Non-Catalog Model

Active Frequency Mixer UNCL-X1

Level 7 (LO Power +7 dBm)

CASE STYLE : A01

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.

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

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (fL to fU)	1		500	MHz
	RF (fL to fU)	1		500	MHz
	IF	10		500	MHz
Conversion Loss	**mid band**	-1.0	1.6		dB
	Total Range	-1.0			dB
LO-RF Isolation	**Low Range**	40	60		dB
	Mid Range	25	30		dB
	Upper Range	20	25		dB
LO-IF Isolation	**Low Range**	30	50		dB
	Mid Range	20	30		dB
	Upper Range	18	26		dB
1 dB Comp. Input Power			+1		dBm
Supply Voltage			12		V
Operating Current			36		mA

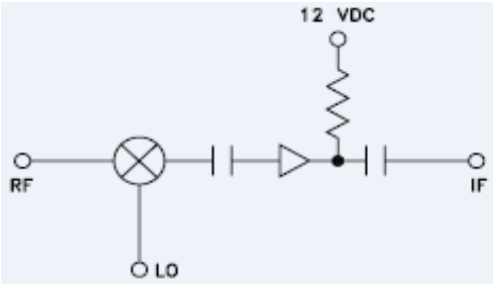
Notes: Low Range = [fL to 10fL] Mid Range = [10fL to fU/2] Upper Range = [fU/2 to fU]
mid band = [2fL to fU/2]

DC power is applied at pin 4.
Hermetically sealed.
Load insensitive

MAXIMUM RATINGS	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

PIN CONNECTIONS	
LO	7
RF	8
IF	1
DC	4
GROUND	3, 5, 6
NOT USED	2

Electrical Schematics



Frequency Mixer UNCL-X1

Typical Performance Data

RF (MHz)	LO (MHz)	CONVERSION LOSS (dB) @LO (dBm)		
		+4	+7	+10
1.0	31.0	-0.09	-0.39	-0.54
2.0	32.0	-0.75	-1.03	-1.16
5.0	35.0	-1.16	-1.47	-1.57
10.0	41.0	-1.28	-1.56	-1.64
20.0	50.0	-1.25	-1.55	-1.63
49.3	79.3	-1.22	-1.50	-1.59
50.0	80.0	-1.22	-1.51	-1.58
97.6	67.6	-1.24	-1.53	-1.60
100.0	70.0	-1.26	-1.54	-1.60
145.9	115.9	-1.34	-1.59	-1.63
194.2	164.2	-1.43	-1.64	-1.67
200.0	170.0	-1.43	-1.63	-1.67
242.5	212.5	-1.47	-1.66	-1.69
250.0	220.0	-1.45	-1.65	-1.68
290.7	260.7	-1.46	-1.66	-1.68
339.0	309.0	-1.42	-1.62	-1.66
387.3	357.3	-1.39	-1.59	-1.63
435.6	405.6	-1.31	-1.52	-1.57
483.9	453.9	-1.18	-1.42	-1.48
500.0	470.0	-1.16	-1.39	-1.47

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
1.0	81.1	78.8	78.7	68.5	69.4	70.1
2.0	76.4	75.8	74.9	67.8	67.6	67.7
5.0	69.6	69.0	68.5	65.7	63.9	62.9
10.0	63.9	63.4	63.1	61.2	59.1	57.7
20.0	58.7	58.3	58.1	56.7	54.1	52.4
49.3	50.7	50.4	50.0	48.8	46.1	44.5
50.0	50.6	50.3	49.9	48.7	46.0	44.4
97.6	44.7	44.4	44.2	43.1	41.2	39.8
100.0	44.5	44.3	44.1	43.1	41.1	39.8
145.9	41.7	41.4	41.1	41.2	39.2	37.7
194.2	39.3	38.8	38.5	39.3	37.4	35.7
200.0	38.9	38.6	38.3	38.9	37.2	35.6
242.5	37.5	37.2	36.9	36.5	35.5	34.3
250.0	37.2	37.0	36.8	36.2	35.4	34.3
290.7	36.0	35.7	35.3	34.0	33.5	32.5
339.0	35.1	34.8	34.6	31.5	31.7	31.5
387.3	34.2	33.7	33.2	29.2	29.5	29.0
435.6	33.5	33.1	32.7	27.8	28.4	28.4
483.9	33.0	32.5	32.1	26.1	27.3	27.5
500.0	33.0	32.6	32.2	26.1	27.0	27.4

