Engineering Development Model

Frequency Mixer TFM-ED12701/1

Level 17 (LO Power + 17 dBm)

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

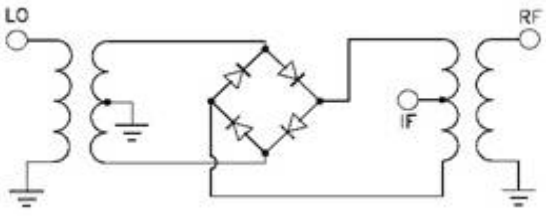
CASE STYLE : B02

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (f_L to f_U)	10		910	MHz
	RF (f_L to f_U)	10		910	MHz
	IF	10		490	MHz
Conversion Loss	**mid band**		6.5		dB
	Total Range		7		dB
LO-RF Isolation	**Low Range**		60		dB
	Mid Range		52		dB
	Upper Range		47		dB
LO-IF Isolation	**Low Range**		62		dB
	Mid Range		47		dB
	Upper Range		32		dB
Input IP3			+24		dBm
1 dB Compression			+14		dBm

Note: Low Range = [f_L to $10f_L$] Mid Range = [$10f_L$ to $f_U/2$] Upper Range = [$f_U/2$ to f_U]
mid band = [$2f_L$ to $f_U/2$]

MAXIMUM RATINGS	
Operating Temperature	-40°C TO +85°C
Storage Temperature	-55°C TO +100°C

Electrical Schematics



PIN CONNECTIONS	
LO	4
RF	1
IF	2
GROUND	3
CASE GROUND	3

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
10.10	40.10	6.91	6.23	5.94
40.10	70.10	7.17	6.47	6.17
70.10	100.10	7.18	6.51	6.21
100.10	130.10	7.13	6.48	6.22
130.10	160.10	7.12	6.46	6.18
160.10	190.10	7.15	6.50	6.23
190.10	220.10	6.97	6.40	6.21
220.10	250.10	7.02	6.43	6.20
250.10	280.10	7.00	6.44	6.23
280.10	310.10	6.90	6.41	6.24
310.10	340.10	6.98	6.46	6.26
340.10	370.10	6.96	6.48	6.28
370.10	400.10	6.92	6.50	6.32
400.10	430.10	7.03	6.55	6.35
430.10	460.10	6.97	6.52	6.31
460.10	490.10	7.14	6.69	6.47
490.10	520.10	7.21	6.78	6.50
520.10	550.10	7.24	6.84	6.56
550.10	580.10	7.27	6.90	6.66
580.10	610.10	7.30	6.91	6.68
610.10	640.10	7.33	6.94	6.71
640.10	670.10	7.42	7.03	6.80
670.10	700.10	7.49	7.08	6.84
700.10	730.10	7.54	7.09	6.84
730.10	760.10	7.64	7.17	6.91
760.10	790.10	7.84	7.30	7.00
790.10	820.10	7.99	7.45	7.11
820.10	850.10	8.08	7.57	7.22
850.10	880.10	8.36	7.82	7.42
880.10	910.10	8.59	8.04	7.61
910.10	940.10	8.81	8.21	7.70
940.10	970.10	9.25	8.59	7.97
970.10	1000.10	9.62	8.88	8.22
1000.10	1030.10	10.03	9.17	8.45
1030.10	1060.10	10.47	9.51	8.68
1060.10	1090.10	10.91	9.85	8.87
1090.10	1120.10	11.36	10.19	9.03
1120.10	1150.10	11.66	10.36	9.03
1140.10	1170.10	11.76	10.36	8.93
1170.10	1200.10	11.97	10.35	8.83

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
10.10	40.10	24.73	28.45	34.01
40.10	70.10	26.45	29.37	32.08
70.10	100.10	24.47	28.08	30.64
100.10	130.10	26.98	28.88	28.29
130.10	160.10	27.73	28.22	27.59
160.10	190.10	25.59	26.27	27.51
190.10	220.10	26.46	26.19	35.00
220.10	250.10	25.69	26.40	32.15
250.10	280.10	25.54	28.44	29.25
280.10	310.10	26.12	31.46	27.81
310.10	340.10	24.69	31.48	27.02
340.10	370.10	26.36	28.52	27.96
370.10	400.10	28.05	27.02	26.84
400.10	430.10	28.64	24.79	24.71
430.10	460.10	28.86	24.09	23.74
460.10	490.10	27.41	25.51	24.84
490.10	520.10	25.82	25.51	26.31
520.10	550.10	23.28	23.51	26.38
550.10	580.10	23.68	22.46	23.99
580.10	610.10	25.65	22.88	23.39
610.10	640.10	27.29	23.62	23.67
640.10	670.10	27.74	25.02	24.17
670.10	700.10	24.60	25.45	24.65
700.10	730.10	20.72	24.56	24.87
730.10	760.10	18.60	23.31	25.60
760.10	790.10	16.95	21.44	25.63
790.10	820.10	15.63	18.63	23.72
820.10	850.10	15.25	17.04	21.92
850.10	880.10	14.85	15.58	19.64
880.10	910.10	15.07	15.08	17.90
910.10	940.10	15.44	15.12	17.07
940.10	970.10	15.66	15.27	16.84
970.10	1000.10	15.65	15.60	16.99
1000.10	1030.10	15.73	16.42	17.34
1030.10	1060.10	15.74	17.33	18.67
1060.10	1090.10	15.65	17.52	19.86
1090.10	1120.10	15.61	17.20	20.19
1120.10	1150.10	15.72	17.02	20.49
1140.10	1170.10	15.63	16.79	20.79
1170.10	1200.10	15.86	17.11	22.44

