

most widely-used, surface-mount

Frequency Mixers

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

Models

LRMS-1R
RMS-1
LRMS-1

SCIENTIFIC/ MINI-CIRCUITS 49E D ■ 8068811 0001365 847 ■ SCC

T-74-09-01



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

mixer conversion loss and isolation

RF MHz	LO MHz	Conversion Loss (dB)			freq. (MHz)	Isolation L-R (dB)			Isolation L-I (dB)		
		LO +4dBm	LO +7dBm	LO +10dBm		LO +4dBm	LO +7dBm	LO +10dBm	LO +4dBm	LO +7dBm	LO +10dBm
.500	30.500	7.81	7.45	7.25	.500	77.47	89.00	86.40	58.57	64.40	71.90
1.000	31.000	7.02	6.68	6.52	1.000	76.77	82.65	81.16	59.07	64.35	70.66
2.000	32.000	6.45	6.15	6.00	2.000	74.40	76.59	75.41	58.90	63.49	66.01
5.000	35.000	6.12	5.84	5.69	5.000	68.98	68.78	67.98	57.58	59.68	59.61
10.000	40.000	6.09	5.78	5.64	10.000	63.87	63.45	62.82	55.47	55.38	54.46
20.000	50.000	6.18	5.84	5.66	20.000	57.27	56.92	56.64	50.26	48.99	48.06
50.000	80.000	6.16	5.84	5.67	50.000	48.30	48.06	49.87	42.15	40.83	40.96
67.100	97.100	6.07	5.78	5.63	67.100	47.09	47.33	48.46	40.99	39.62	39.46
100.000	70.000	6.01	5.74	5.59	100.000	45.58	45.42	45.04	38.53	36.85	35.88
117.050	87.050	5.99	5.71	5.57	117.050	45.23	45.23	44.81	37.97	36.32	35.29
150.350	120.350	6.00	5.73	5.59	150.350	45.07	44.09	42.81	36.76	34.84	33.16
200.000	170.000	6.06	5.78	5.63	200.000	43.85	41.97	40.59	35.32	32.90	31.04
216.950	186.950	6.14	5.84	5.66	216.950	42.30	40.74	39.65	34.64	32.23	30.22
250.000	220.000	6.25	5.91	5.72	250.000	40.08	38.62	37.54	32.78	30.58	28.88
283.550	253.550	6.13	5.81	5.64	283.550	38.42	36.99	35.87	31.34	29.19	27.41
333.500	303.500	6.11	5.81	5.69	333.500	35.20	34.17	33.03	28.71	26.96	25.49
383.450	353.450	6.31	6.03	5.90	383.450	32.23	31.17	30.12	27.01	25.64	24.22
433.400	403.400	6.63	6.34	6.21	433.400	30.09	29.18	28.64	24.83	23.85	22.69
466.700	436.700	6.92	6.56	6.43	466.700	28.97	27.71	27.04	23.95	22.78	21.60
500.000	470.000	7.25	6.82	6.59	500.000	28.29	27.09	26.44	23.13	22.32	21.19

mixer VSWR

freq. MHz	VSWR, RF port			VSWR, LO port		
	LO +4dBm	LO +7dBm	LO +10dBm	LO +4dBm	LO +7dBm	LO +10dBm
5.000	1.13	1.11	1.12	1.58	2.27	3.21
10.000	1.10	1.05	1.07	1.57	2.27	3.08
20.000	1.09	1.02	1.05	1.68	2.43	3.34
34.118	1.09	1.01	1.05	1.75	2.52	3.51
50.000	1.09	1.01	1.05	1.77	2.50	3.52
63.235	1.09	1.02	1.06	1.77	2.50	3.50
77.794	1.09	1.03	1.06	1.72	2.48	3.45
92.353	1.09	1.04	1.06	1.69	2.43	3.36
100.000	1.10	1.04	1.06	1.67	2.40	3.33
150.588	1.11	1.07	1.09	1.66	2.38	3.21
194.265	1.13	1.09	1.11	1.63	2.29	3.12
223.382	1.15	1.11	1.13	1.63	2.29	3.10
250.000	1.16	1.13	1.14	1.63	2.25	3.03
296.177	1.19	1.17	1.18	1.64	2.28	3.03
325.294	1.22	1.19	1.20	1.67	2.30	2.97
354.412	1.25	1.22	1.24	1.68	2.23	2.87
398.088	1.29	1.28	1.29	1.72	2.29	2.91
427.206	1.32	1.31	1.32	1.73	2.24	2.82
470.882	1.38	1.37	1.38	1.81	2.34	2.95
500.000	1.43	1.43	1.43	1.83	2.31	2.89

