surface-mount

T-74-09-01

Frequency Mixers

LEVEL 7 (+7dBm LO, up to +1dBm RF)

Models
RMS-2D
LRMS-2D

computer-automated performance data
typical production unit / for data of other models consult factory

mixer conversion loss and isolation

R MHz	LO MHz	Conversion Loss (dB) LO +4 dBm	LO +7 dBm	LO +10 dBm	FREQ. (MHz)	Isolation L-R (dB) LO +4 dBm	LO +7 dBm	LO +10 dBm	Isolation L-I (dB) LO +4 dBm	LO +7 dBm	LO +10 dBm
5.000	35.000	7.57	7.12	6.85	5.000	75.52	75.17	72.21	66.42	69.37	72.91
10.000	40.000	7.41	7.00	6.73	10.000	68.33	69.29	68.74	66.13	68.39	69.44
20.000	50.000	7.47	7.00	6.76	20.000	62.08	62.94	63.81	64.48	64.44	64.11
50.000	80.000	7.49	7.04	6.77	50.000	54.62	55.85	56.74	59.32	57.67	56.43
95.450	65.454	7.47	7.03	6.77	95.450	49.13	50.26	51.30	54.08	52.12	50.87
100.000	70.000	7.43	7.00	6.77	100.000	48.68	49.77	50.89	53.59	51.68	50.50
185.910	155.909	7.38	6.96	6.74	185.910	43.74	44.92	45.78	49.15	47.38	46.16
200.000	170.000	7.36	6.95	6.73	200.000	43.19	44.30	45.16	48.60	46.93	45.62
276.360	246.364	7.30	6.93	6.71	276.360	40.71	41.76	42.47	46.12	44.24	43.04
366.820	336.818	7.28	6.92	6.71	366.820	38.50	39.46	40.12	42.80	41.10	40.13
457.270	427.273	7.22	6.84	6.63	457.270	37.24	38.05	38.54	39.29	38.81	38.35
487.420	457.424	7.23	6.90	6.65	487.420	36.81	37.64	38.08	38.11	37.61	37.22
500.000	470.000	7.21	6.87	6.65	500.000	36.76	37.67	38.17	37.99	37.54	37.12
547.730	517.727	7.23	6.89	6.67	547.730	36.32	37.15	37.61	37.19	36.85	36.06
638.180	608.182	7.28	6.96	6.75	638.180	35.02	35.79	36.05	34.64	35.08	35.39
728.640	698.636	7.45	7.11	6.91	728.640	33.75	34.44	35.04	33.29	33.63	33.23
819.090	789.091	7.90	7.48	7.20	819.090	33.28	33.73	34.29	31.03	32.36	33.06
909.550	879.546	8.32	7.84	7.54	909.550	33.67	34.09	34.40	29.33	30.24	31.10
969.850	939.849	8.79	8.11	7.79	969.850	33.27	33.57	33.58	27.75	28.96	29.97
1000.000	970.000	8.94	8.28	7.93	1000.000	33.51	34.04	34.27	27.65	28.80	30.03