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+14dBm (dB) @LO (dBm)		
		+14	+17	+20
10.10	40.10	0.72	0.39	0.20
40.10	70.10	0.61	0.26	0.13
70.10	100.10	0.60	0.31	0.18
100.10	130.10	0.61	0.29	0.15
130.10	160.10	0.61	0.27	0.15
160.10	190.10	0.62	0.30	0.16
190.10	220.10	0.73	0.33	0.17
220.10	250.10	0.62	0.27	0.13
250.10	280.10	0.64	0.28	0.15
280.10	310.10	0.76	0.31	0.17
310.10	340.10	0.67	0.27	0.14
340.10	370.10	0.70	0.26	0.14
370.10	400.10	0.77	0.31	0.19
400.10	430.10	0.66	0.26	0.15
430.10	460.10	0.75	0.30	0.17
460.10	490.10	0.72	0.30	0.19
490.10	520.10	0.62	0.23	0.16
520.10	550.10	0.68	0.24	0.17
550.10	580.10	0.82	0.30	0.20
580.10	610.10	0.84	0.32	0.20
610.10	640.10	0.92	0.40	0.24
640.10	670.10	0.92	0.44	0.26
670.10	700.10	0.92	0.45	0.25
700.10	730.10	1.03	0.56	0.29
730.10	760.10	1.07	0.64	0.34
760.10	790.10	1.00	0.67	0.38
790.10	820.10	1.03	0.72	0.44
820.10	850.10	1.16	0.81	0.52
850.10	880.10	1.12	0.78	0.52
880.10	910.10	1.13	0.80	0.53
910.10	940.10	1.05	0.76	0.56
940.10	970.10	0.83	0.59	0.48
970.10	1000.10	0.66	0.43	0.36
1000.10	1030.10	0.41	0.28	0.24
1030.10	1060.10	0.09	0.09	0.14
1060.10	1090.10	-0.26	-0.15	0.03
1090.10	1120.10	-0.55	-0.38	-0.03
1120.10	1150.10	-0.69	-0.44	0.03
1140.10	1170.10	-0.77	-0.43	0.12
1170.10	1200.10	-0.76	-0.29	0.32

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=250.1MHz (dB) @LO (dBm) +17
240.00	10.10	6.58
234.89	15.21	6.55
229.78	20.32	6.53
224.67	25.43	6.54
219.56	30.54	6.42
214.44	35.66	6.51
209.33	40.77	6.45
204.22	45.88	6.37
199.11	50.99	6.51
194.00	56.10	6.42
188.89	61.21	6.43
183.78	66.32	6.42
178.67	71.43	6.43
173.56	76.54	6.46
168.44	81.66	6.42
163.33	86.77	6.50
158.22	91.88	6.36
153.11	96.99	6.35
148.00	102.10	6.39
142.89	107.21	6.27
137.78	112.32	6.32
132.67	117.43	6.33
127.56	122.54	6.22
122.44	127.66	6.24
117.33	132.77	6.25
112.22	137.88	6.25
107.11	142.99	6.25
102.00	148.10	6.29
91.78	158.32	6.21
86.67	163.43	6.33
76.44	173.66	6.28
71.33	178.77	6.36
61.11	188.99	6.31
56.00	194.10	6.29
45.78	204.32	6.24
40.67	209.43	6.26
30.44	219.66	6.22
25.33	224.77	6.27
15.11	234.99	6.30
10.00	240.10	6.62

