High IP3

Frequency Mixer

LAVI-22VH+

Level 21 (LO Power +21 dBm) 425 to 2200 MHz

CASE STYLE: CK605
PRICE: $24.95 ea. QTY. (1-9)
$17.95 ea. QTY. (100)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

Maximum Ratings

Operating Temperature	-45°C to 85°C
Storage Temperature	-55°C to 100°C
LO Power	+24 dBm
RF Power	+21 dBm

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

Pin Connections

LO	10
RF	2
IF	14
GROUND	1,3,4,5,6,7,8,9,11,12,13,15,16

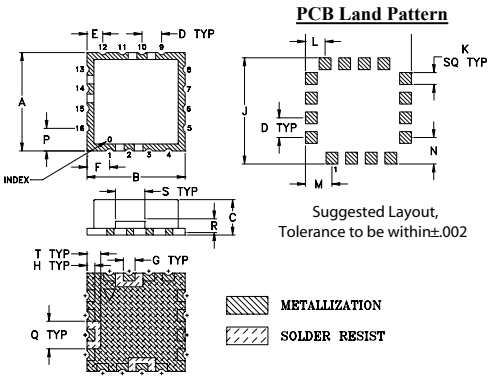
Features

- very high IP3, 31 dBm typ.
- wideband, 425 to 2200 MHz
- excellent L-R isolation, 50 dB typ. and L-I isolation, 45 dB typ.
- high 1 dB compression, 20 dBm typ.
- shielded metal cover
- aqueous washable
- protected by US Patent 6,807,407

Applications

- cellular/PCS base station
- wideband receiver

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J	K
.500	.500	.180	.100	.080	.115	.060	.040	.540	.060
12.7	12.7	4.572	2.54	2.032	2.921	1.524	1.016	13.72	1.524

L	M	N	P	Q	R	S	T	wt.
.100	.135	.135	.115	.140	.070	.150	.070	grams
2.54	3.429	3.429	2.921	3.556	1.778	3.81	1.778	1.0

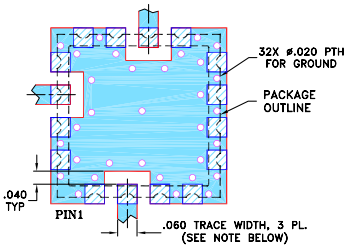
Electrical Specifications (T_{AMB}=25°C)

FREQUENCY (MHz)			CONVERSION LOSS (dB)			RF in at 1dB Compr (dBm)	IP3 (dBm)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)	
RF	LO	IF	Typ.	σ	Max.	Typ.	Typ.	Typ.	Min.	Typ.	Min.
425-2200	525-2400	100-700	7.7	0.2	9.6	+20	31	50	36	45	28

Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)	IF Freq. (MHz)	VSWR IF (:1)
RF	LO	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm	LO +21dBm		LO +21dBm
425.10	525.10	6.17	67.24	60.36	2.21	4.27	30.14	100.00	1.83
536.00	642.30	5.76	58.74	54.00	1.78	4.25	29.11	140.00	1.73
647.00	759.50	5.69	52.80	50.79	1.84	4.17	30.37	180.00	1.65
868.90	993.90	6.49	47.06	48.75	2.36	3.38	30.83	200.00	1.49
979.80	1111.10	6.97	46.09	47.66	2.51	2.71	30.43	250.00	1.43
1090.70	1228.20	7.32	47.28	40.07	2.37	2.96	30.55	300.00	1.38
1201.70	1345.40	7.35	44.93	39.29	2.37	2.87	30.99	350.00	1.33
1423.50	1579.80	7.77	47.61	39.06	2.26	3.15	29.18	400.00	1.28
1645.40	1814.20	7.60	51.49	50.84	1.89	3.94	29.64	450.00	1.22
1756.40	1931.40	7.58	51.99	53.46	1.89	4.38	31.76	500.00	1.15
1978.20	2165.70	7.52	55.30	39.65	1.92	4.21	30.24	600.00	1.02
2089.20	2282.90	7.67	47.32	39.01	1.86	3.73	28.78	650.00	1.04
2200.10	2400.10	7.81	43.87	38.81	1.74	3.42	28.16	700.00	1.10

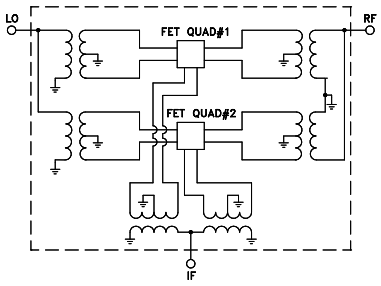
Demo Board MCL P/N: TB-433+
Suggested PCB Layout (PL-012)



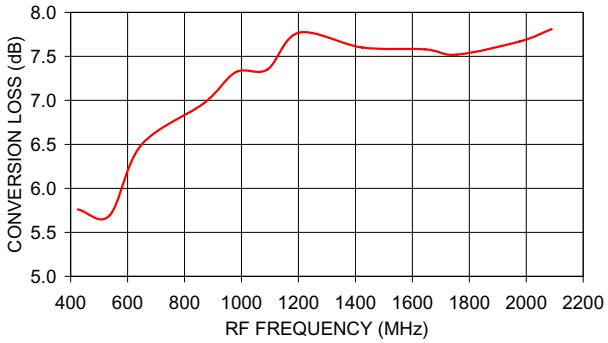
NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

