Surface Mount

Frequency Mixer

ASK-2-KK81+
ASK-2-KK81

Level 7 (LO Power +7 dBm) 1 to 1000 MHz

CASE STYLE: KK81
PRICE: $8.25 ea. QTY (1-9)

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

Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

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

Pin Connections

LO	1
RF	4
IF	5
GROUND	2,3,6

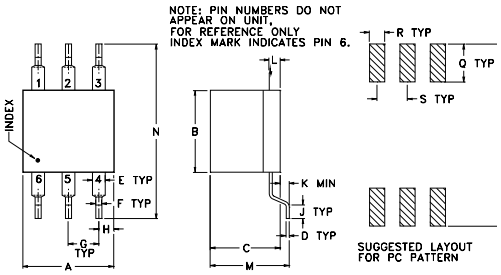
Features

- low conversion loss, 6.79 dB typ.
- wideband, 1 to 1000 MHz

Applications

- HF/VHF/UHF
- cellular
- federal & defense communications

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
.30	.27	.23	.010	.042	.020	.100	.05	.05
7.62	6.86	5.84	0.25	1.07	0.51	2.54	1.27	1.27

K	L	M	N	P	Q	R	S	wt
.020	.036	.26	.575	.600	.125	.050	.100	grams
0.51	0.91	6.60	14.61	15.24	3.18	1.27	2.54	0.50

Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						IP3 at center band (dBm)
LO/RF	IF	Mid-Band m			Total Range	L		M		U		L		M		U		
f_L-f_U		$\overline{X}$	σ	Max.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
1-1000	DC-1000	6.79	.10	8.0	9.8	60	40	35	18	26	16	50	30	25	17	15	10	12

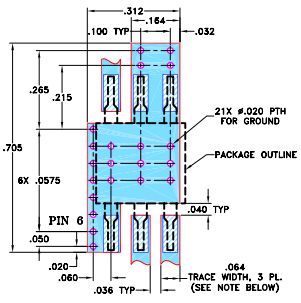
1 dB COMPR.: +1 dBm typ.
For phase detection, DC output positive polarity with in-phase LO&RF

L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U]
m= mid band [2f_L to f_U/2]

Typical Performance Data

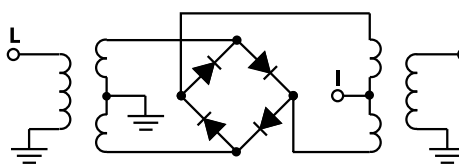
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1.00	31.00	7.37	83.47	91.97	1.38	2.66
2.00	32.00	7.07	80.37	87.67	1.29	2.56
5.00	35.00	6.73	72.27	82.47	1.24	2.67
10.00	40.00	6.62	66.17	77.87	1.23	2.56
20.00	50.00	6.55	61.04	73.34	1.23	2.51
50.00	80.00	6.57	52.51	61.14	1.22	2.53
97.68	67.68	6.59	47.22	54.12	1.23	2.51
100.00	70.00	6.59	47.11	53.57	1.23	2.49
194.36	164.36	6.53	41.80	49.32	1.24	2.49
200.00	170.00	6.53	41.66	49.33	1.27	2.49
291.03	261.03	6.57	38.25	47.35	1.32	2.44
387.71	357.71	6.67	35.81	42.38	1.34	2.56
484.39	454.39	6.68	33.54	37.69	1.35	2.55
500.00	470.00	6.68	33.24	36.29	1.40	2.64
581.07	551.07	6.87	31.64	32.31	1.52	3.03
677.74	647.74	7.12	29.02	27.88	1.69	3.49
774.42	744.42	7.40	26.95	24.13	1.93	3.33
871.10	841.10	7.80	25.84	20.52	2.20	3.00
967.77	937.77	8.22	25.87	17.33	2.45	2.97
1000.00	970.00	8.38	25.95	16.29	2.58	2.98

Demo Board MCL P/N: TB-174
Suggested PCB Layout (PL-082)



NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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