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=10.1MHz (dB) @LO (dBm) +17
10.00	20.10	6.47
60.00	70.10	6.10
110.00	120.10	6.26
160.00	170.10	6.23
210.00	220.10	6.24
260.00	270.10	6.35
310.00	320.10	6.36
360.00	370.10	6.45
410.00	420.10	6.52
460.00	470.10	6.66
510.00	520.10	6.69
560.00	570.10	6.73
610.00	620.10	6.77
660.00	670.10	6.74
710.00	720.10	6.63
760.00	770.10	6.53
810.00	820.10	6.53
860.00	870.10	6.55
910.00	920.10	6.63
960.00	970.10	6.72
1010.00	1020.10	6.78
1060.00	1070.10	6.75
1110.00	1120.10	6.83
1160.00	1170.10	6.72
1210.00	1220.10	6.52
1260.00	1270.10	6.23
1310.00	1320.10	6.20
1360.00	1370.10	6.19
1410.00	1420.10	6.31
1460.00	1470.10	6.46
1520.00	1530.10	6.73
1570.00	1580.10	6.98
1630.00	1640.10	7.33
1680.00	1690.10	7.67
1740.00	1750.10	8.19
1790.00	1800.10	8.62
1850.00	1860.10	9.11
1900.00	1910.10	9.70
1960.00	1970.10	10.26
2010.00	2020.10	10.74

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=500.1MHz (dB) @LO (dBm) +17
490.00	10.10	6.80
480.20	19.90	6.70
470.41	29.69	6.56
460.61	39.49	6.67
450.82	49.28	6.73
441.02	59.08	6.63
431.22	68.88	6.58
421.43	78.67	6.53
411.63	88.47	6.55
401.84	98.26	6.58
392.04	108.06	6.39
382.24	117.86	6.40
372.45	127.65	6.38
362.65	137.45	6.32
352.86	147.24	6.35
343.06	157.04	6.25
333.27	166.83	6.27
323.47	176.63	6.31
313.67	186.43	6.19
303.88	196.22	6.22
284.29	215.81	6.14
274.49	225.61	6.19
254.90	245.20	6.19
245.10	255.00	6.13
225.51	274.59	6.08
215.71	284.39	6.08
196.12	303.98	6.28
186.33	313.77	6.21
166.73	333.37	6.28
156.94	343.16	6.17
137.35	362.75	6.30
127.55	372.55	6.30
107.96	392.14	6.29
98.16	401.94	6.43
78.57	421.53	6.41
68.78	431.32	6.49
49.18	450.92	6.54
39.39	460.71	6.53
19.80	480.30	6.63
10.00	490.10	6.94

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)			RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20			+14	+17	+20
40.10	65.98	64.66	63.32	78.11	66.35	60.75	10.10	40.1	49.22	48.64	47.86
70.10	62.19	61.08	60.45	71.52	63.70	58.42	40.10	70.1	37.56	37.73	37.62
100.10	60.06	59.41	59.09	67.57	61.42	56.47	70.10	100.1	33.17	33.48	33.56
130.10	56.52	56.16	55.87	64.35	58.97	53.88	100.10	130.1	30.65	30.85	30.90
160.10	57.64	57.33	56.78	59.46	56.71	52.58	130.10	160.1	28.95	29.26	29.44
190.10	55.48	55.36	54.88	57.48	55.83	52.09	160.10	190.1	27.50	27.81	28.02
220.10	55.19	54.84	54.04	54.52	53.26	50.26	190.10	220.1	26.59	26.89	27.12
250.10	54.52	53.96	52.96	51.48	50.90	48.76	220.10	250.1	25.71	26.16	26.39
280.10	53.77	53.05	52.11	50.20	49.66	47.97	250.10	280.1	25.39	25.71	25.95
310.10	53.39	52.41	51.32	47.42	46.91	46.02	280.10	310.1	25.29	25.60	25.76
340.10	52.30	51.25	50.19	45.59	45.35	44.66	310.10	340.1	24.84	25.62	25.89
370.10	51.90	51.06	49.82	43.82	43.69	43.55	340.10	370.1	24.75	25.63	26.14
400.10	51.12	50.84	49.60	41.76	41.88	42.08	370.10	400.1	24.55	25.52	26.12
430.10	50.19	49.65	48.79	40.52	40.72	40.94	400.10	430.1	24.70	25.43	26.24
460.10	49.85	48.92	48.31	39.17	39.47	39.80	430.10	460.1	25.51	25.86	26.36
490.10	49.52	48.09	47.31	37.86	38.13	38.61	460.10	490.1	25.80	26.12	26.19
520.10	48.71	47.51	46.46	36.88	37.09	37.58	490.10	520.1	26.44	26.93	26.93
550.10	47.86	46.88	45.90	35.97	36.21	36.67	520.10	550.1	26.33	26.63	26.98
580.10	47.77	46.88	46.22	35.14	35.55	35.99	550.10	580.1	25.60	25.78	26.14
610.10	47.14	46.12	45.68	34.33	35.00	35.54	580.10	610.1	24.42	24.63	25.00
640.10	47.92	46.24	45.83	33.40	34.26	34.92	610.10	640.1	22.72	22.98	23.40
670.10	49.29	46.33	45.42	32.56	33.67	34.46	640.10	670.1	21.25	21.40	21.85
700.10	49.89	46.41	45.15	31.82	33.10	33.96	670.10	700.1	20.17	20.21	20.63
730.10	51.44	47.89	46.48	31.04	32.33	33.49	700.10	730.1	19.34	19.13	19.27
760.10	51.23	48.71	46.99	30.47	31.71	33.06	730.10	760.1	18.71	18.31	18.20
790.10	50.69	49.39	47.51	29.93	30.99	32.29	760.10	790.1	18.24	17.67	17.35
820.10	48.73	48.55	46.87	29.54	30.39	31.59	790.10	820.1	17.77	17.14	16.72
850.10	47.58	47.88	46.66	29.30	29.96	31.02	820.10	850.1	17.41	16.78	16.36
880.10	46.28	46.82	46.24	28.94	29.50	30.43	850.10	880.1	17.07	16.44	15.99
910.10	45.20	45.58	45.61	28.58	29.12	29.90	880.10	910.1	16.72	16.15	15.67
940.10	44.72	44.61	44.93	28.28	28.80	29.46	910.10	940.1	16.40	15.93	15.43
970.10	44.02	43.38	43.36	28.04	28.58	29.11	940.10	970.1	16.07	15.68	15.18
1000.10	43.88	43.06	42.88	27.69	28.23	28.70	970.10	1000.1	15.82	15.51	15.17
1030.10	43.37	42.60	42.27	27.41	28.06	28.54	1000.10	1030.1	15.51	15.28	15.05
1060.10	43.05	42.42	42.06	27.22	27.86	28.44	1030.10	1060.1	15.20	15.04	14.86
1090.10	42.32	41.78	41.45	26.96	27.63	28.18	1060.10	1090.1	14.99	14.88	14.75
1120.10	41.80	41.35	41.02	26.72	27.52	28.17	1090.10	1120.1	14.77	14.72	14.68
1150.10	41.41	41.10	40.94	26.59	27.50	28.26	1120.10	1150.1	14.66	14.64	14.66
1170.10	41.17	41.09	41.15	26.49	27.50	28.37	1140.10	1170.1	14.61	14.63	14.66
1200.10	40.76	40.63	40.78	26.14	27.15	28.15	1170.10	1200.1	14.52	14.61	14.66

