and its contents are the property of Mini-Circuits.