mixer VSWR

ϕ detection

FREQ. (MHz)	VSWR RF port LO +4 dBm	LO +7 dBm	LO +10 dBm	VSWR LO port LO +4 dBm	LO +7 dBm	LO +10 dBm	FREQ. (MHz)	VSWR IF port LO +4 dBm	LO +7 dBm	LO +10 dBm	FREQ. (MHz)	max DC output mV	DC offset mV
5.000	1.38	1.43	1.48	2.09	2.92	3.99	5.000	1.29	1.14	1.04	5.000	223.48	-0.04
9.980	1.25	1.32	1.37	1.95	2.76	3.81	9.980	1.30	1.14	1.04	10.000	220.86	-0.05
49.770	1.20	1.28	1.34	1.94	2.74	3.77	49.770	1.30	1.15	1.05	20.000	221.95	-0.08
99.520	1.20	1.28	1.33	1.90	2.69	3.70	99.520	1.32	1.18	1.09	50.000	229.96	-0.07
199.020	1.22	1.29	1.34	1.87	2.57	3.51	199.020	1.37	1.23	1.16	95.450	226.75	-0.17
248.770	1.27	1.31	1.37	1.86	2.52	3.43	248.770	1.43	1.27	1.20	100.000	225.04	-0.22
266.190	1.27	1.33	1.38	1.87	2.53	3.42	266.190	1.43	1.31	1.23	185.910	231.28	-0.50
345.790	1.33	1.38	1.42	1.93	2.57	3.46	345.790	1.52	1.38	1.32	200.000	233.82	-0.55
422.900	1.40	1.46	1.49	1.99	2.60	3.48	422.900	1.59	1.47	1.40	276.360	221.21	-0.88
475.140	1.46	1.50	1.54	2.02	2.60	3.45	475.140	1.65	1.53	1.47	366.820	245.81	-1.18
500.010	1.49	1.53	1.57	2.06	2.61	3.45	500.010	1.57	1.44	1.36	457.270	235.91	-1.44
529.860	1.53	1.57	1.60	2.07	2.60	3.42	529.860	1.69	1.56	1.48	487.420	228.58	-1.74
606.970	1.63	1.67	1.70	2.17	2.69	3.49	606.970	1.76	1.63	1.55	500.000	225.33	-1.93
686.570	1.75	1.78	1.81	2.23	2.67	3.42	686.570	1.80	1.68	1.62	547.730	204.71	-1.87
738.810	1.83	1.87	1.89	2.26	2.67	3.37	738.810	1.84	1.72	1.65	638.180	211.10	-2.28
763.690	1.87	1.91	1.93	2.26	2.65	3.34	763.690	1.84	1.75	1.68	728.640	216.27	-2.95
843.290	2.01	2.03	2.06	2.41	2.77	3.45	843.290	1.87	1.75	1.70	819.090	208.57	-3.50
920.400	2.13	2.16	2.18	2.52	2.86	3.50	920.400	1.86	1.76	1.69	909.550	196.48	-4.04
972.640	2.23	2.26	2.27	2.57	2.89	3.52	972.640	1.86	1.76	1.71	969.850	173.79	-4.08
1000.000	2.28	2.30	2.31	2.57	2.88	3.50	1000.000	1.85	1.76	1.71	1000.000	181.46	-3.70

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5-1000 MHz

Mini-Circuits

ULTRA-REL™ MIXERS

5-YR. GUARANTEE *

mixer harmonic intermodulation

T-74-09-01

(relative to desired IF output)

RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	-	-	10	29	12	26	16	63	49	66	51	66
1	-	19	+0	27	12	33	22	58	69	72	68	> 72
2	95	62	55	59	54	62	53	61	57	> 73	> 73	> 73
3	95	> 74	72	> 74	70	> 74	62	> 73	64	72	71	> 73
4	> 96	> 73	> 73	> 74	> 75	> 74	> 75	> 74	73	72	70	> 72
5	> 94	> 73	> 73	72	> 74	> 74	> 73	73	73	73	> 73	> 73
6	> 94	> 72	> 72	> 73	> 73	> 75	> 74	> 73	73	> 74	73	> 73
7	> 95	> 73	> 73	> 72	> 73	> 73	73	> 73	> 74	> 74	> 74	> 74
8	> 95	> 73	72	> 73	> 72	> 74	72	> 73	> 75	> 73	> 74	> 74
9	92	> 73	> 73	73	72	72	72	> 74	> 74	> 74	73	> 74
10	> 96	> 74	70	> 73	73	> 73	70	72	> 73	> 74	> 74	> 74

Harmonic LO Order

test condition: RF IN: 500.10 MHZ; -15.06 DBM
LO IN: 470.01 MHZ; +7.00 DBM
IF OUT: 30.09 MHZ; -22.03 DBM