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)			LO (MHz)	LO VSWR (:1) @LO (dBm)			IF (OUT) (MHz)	IF VSWR @LO=500MHz (:1) @LO (dBm)		
		+14	+17	+20		+14	+17	+20		+14	+17	+20
10.10	40.1	1.31	1.16	1.14	40.10	1.08	2.10	5.34	10.00	1.90	1.66	1.48
40.10	70.1	1.16	1.06	1.08	70.10	1.05	1.65	2.81	20.00	1.93	1.68	1.49
70.10	100.1	1.15	1.01	1.08	100.10	1.06	1.52	2.35	30.00	1.89	1.64	1.45
100.10	130.1	1.16	1.03	1.06	130.10	1.08	1.56	2.46	40.00	1.90	1.65	1.47
130.10	160.1	1.12	1.02	1.10	160.10	1.08	1.54	2.39	50.00	1.92	1.67	1.49
160.10	190.1	1.15	1.06	1.10	190.10	1.08	1.49	2.24	60.00	1.89	1.63	1.45
190.10	220.1	1.13	1.05	1.11	220.10	1.10	1.51	2.28	70.00	1.92	1.66	1.48
220.10	250.1	1.12	1.07	1.14	250.10	1.12	1.54	2.28	80.00	1.95	1.70	1.52
250.10	280.1	1.15	1.10	1.16	280.10	1.11	1.51	2.21	90.00	1.90	1.64	1.46
280.10	310.1	1.14	1.10	1.15	310.10	1.15	1.53	2.26	100.00	1.92	1.66	1.48
310.10	340.1	1.14	1.10	1.17	340.10	1.17	1.57	2.28	110.00	1.99	1.74	1.55
340.10	370.1	1.14	1.14	1.21	370.10	1.18	1.56	2.23	120.00	1.95	1.70	1.52
370.10	400.1	1.15	1.14	1.20	400.10	1.23	1.59	2.26	130.00	1.90	1.65	1.47
400.10	430.1	1.14	1.14	1.22	430.10	1.25	1.63	2.31	140.00	1.93	1.68	1.50
430.10	460.1	1.15	1.17	1.24	460.10	1.27	1.62	2.26	150.00	1.96	1.71	1.52
460.10	490.1	1.17	1.18	1.23	490.10	1.32	1.65	2.27	160.00	1.95	1.69	1.51
490.10	520.1	1.17	1.19	1.25	520.10	1.32	1.69	2.32	170.00	1.99	1.73	1.54
520.10	550.1	1.20	1.22	1.29	550.10	1.36	1.70	2.31	180.00	1.99	1.73	1.55
550.10	580.1	1.21	1.22	1.28	580.10	1.40	1.72	2.33	190.00	1.97	1.71	1.52
580.10	610.1	1.21	1.24	1.29	610.10	1.42	1.76	2.37	200.00	2.03	1.77	1.58
610.10	640.1	1.23	1.27	1.32	640.10	1.47	1.77	2.35	210.00	2.02	1.76	1.58
640.10	670.1	1.25	1.28	1.33	670.10	1.51	1.79	2.34	220.00	1.96	1.70	1.52
670.10	700.1	1.23	1.28	1.34	700.10	1.54	1.82	2.37	240.00	2.07	1.81	1.62
700.10	730.1	1.24	1.30	1.37	730.10	1.59	1.86	2.37	250.00	2.11	1.82	1.55
730.10	760.1	1.25	1.29	1.35	760.10	1.62	1.88	2.37	270.00	2.10	1.83	1.63
760.10	790.1	1.24	1.25	1.31	790.10	1.66	1.93	2.43	280.00	2.08	1.81	1.62
790.10	820.1	1.24	1.24	1.29	820.10	1.69	1.99	2.49	300.00	2.08	1.82	1.63
820.10	850.1	1.26	1.23	1.28	850.10	1.71	2.00	2.49	310.00	2.07	1.80	1.61
850.10	880.1	1.27	1.22	1.25	880.10	1.73	2.02	2.52	330.00	2.15	1.88	1.69
880.10	910.1	1.29	1.23	1.24	910.10	1.76	2.04	2.54	340.00	2.11	1.83	1.65
910.10	940.1	1.36	1.30	1.30	940.10	1.80	2.06	2.55	360.00	2.21	1.92	1.72
940.10	970.1	1.44	1.37	1.35	970.10	1.82	2.06	2.54	370.00	2.18	1.90	1.72
970.10	1000.1	1.50	1.43	1.41	1000.10	1.85	2.06	2.53	390.00	2.16	1.88	1.69
1000.10	1030.1	1.63	1.56	1.53	1030.10	1.89	2.09	2.55	400.00	2.22	1.93	1.74
1030.10	1060.1	1.75	1.67	1.63	1060.10	1.92	2.08	2.52	420.00	2.21	1.93	1.74
1060.10	1090.1	1.86	1.77	1.72	1090.10	1.94	2.07	2.49	430.00	2.24	1.96	1.76
1090.10	1120.1	2.00	1.91	1.84	1120.10	1.97	2.08	2.48	450.00	2.26	1.97	1.77
1120.10	1150.1	2.12	2.03	1.95	1150.10	2.00	2.07	2.46	460.00	2.28	2.00	1.81
1140.10	1170.1	2.17	2.07	1.99	1170.10	2.02	2.05	2.43	480.00	2.25	1.96	1.77
1170.10	1200.1	2.29	2.18	2.08	1200.10	2.05	2.02	2.39	490.00	2.36	2.07	1.88

