

very low distortion

捷多邦, 专业PCB打样工厂, 24小时加急出货

T-74-09-01

Frequency Mixers

LEVEL 17S (+17dBm LO, up to +14dBm RF)

Models

TAK-1H
TFM-1H
TUF-1H
ZAD-1SH
ZFM-1H
ZLW-1SH

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)			Isolation L-R (dB)			Isolation L-I (dB)		
		LO +14dBm	LO +17dBm	LO +20dBm	LO +14dBm	LO +17dBm	LO +20dBm	LO +14dBm	LO +17dBm	LO +20dBm
2.000	32.00	6.99	6.30	5.96	59.73	62.98	64.42	49.91	52.28	53.48
5.000	35.00	6.55	5.95	5.64	58.95	62.06	63.57	50.65	52.79	53.94
10.000	40.00	6.49	5.92	5.61	58.36	60.47	61.17	50.51	52.35	53.27
20.000	50.00	6.50	5.91	5.56	56.65	57.14	56.42	49.94	51.13	51.39
34.130	64.13	6.36	5.81	5.52	54.15	53.27	52.36	49.01	49.30	48.99
50.000	80.00	6.25	5.72	5.45	51.52	50.24	49.08	47.71	47.27	46.43
66.260	96.26	6.18	5.66	5.41	49.53	48.03	46.97	46.55	45.61	44.80
82.325	112.33	6.26	5.71	5.44	47.86	46.33	45.28	45.48	44.27	43.40
100.000	130.00	6.11	5.63	5.41	46.57	44.99	43.58	44.56	43.26	41.99
130.520	160.52	6.17	5.61	5.39	45.09	43.18	41.88	43.49	41.91	40.57
162.650	192.65	6.18	5.61	5.47	43.61	41.46	40.35	42.55	40.45	39.27
200.000	230.00	5.98	5.60	5.49	42.31	40.12	38.78	41.40	39.22	37.84
259.040	289.04	5.65	5.42	5.35	39.68	38.10	36.88	38.80	37.51	36.43
307.240	337.24	5.78	5.62	5.51	39.02	37.54	36.24	37.22	36.13	34.78
355.430	385.43	6.08	5.86	5.65	38.51	37.41	36.33	37.11	36.94	36.74
387.560	417.56	6.14	5.92	5.76	37.04	36.35	35.45	36.53	35.99	35.89
435.760	465.76	6.05	5.81	5.70	36.29	35.35	33.81	34.02	33.91	32.80
467.890	497.89	6.02	5.90	5.85	36.52	36.34	34.94	33.70	33.81	33.32
483.950	513.95	6.15	6.08	6.03	36.00	36.44	35.92	33.21	33.54	33.58
500.000	530.00	6.33	6.27	6.18	35.43	36.27	36.07	32.39	33.21	33.60

mixer VSWR

freq. MHz	VSWR, RF port			VSWR, LO port			VSWR, IF port		
	LO +14dBm	LO +17dBm	LO +20dBm	LO +14dBm	LO +17dBm	LO +20dBm	LO +14dBm	LO +17dBm	LO +20dBm
5.002	1.28	1.22	1.25	1.27	1.67	2.71	1.51	1.33	1.25
10.000	1.20	1.10	1.14	1.20	1.60	2.58	1.51	1.34	1.25
20.000	1.16	1.03	1.09	1.07	1.63	2.60	1.51	1.33	1.25
35.938	1.14	1.02	1.10	1.08	1.61	2.56	1.50	1.33	1.25
50.000	1.14	1.04	1.12	1.13	1.58	2.55	1.51	1.34	1.26
82.345	1.14	1.06	1.13	1.12	1.57	2.33	1.52	1.36	1.27
100.000	1.15	1.07	1.14	1.11	1.55	2.46	1.55	1.38	1.29
128.750	1.15	1.08	1.15	1.12	1.54	2.30	1.58	1.41	1.32
175.160	1.18	1.09	1.16	1.10	1.57	2.33	1.68	1.49	1.41
200.000	1.18	1.10	1.16	1.08	1.55	2.24	1.73	1.54	1.45
252.500	1.20	1.10	1.16	1.06	1.55	2.23	1.89	1.70	1.60
298.910	1.21	1.08	1.15	1.08	1.60	2.29	2.12	1.85	1.72
329.850	1.21	1.07	1.14	1.11	1.67	2.37	2.30	1.96	1.83
360.790	1.20	1.06	1.13	1.16	1.70	2.33	2.43	2.10	1.91
391.730	1.19	1.05	1.12	1.20	1.76	2.38	2.63	2.24	2.05
422.660	1.17	1.04	1.12	1.21	1.82	2.41	2.86	2.38	2.19
453.600	1.14	1.05	1.13	1.28	1.84	2.51	3.02	2.52	2.28
469.070	1.12	1.06	1.14	1.31	1.85	2.49	3.14	2.61	2.35
484.540	1.10	1.08	1.16	1.38	1.87	2.48	3.22	2.69	2.43
500.000	1.08	1.09	1.17	1.42	1.90	2.52	3.27	2.73	2.44