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

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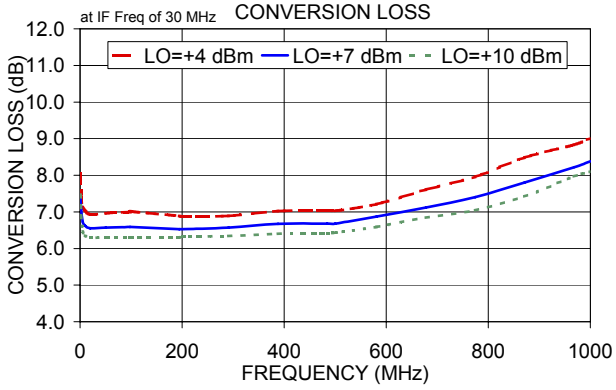
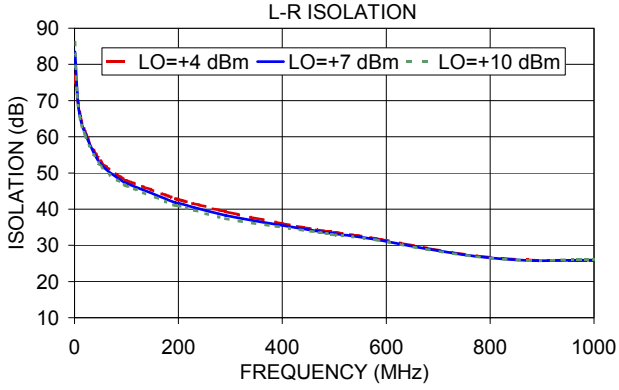
Performance Charts

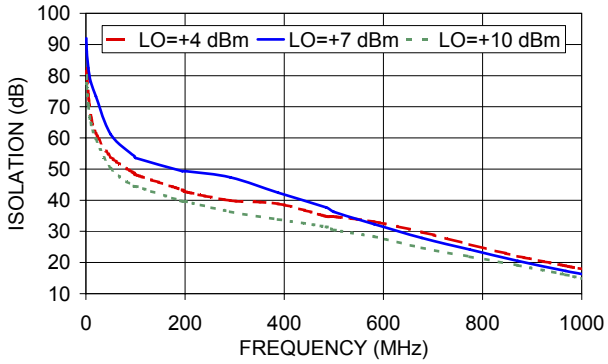
ASK-2-KK81
CONVERSION LOSS
at IF Freq of 30 MHz



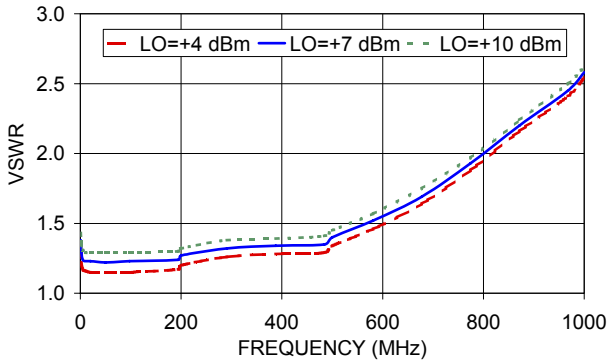
ASK-2-KK81
L-R ISOLATION



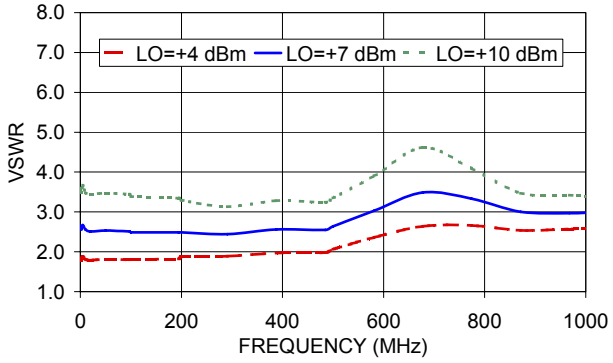
ASK-2-KK81
L-I ISOLATION



ASK-2-KK81
RF VSWR



ASK-2-KK81
LO VSWR



ASK-2-KK81
IF VSWR