

# High IP3 Frequency Mixer

## LAVI-452VH+

Level 23 (LO Power +23 dBm) 3220 to 4500 MHz



CASE STYLE: CK605

**+RoHS Compliant**

The +Suffix identifies 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	+25 dBm
RF Power	+23 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, 33 dBm typ.
- excellent L-R isolation, 45 dB typ. and L-I isolation, 40 dB typ.
- high 1 dB compression, 20 dBm typ.
- shielded metal cover
- aqueous washable
- protected by US Patent 6,807,407

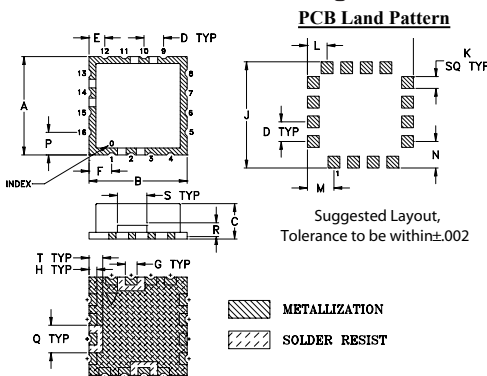
### Applications

- broadband wireless 4G system
- WiMax
- amateur radio
- wireless communications
- fixed microwave

### Electrical Specifications at 25°C

Parameter	Min.	Typ.	Max.	Unit
Frequency Range, RF	3220	—	4500	MHz
Frequency Range, LO	2370	—	3650	MHz
Frequency Range, IF	300	—	1500	MHz
Conversion Loss	—	8.6	9.8	dB
LO to RF Isolation	28	36	—	dB
LO to IF Isolation	25	32	—	dB
IP3	—	33	—	dBm
RF Input Power at 1 dB Compression	—	+20	—	dBm

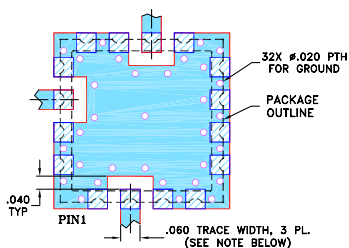
### Outline Drawing



### 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	

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

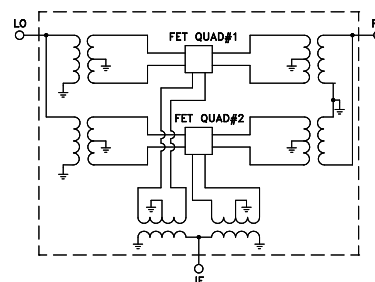


- NOTES: 1. TRACE WIDTH IS SHOWN FOR FR4 WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### 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)	
								LO	IF
		LO +23dBm	LO +23dBm	LO +23dBm	LO +23dBm	LO +23dBm		LO	IF
3220	2370	7.73	36.18	37.19	2.45	3.74	33.77	290	1.98
3500	2650	7.49	43.81	45.20	1.84	4.88	32.85	410	1.78
3600	2750	7.42	44.44	41.81	1.66	4.23	33.39	500	1.64
3700	2850	7.40	43.91	39.37	1.48	3.34	34.11	600	1.52
3800	2950	7.45	44.73	37.42	1.36	3.04	34.40	700	1.45
3900	3050	7.55	47.43	36.34	1.30	2.97	35.16	800	1.42
4000	3150	7.59	49.82	35.87	1.25	2.85	34.80	900	1.43
4100	3250	7.69	49.67	35.83	1.19	2.71	33.56	1000	1.45
4150	3300	7.72	50.73	35.81	1.17	2.79	33.73	1100	1.48
4200	3350	7.90	51.77	35.68	1.14	2.74	33.36	1200	1.52
4300	3450	8.08	50.49	36.06	1.15	2.81	33.47	1300	1.57
4350	3500	8.06	47.88	35.81	1.22	2.48	35.11	1350	1.57
4400	3550	8.33	46.93	36.93	1.28	2.52	31.79	1400	1.61
4450	3600	8.31	44.70	37.50	1.38	2.42	31.63	1450	1.60
4500	3650	8.61	43.96	39.58	1.45	2.29	30.67	1500	1.65