freq. MHz	VSWR, IF port			freq. (MHz)	max. DC output mV	DC offset mV
	LO +4dBm	LO +7dBm	LO +10dBm			
5.000	1.41	1.24	1.12	.500	+233.06	-09
10.000	1.41	1.25	1.13	1.000	+240.55	-08
20.000	1.41	1.24	1.13	5.000	+245.92	-07
34.118	1.40	1.24	1.12	10.000	+246.17	-06
50.000	1.41	1.24	1.12	20.000	+245.27	-05
63.235	1.41	1.24	1.12	33.800	+242.31	-03
77.794	1.41	1.24	1.13	50.000	+238.70	-01
92.353	1.41	1.24	1.13	50.450	+238.56	-01
100.000	1.41	1.24	1.13	67.100	+235.59	-02
150.588	1.42	1.25	1.13	117.050	+236.67	-22
194.265	1.42	1.26	1.14	167.000	+244.95	+09
223.382	1.43	1.27	1.15	200.000	+241.01	+37
250.000	1.42	1.25	1.14	216.950	+238.64	+89
296.177	1.44	1.28	1.16	266.900	+243.96	+177
325.294	1.46	1.29	1.18	300.200	+249.58	+2.52
354.412	1.46	1.30	1.18	333.500	+251.46	+4.04
398.088	1.46	1.30	1.19	383.450	+243.55	+5.99
427.206	1.46	1.31	1.20	416.750	+234.95	+7.51
470.882	1.46	1.31	1.21	466.700	+221.12	+9.24
500.000	1.45	1.31	1.21	500.000	+216.50	+11.38

φ detection

0.5 to 500 MHz



ULTRA-REL™ MIXERS
5-YR. GUARANTEE*

T-74-09-01

mixer harmonic intermodulation

(relative to desired IF output)