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	26	33	22	42	26	52	42	62	43	57
1	-	19	+0	31	15	38	29	44	25	38	26	49
2	68	75	53	69	54	67	53	67	56	69	65	>82
3	>90	61	57	65	52	64	46	74	46	64	44	59
4	>90	>82	>82	>82	>82	>82	79	>82	79	>82	75	>82
5	>90	81	78	>82	72	81	67	79	69	>82	70	>82
6	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
7	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
8	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
9	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
10	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	81
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: **RF IN: 250.1 MHz; -1.00 dBm.**
LO IN: 280.1 MHz; +17.00 dBm
IF OUT: 30 MHz; -7.59 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	34	42	36	62	46	62	52	67	59	80
1	-	19	+0	32	15	44	25	41	34	46	40	59
2	48	58	50	62	50	64	47	63	50	69	71	91
3	68	46	44	50	49	56	45	50	45	57	38	54
4	>90	84	66	78	65	77	66	70	64	71	65	74
5	>90	62	66	67	58	66	49	60	47	61	46	67
6	>90	82	72	83	73	>92	78	>92	78	86	73	84
7	>90	70	73	78	70	72	64	70	59	70	58	71
8	>90	>92	83	>92	84	91	84	>92	83	>92	79	90
9	>90	85	75	76	73	78	69	79	67	77	67	79
10	>90	>92	>92	>92	>92	>92	>92	>92	92	>92	88	>92
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

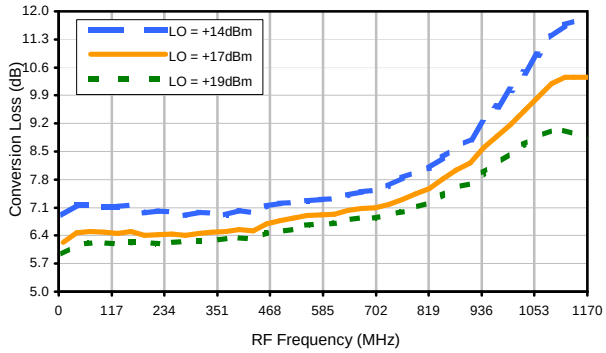
LO HARMONICS ORDER

Test conditions: **RF IN: 250.1 MHz; 9.00 dBm.**
LO IN: 280.1 MHz; +17.00 dBm
IF OUT: 30 MHz; 2.42 dBm