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Typical Performance Data

RF/LO (MHz)	RF VSWR (:1) @LO (dBm)			LO VSWR (:1) @LO (dBm)		
	+4	+7	+10	+4	+7	+10
5.0	1.20	1.21	1.23	2.21	2.96	3.93
10.0	1.11	1.12	1.14	2.09	2.86	3.84
20.0	1.06	1.06	1.09	1.97	2.77	3.74
50.0	1.03	1.05	1.09	1.83	2.61	3.58
57.5	1.03	1.05	1.09	1.86	2.65	3.62
95.0	1.03	1.05	1.09	1.82	2.59	3.54
100.0	1.03	1.05	1.09	1.76	2.50	3.40
140.0	1.02	1.05	1.09	1.76	2.49	3.40
185.0	1.01	1.06	1.11	1.77	2.20	3.44
200.0	1.01	1.07	1.11	1.74	2.46	3.32
230.0	1.03	1.08	1.13	1.74	2.46	3.33
245.0	1.05	1.10	1.14	1.79	2.54	3.43
250.0	1.09	1.12	1.15	1.83	2.58	3.47
275.0	1.07	1.11	1.16	1.82	2.54	3.40
320.0	1.09	1.15	1.19	1.85	2.56	3.42
365.0	1.13	1.19	1.24	1.92	2.65	3.52
410.0	1.18	1.24	1.28	1.95	2.66	3.52
455.0	1.23	1.29	1.34	2.01	2.72	3.56
485.0	1.27	1.33	1.38	2.10	2.82	3.66
500.0	1.30	1.36	1.41	2.11	2.82	3.67

IF (MHz)	IF VSWR (:1) @LO (dBm)		
	+4	+7	+10
5.0	1.21	1.19	1.18
10.0	1.19	1.16	1.15
20.0	1.18	1.16	1.14
50.0	1.19	1.16	1.15
57.5	1.19	1.16	1.15
95.0	1.18	1.16	1.15
100.0	1.18	1.16	1.15
140.0	1.18	1.16	1.15
185.0	1.18	1.16	1.15
200.0	1.18	1.16	1.15
230.0	1.18	1.16	1.15
245.0	1.17	1.16	1.15
250.0	1.17	1.15	1.14
275.0	1.18	1.16	1.16
320.0	1.17	1.16	1.16
365.0	1.16	1.16	1.16
410.0	1.15	1.15	1.15
455.0	1.14	1.15	1.15
485.0	1.14	1.15	1.15
500.0	1.13	1.15	1.16

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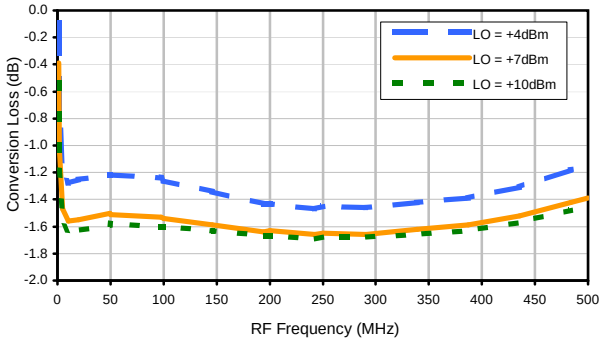
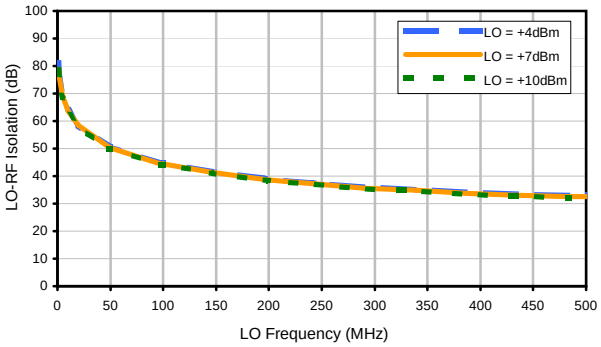
Frequency Mixer UNCL-X1