 ϕ detection

freq. (MHz)	max. DC output mV	DC offset mV
2.000	-896.40	+ .84
5.000	-910.70	+ .82
10.000	-925.30	+ .82
20.000	-928.20	+ .82
50.000	-907.30	+ .86
70.688	-918.40	+ .93
100.000	-923.40	+ .89
122.200	-943.50	+ .97
156.550	-957.90	+ 1.21
173.720	-976.00	+ 1.21
200.000	-989.10	+ 1.53
242.410	-1025.60	+ 1.08
276.750	-1017.80	+ 1.54
300.000	-987.00	+ 1.77
328.270	-939.20	+ 2.14
362.610	-883.40	+ 1.02
400.000	-847.50	+ .71
431.300	-861.90	+ 1.38
465.640	-903.30	+ 1.34
500.000	-877.00	+ 1.67

Measurements at RF & LO Power +17 dBm



Mini-Circuits™

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2 to 500 MHz

Mini-Circuits

00-17

ULTRA-REL™ MIXERS
5-YR. GUARANTEE *mixer harmonic intermodulation
(relative to desired IF output)

T-74-09-01

RF ORDER HARMONIC	RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	-	-	29	52	28	50	35	50	44	54	49	66
1	-	-	25	38	14	45	34	38	33	43	32	47
2	64	>65	56	>72	54	>73	52	>72	55	>78	57	>65
3	68	60	55	>64	62	>67	51	>73	45	60	43	58
4	>95	>89	77	84	71	81	73	81	>95	79	72	83
5	>95	82	67	73	65	74	56	73	55	75	55	84
6	>96	86	78	>91	77	89	76	86	78	86	84	>91
7	>95	86	76	>94	81	85	71	82	66	82	65	84
8	>94	>94	82	>91	85	>94	84	>92	86	>95	>90	>95
9	94	>94	>94	>95	83	>90	82	>90	80	>94	77	>94
10	>95	>93	>94	>94	>91	>95	>93	>95	>92	>95	>94	>94
		0	1	2	3	4	5	6	7	8	9	10
		Harmonic LO Order										

test conditions: RF.=IN: FREQ. 185.1 MHZ DRIVE +4.97 DBM
 LO.=IN: FREQ. 155.01 MHZ DRIVE +16.91 DBM
 IF=MEASURED: FREQ. 30.09 AMP. = -93 DBM

RF ORDER HARMONIC	RF CAL	0	1	2	3	4	5	6	7	8	9	10
0	-	-	20	42	17	41	23	39	32	39	32	50
1	-	25	-	39	15	44	54	35	29	38	24	41
2	83	>77	58	71	58	69	60	69	64	>77	65	>82
3	95	71	62	74	59	72	54	78	53	74	54	72
4	>95	>85	80	>86	79	>84	83	>84	>84	>86	82	>86
5	>96	>85	>85	>85	84	>84	80	85	79	86	82	>86
6	>94	>84	>84	>85	>84	>84	84	87	>85	>85	85	>84
7	>94	>85	>85	>84	>83	>85	>84	>85	>84	>84	>85	>83
8	>95	>84	84	>84	>85	>85	>85	>84	>85	>84	>85	>84
9	>95	>84	>84	85	>85	>84	>85	>85	>85	85	>84	>84
10	>94	>84	>84	>83	>84	>84	>83	>84	>85	>84	>85	>84
		0	1	2	3	4	5	6	7	8	9	10
		Harmonic LO Order										

test conditions: RF.=IN: FREQ. 185.1 MHZ DRIVE -4.95 DBM
 LO.=IN: FREQ. 155.01 MHZ DRIVE +16.91 DBM
 IF=MEASURED: FREQ. 30.09 AMP. = -10.85 DBM

typical performance curves
(production unit)