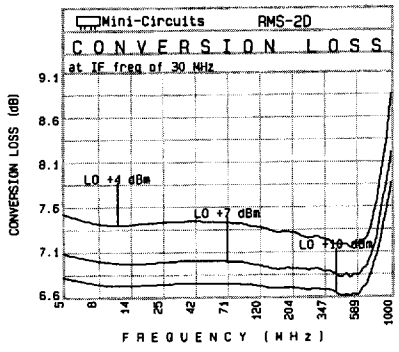
RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	-	-	20	41	23	40	27	74	62	77	67	76
1	-	19	+0	27	13	33	22	55	72	75	75	> 84
2	81	55	46	53	46	56	45	54	51	> 83	76	> 84
3	93	60	56	57	61	60	50	60	55	67	81	82
4	93	73	71	73	76	70	70	72	70	70	70	79
5	94	> 83	75	78	69	78	62	71	61	76	60	75
6	93	> 83	> 83	> 83	83	> 84	81	> 84	80	> 85	80	> 84
7	> 96	> 84	> 83	81	> 83	> 84	83	83	83	> 84	> 84	83
8	> 96	> 84	> 84	> 83	> 82	> 83	> 84	81	> 84	> 85	81	> 85
9	94	> 83	> 85	> 84	> 83	> 84	> 84	83	> 84	> 85	> 85	83
10	> 96	> 84	> 84	82	> 84	> 83	> 83	> 83	82	> 83	> 84	> 85

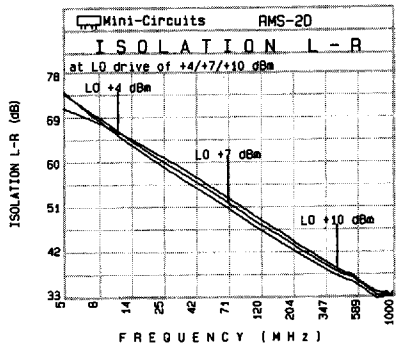
Harmonic LO Order

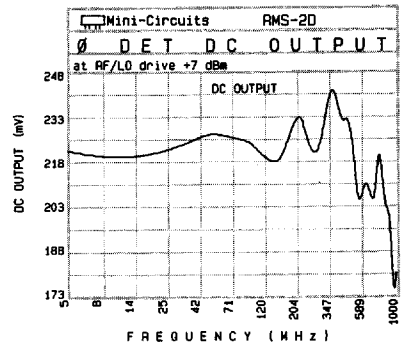
test condition: RF IN: 500.10 MHZ; -4.95 DBM
LO IN: 470.01 MHZ; +7.00 DBM
IF OUT: 30.09 MHZ; -11.70 DBM

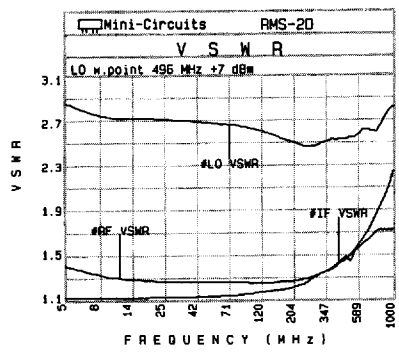
typical performance curves

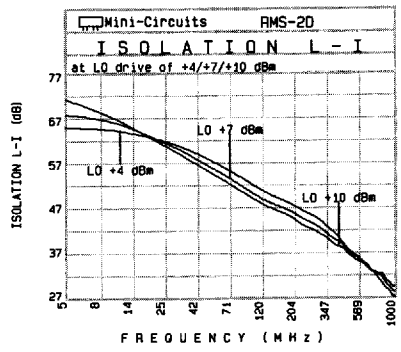
(production unit)

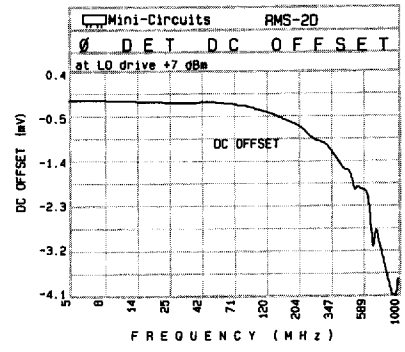












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