Typical Performance Curves

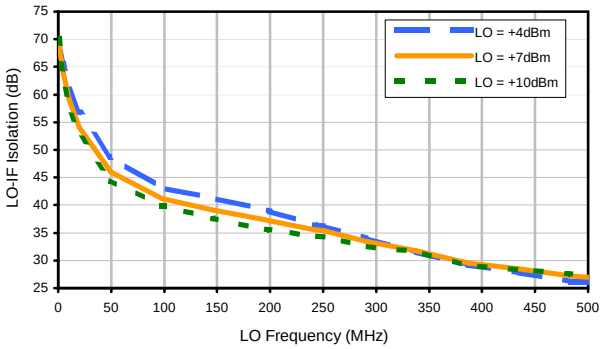
Conversion Loss



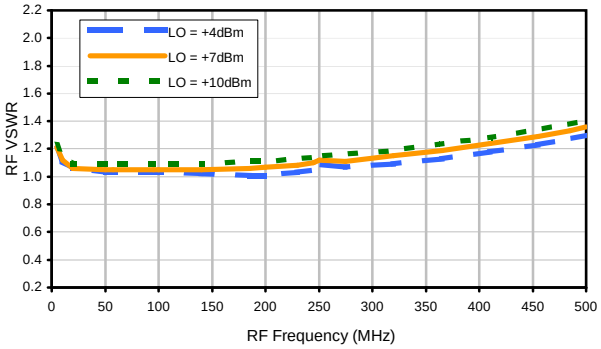
LO-RF Isolation



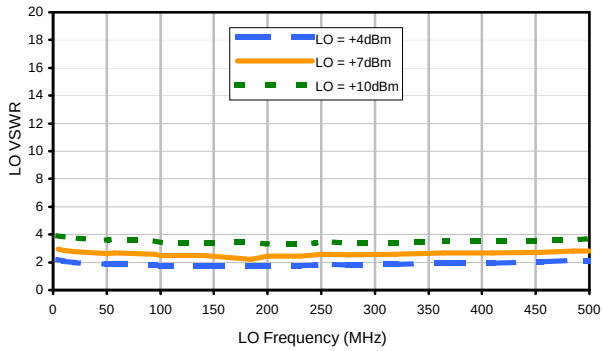
LO-IF Isolation



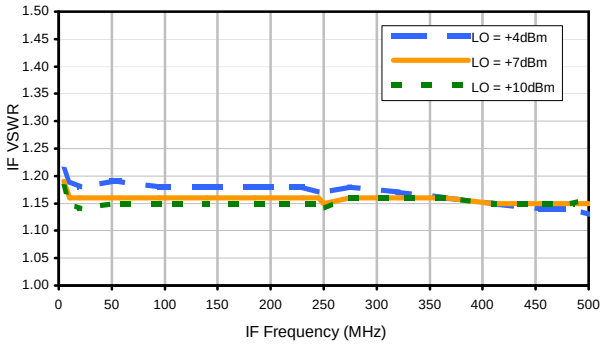
RF VSWR



LO VSWR



IF VSWR



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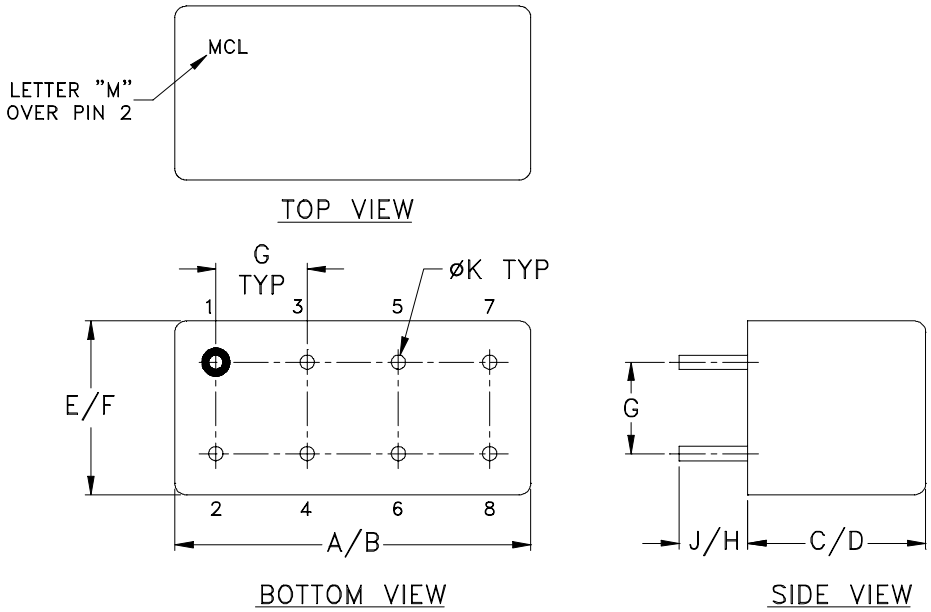
Case Style A

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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