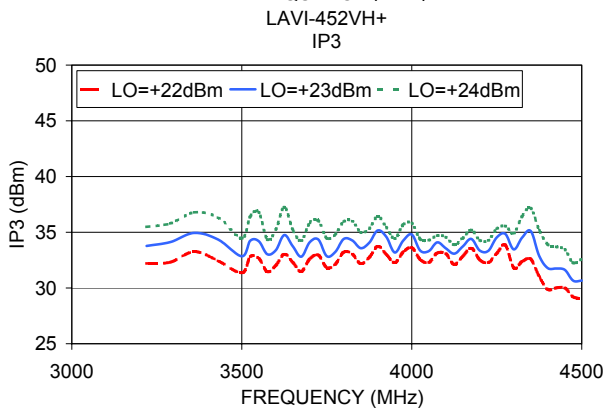
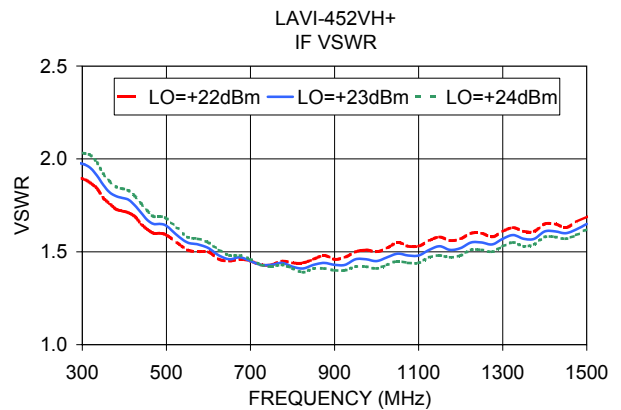
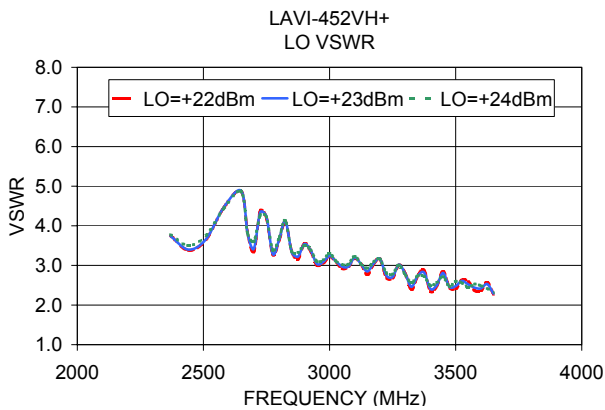
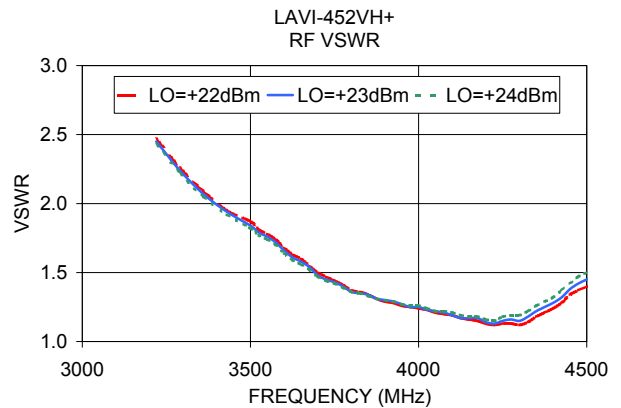
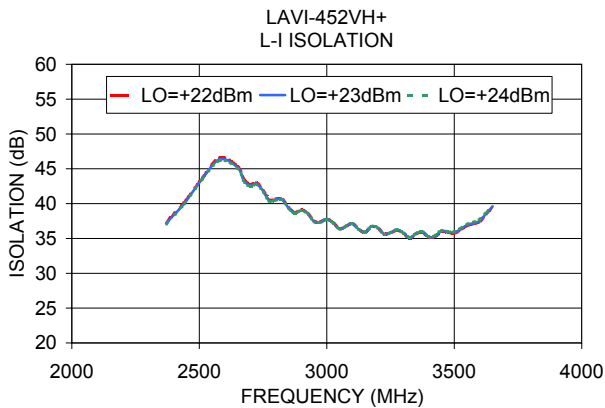
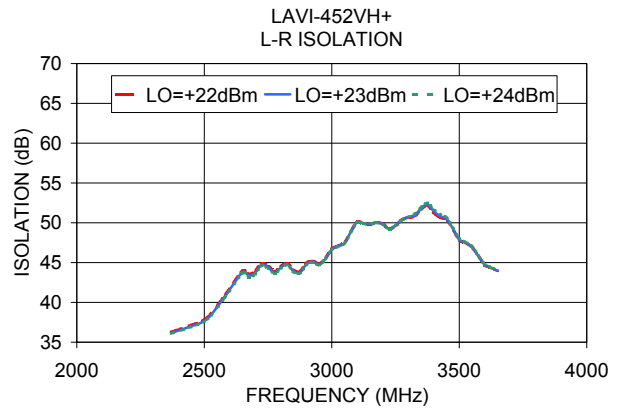
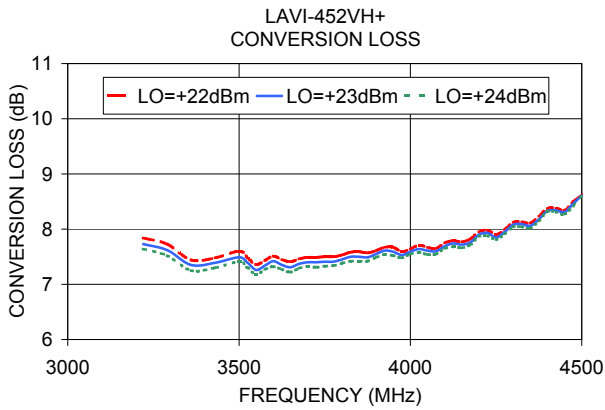
### Electrical Schematic



### 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.
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