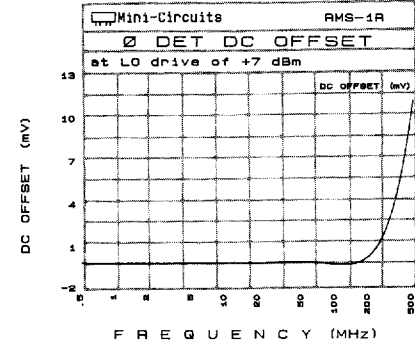
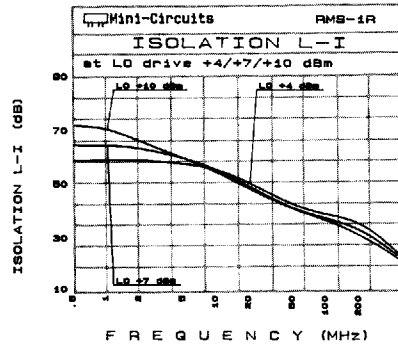
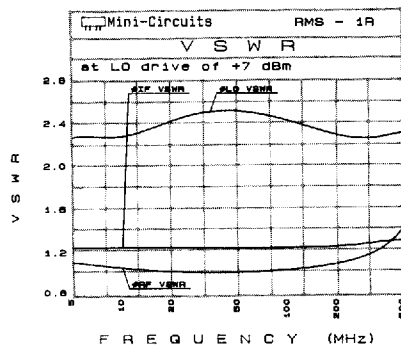
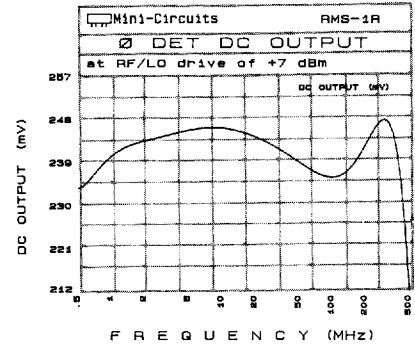
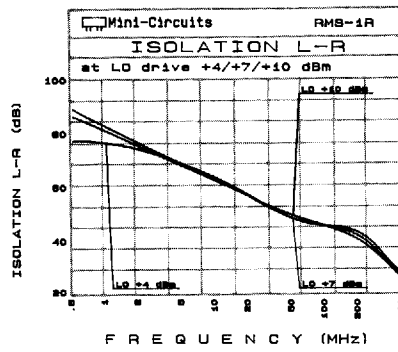
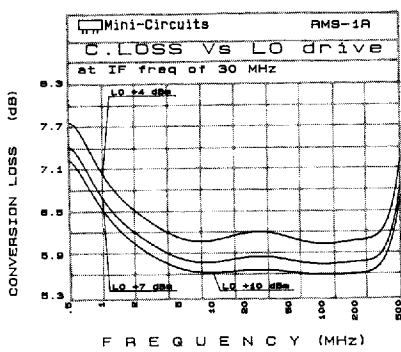
RF ORDER HARMONIC	RF CAL											
	0	1	2	3	4	5	6	7	8	9	10	
0	-	-	5	14	5	16	9	27	17	34	32	31
1	-	14	+0	26	12	32	22	34	35	38	36	44
2	96	63	46	57	46	51	45	54	45	61	49	60
3	93	67	65	70	63	69	60	69	62	74	61	71
4	96	72	72	>76	75	>75	>75	>76	>75	>75	>75	>75
5	>97	>75	>75	>75	>75	>75	>76	74	75	>75	75	>75
6	>97	>75	>75	>75	>76	>75	>76	>76	>75	>76	>75	>76
7	>97	>76	74	>75	>75	>75	>75	75	>75	>76	73	72
8	>96	70	>76	>75	>75	>75	>76	74	>75	74	>75	>76
9	>96	>74	>74	>75	>76	>75	>75	>76	>75	>76	75	>75
10	>97	>75	>75	>75	>76	74	>75	>75	>76	>75	>75	>75

RF ORDER HARMONIC	RF CAL											
	0	1	2	3	4	5	6	7	8	9	10	
0	-	-	14	23	15	26	20	38	30	45	39	50
1	-	14	+0	26	12	32	21	34	34	41	41	49
2	82	49	42	55	40	48	39	51	38	54	42	60
3	>96	53	53	54	54	54	51	58	54	62	52	59
4	>97	74	64	66	60	62	61	57	60	58	57	66
5	>97	71	70	66	64	66	60	66	58	66	58	75
6	>96	77	76	76	73	76	72	78	76	77	76	81
7	>96	84	84	80	>84	82	82	81	81	80	80	82
8	>96	83	>85	83	>85	84	>85	>85	>85	82	80	>86
9	>96	>86	81	>85	>85	>85	>86	>85	82	>86	>84	84
10	95	>85	>85	83	>85	>85	>85	>84	>85	>85	>85	84

test conditions: RF IN: 185.10 MHz; -14.97 DBM
LO IN: 155.01 MHz; +6.99 DBM
IF OUT: 30.09 MHz; -20.88 DBM

test conditions: RF IN: 185.10 MHz; -5.02 DBM
LO IN: 155.01 MHz; +6.99 DBM
IF OUT: 30.09 MHz; -11.18 DBM

typical performance curves
(production unit)



In Stock...Immediate Delivery