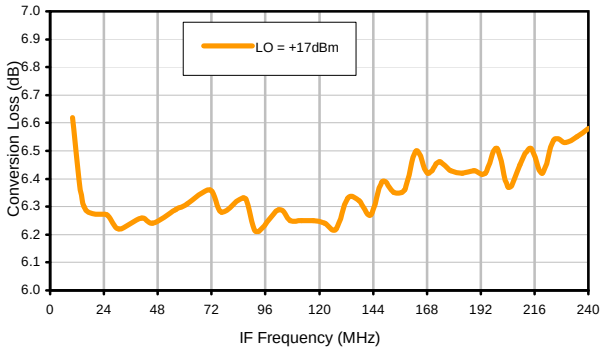
Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Typical Performance Curves

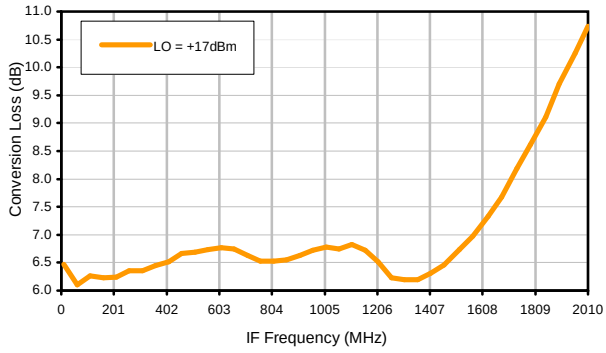
Conversion Loss @ IF=30MHz



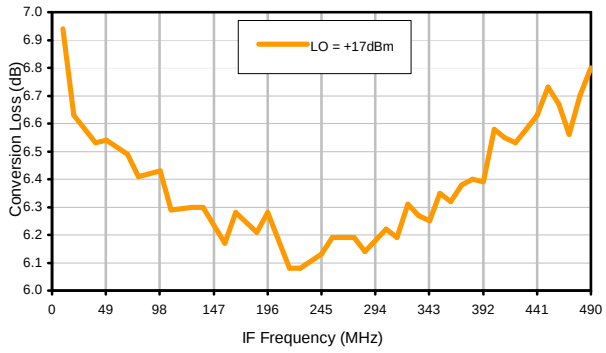
Conversion Loss vs. IF @ RF=250.1MHz



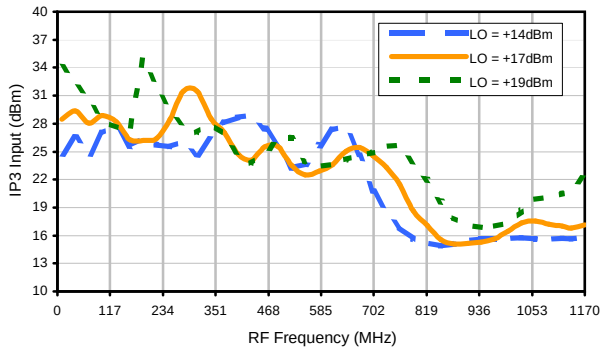
Conversion Loss vs. IF @ RF=10.1MHz



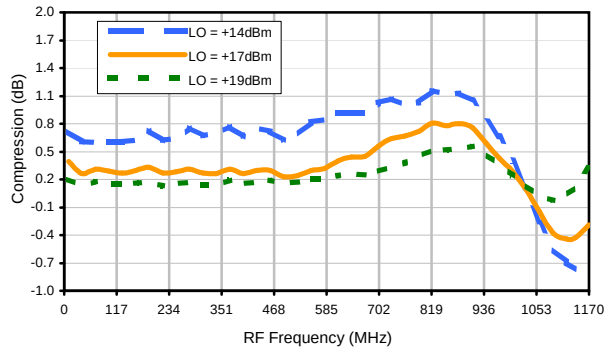
Conversion Loss vs. IF @ RF=500.1MHz



IP3 Input

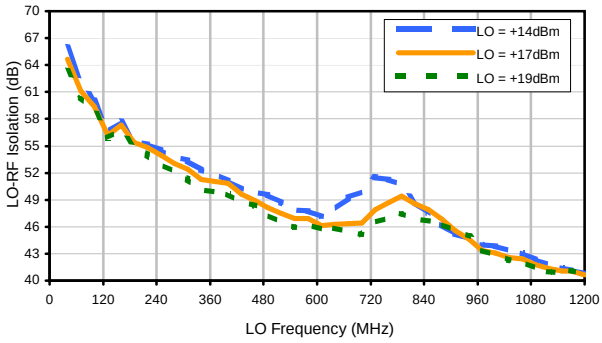


Compression @ RF IN=+14dBm

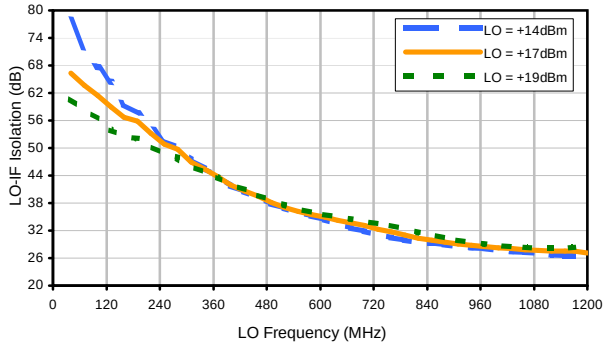


Typical Performance Curves

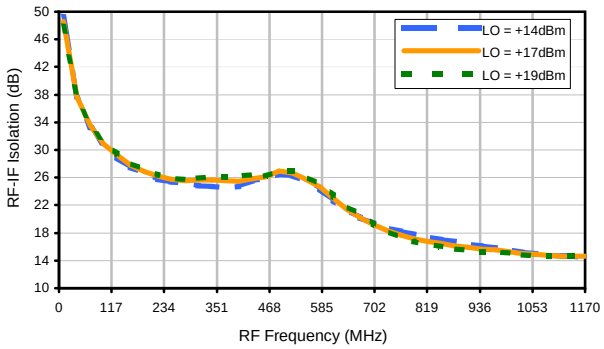
LO-RF Isolation



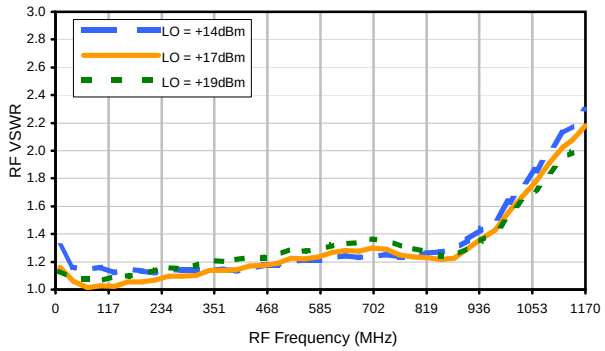
LO-IF Isolation



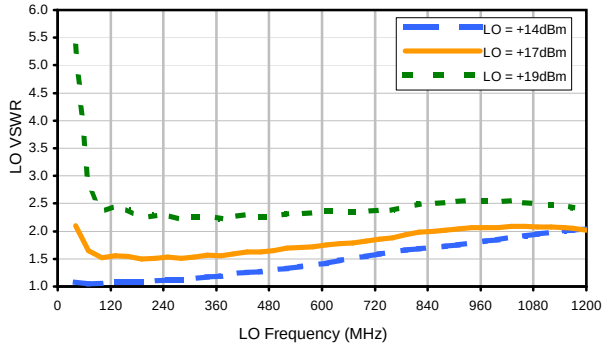
RF-IF Isolation



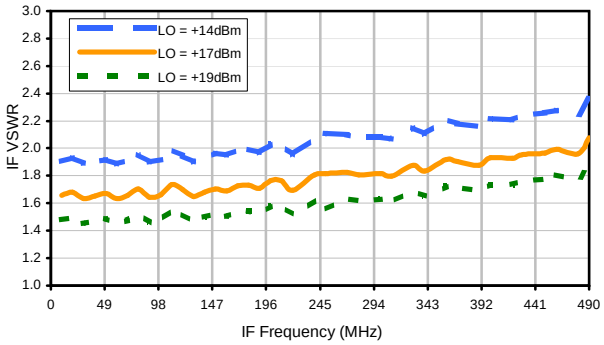
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	26	33	22	42	26	52	42	62	43	57
1	-	19	+0	31	15	38	29	44	25	38	26	49
2	68	75	53	69	54	67	53	67	56	69	65	>82
3	>90	61	57	65	52	64	46	74	46	64	44	59
4	>90	>82	>82	>82	>82	>82	79	>82	79	>82	75	>82
5	>90	81	78	>82	72	81	67	79	69	>82	70	>82
6	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
7	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
8	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
9	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82
10	>90	>82	>82	>82	>82	>82	>82	>82	>82	>82	>82	81
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 250.1 MHz; -1.00 dBm.
LO IN: 280.1 MHz; +17.00 dBm
IF OUT: 30 MHz; -7.59 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	34	42	36	62	46	62	52	67	59	80
1	-	19	+0	32	15	44	25	41	34	46	40	59
2	48	58	50	62	50	64	47	63	50	69	71	91
3	68	46	44	50	49	56	45	50	45	57	38	54
4	>90	84	66	78	65	77	66	70	64	71	65	74
5	>90	62	66	67	58	66	49	60	47	61	46	67
6	>90	82	72	83	73	>92	78	>92	78	86	73	84
7	>90	70	73	78	70	72	64	70	59	70	58	71
8	>90	>92	83	>92	84	91	84	>92	83	>92	79	90
9	>90	85	75	76	73	78	69	79	67	77	67	79
10	>90	>92	>92	>92	>92	>92	>92	>92	92	>92	88	>92
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