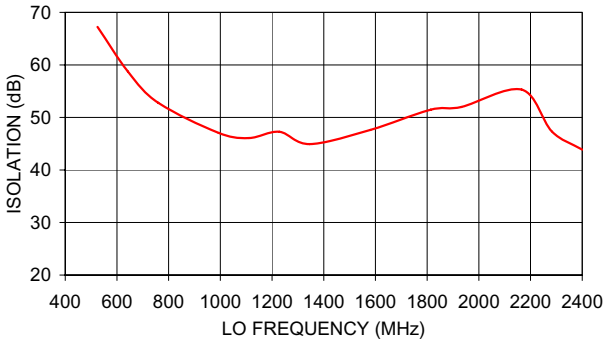
Electrical Schematic



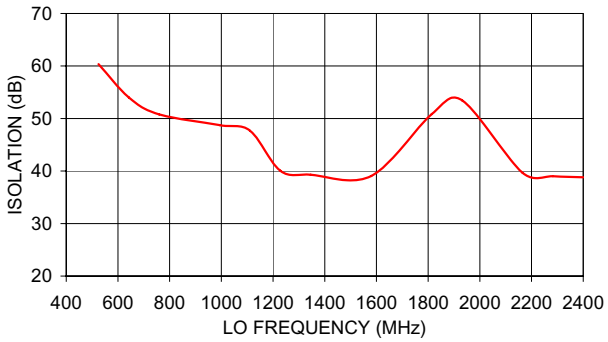
LAVI-22VH+
CONVERSION LOSS



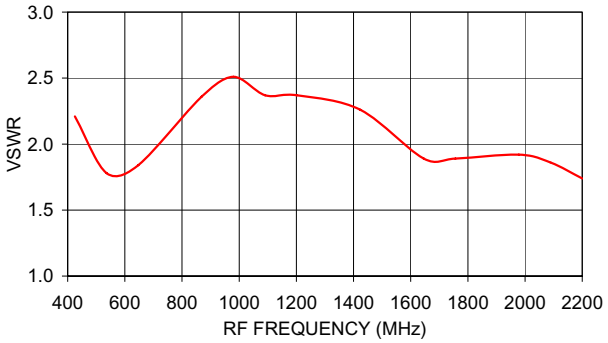
LAVI-22VH+
L-R ISOLATION



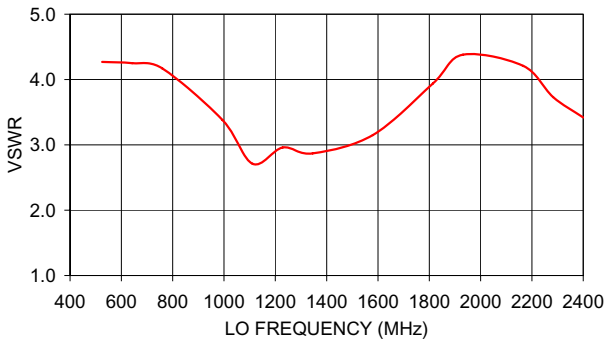
LAVI-22VH+
L-I ISOLATION



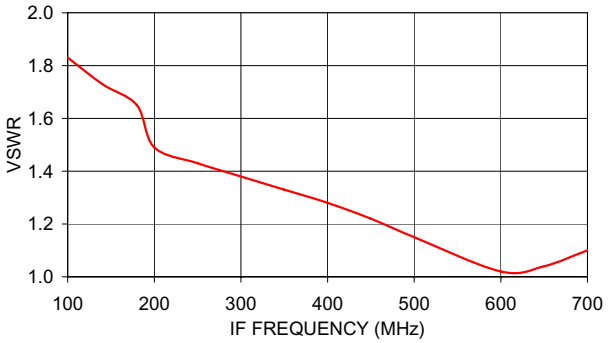
LAVI-22VH+
RF VSWR



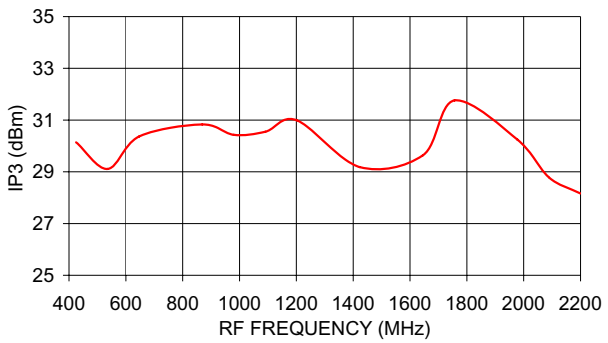
LAVI-22VH+
LO VSWR



LAVI-22VH+
IF VSWR



LAVI-22VH+
IP3



Harmonic Table (T_{AMB}= 25°C)
(Relative to desired IF output)

RF HARMONICS ORDER	RF CAL (-dBc)	0	1	2	3	4	5	6	7	8	9	10
0	-	-	16	16	23	25	40	39	44	55	47	105
1	-	30	0	36	19	49	31	52	43	48	49	104
2	97	68	63	51	72	62	77	65	81	79	78	76
3	100	99	72	93	67	93	76	93	78	100	87	96
4	101	101	105	105	95	100	99	104	99	105	104	103
5	100	104	104	103	99	92	98	98	101	103	105	104
6	97	105	105	105	105	103	102	101	102	106	107	103
7	98	105	105	106	104	106	102	101	99	105	106	107
8	99	104	106	105	105	106	102	103	102	101	105	107
9	96	104	105	105	104	106	104	105	104	101	100	104
10	96	104	103	105	104	105	107	109	104	103	101	102

LO HARMONICS ORDER

Test conditions:
RF IN: 1312.50 MHz, 0 dBm.
LO IN: 1462.50 MHz, 21 dBm.
IF OUT: 150 MHz.
C. LOSS: 8.27 dB.