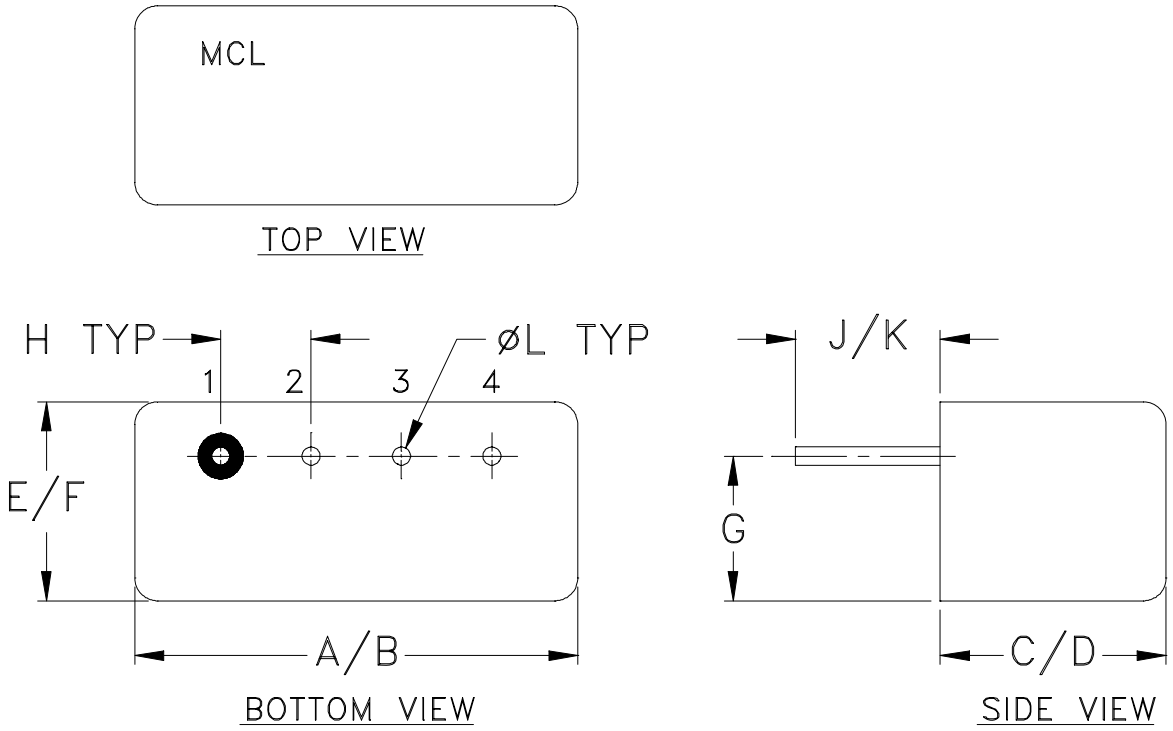
Test conditions: RF IN: 250.1 MHz; 9.00 dBm.
LO IN: 280.1 MHz; +17.00 dBm
IF OUT: 30 MHz; 2.42 dBm

Notes: 1. All Harmonics are in (dBc) relative to IF OUTPUT.
2. + entry denotes harmonics are in (dBc) above IF OUTPUT.
3. RF Cal represent the Harmonics level of the RF input signal to the mixer.

Case Style B

B02
B13

Outline Dimensions



CASE#	A	B	C	D	E	F	G	H	J	K	L	WT, GRAM
B02	.480 (12.19)	.500 (12.70)	.240 (6.10)	.255 (6.48)	.210 (5.33)	.230 (5.84)	.16 (4.06)	.100 (2.54)	.14 (3.56)	.20 (5.08)	.020 (.51)	1.9
B13			.390 (9.91)	.405 (10.29)								2.3

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .03; 3 Pl. ± .015

Notes:

1. Header material: C.R.S.
   Pin material: #52 alloy.
   Cover material: Cupro-Nickel.
2. Pin finish: Electro Tin-Silver.
3. Tolerance on pin diameter +/-.005 inch.
4. Glass meniscus 0.015 inch max.
5. Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.

Mini-Circuits®
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Environmental Specifications ENV01

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D