Non-Catalog Model

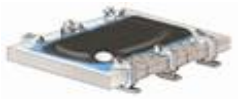
Frequency Mixer MBR-17H

Level 17 (LO Power +17 dBm)

Important Note

This is a non-catalog model and can be manufactured on specific request.
Pricing and delivery information can be supplied upon request.

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



CASE STYLE : SM26

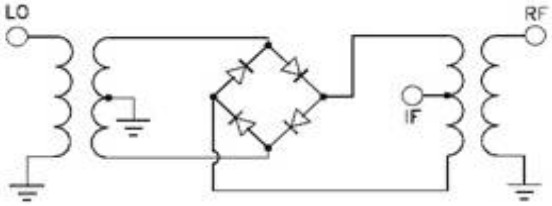
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency	**LO** (fL to fU)	1200		2000	MHz
	RF (fL to fU)	1200		2000	MHz
	IF	0		800	MHz
Conversion Loss			5.1	8.5	dB
LO-RF Isolation		17	25		dB
LO-IF Isolation		10	18		dB

Note: units are non-hermetic.

MAXIMUM RATINGS	
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

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

Electrical Schematics



Frequency Mixer MBR-17H

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	CONVERSION LOSS IF FIXED @IF(OUT)=30MHz (dB) @LO (dBm)		
		+14	+17	+20
920.0	950.0	13.74	10.26	9.69
1000.0	1030.0	9.84	8.61	8.33
1080.0	1110.0	7.94	7.51	7.49
1160.0	1190.0	7.22	7.00	6.86
1240.0	1270.0	6.69	6.30	6.08
1320.0	1350.0	5.98	5.78	5.70
1400.0	1430.0	5.66	5.56	5.51
1480.0	1510.0	5.73	5.57	5.49
1560.0	1590.0	5.57	5.42	5.36
1660.0	1690.0	5.56	5.48	5.46
1740.0	1770.0	5.66	5.57	5.56
1840.0	1870.0	5.84	5.74	5.73
1920.0	1950.0	5.91	5.83	5.84
2020.0	2050.0	5.82	5.81	5.88
2100.0	2130.0	5.86	5.84	5.88
2200.0	2230.0	5.63	5.65	5.71
2280.0	2310.0	5.88	5.99	6.17
2460.0	2490.0	7.09	6.86	6.78
2560.0	2590.0	6.93	6.73	6.64
2640.0	2670.0	6.65	6.52	6.46
2740.0	2770.0	6.57	6.45	6.44
2820.0	2850.0	6.37	6.31	6.30
2920.0	2950.0	6.20	6.15	6.18
3000.0	3030.0	6.12	6.04	6.07
3100.0	3130.0	5.97	5.82	5.84
3180.0	3210.0	6.05	5.76	5.71
3280.0	3310.0	6.21	5.86	5.76
3360.0	3390.0	6.41	6.00	5.82
3460.0	3490.0	6.37	5.90	5.78
3540.0	3570.0	6.28	5.83	5.78
3640.0	3670.0	6.27	5.81	5.69
3720.0	3750.0	6.11	5.73	5.64
3820.0	3850.0	6.06	5.76	5.69
3900.0	3930.0	6.13	5.88	5.81
4000.0	4030.0	6.25	6.11	6.13
4080.0	4110.0	6.56	6.49	6.60
4180.0	4210.0	7.24	7.27	7.78
4260.0	4290.0	7.86	8.35	10.36
4360.0	4390.0	9.34	10.70	13.11

RF (IN) (MHz)	LO (MHz)	IP3 INPUT (dBm) @LO (dBm)		
		+14	+17	+20
920.0	950.0	13.23	18.79	22.37
1000.0	1030.0	17.83	17.43	14.65
1080.0	1110.0	15.56	16.31	13.59
1160.0	1190.0	15.12	15.77	12.63
1240.0	1270.0	17.45	15.65	14.88
1320.0	1350.0	17.13	16.13	15.21
1400.0	1430.0	14.13	13.62	13.20
1480.0	1510.0	18.34	18.10	16.56
1560.0	1590.0	13.46	15.90	18.10
1660.0	1690.0	17.50	20.74	23.29
1740.0	1770.0	20.93	22.42	22.25
1840.0	1870.0	23.09	21.39	20.61
1920.0	1950.0	23.69	20.46	19.24
2020.0	2050.0	24.66	22.94	20.86
2100.0	2130.0	23.45	26.16	25.66
2200.0	2230.0	25.86	24.87	26.74
2280.0	2310.0	17.43	19.29	16.74
2460.0	2490.0	17.50	15.21	12.17
2560.0	2590.0	16.20	15.31	12.52
2640.0	2670.0	16.80	15.37	12.92
2740.0	2770.0	16.56	15.47	13.16
2820.0	2850.0	17.84	16.08	13.69
2920.0	2950.0	17.40	16.86	15.24
3000.0	3030.0	17.56	17.79	16.94
3100.0	3130.0	17.78	17.15	17.72
3180.0	3210.0	19.51	20.50	20.90
3280.0	3310.0	19.10	21.56	22.45
3360.0	3390.0	18.74	20.33	21.13
3460.0	3490.0	18.73	18.58	19.52
3540.0	3570.0	18.32	18.54	20.01
3640.0	3670.0	18.04	18.58	20.38
3720.0	3750.0	17.51	18.36	19.59
3820.0	3850.0	17.20	18.20	17.52
3900.0	3930.0	17.47	18.14	16.67
4000.0	4030.0	17.71	17.93	15.74
4080.0	4110.0	18.35	17.69	14.88
4180.0	4210.0	16.99	15.31	11.28
4260.0	4290.0	14.82	11.77	14.01
4360.0	4390.0	12.67	13.36	28.48

RF (IN) (MHz)	LO (MHz)	COMPRESSION @RF IN=+10dBm (dB) @LO (dBm)		
		+14	+17	+20
920.0	950.0	-1.11	0.86	1.11
1000.0	1030.0	0.96	1.33	1.52
1080.0	1110.0	1.84	1.83	1.84
1160.0	1190.0	2.01	1.84	1.77
1240.0	1270.0	1.86	1.70	1.68
1320.0	1350.0	1.75	1.57	1.57
1400.0	1430.0	1.78	1.64	1.62
1480.0	1510.0	1.73	1.61	1.53
1560.0	1590.0	1.60	1.41	1.28
1660.0	1690.0	1.36	1.18	1.07
1740.0	1770.0	1.21	1.05	0.98
1840.0	1870.0	1.12	1.03	1.03
1920.0	1950.0	0.94	0.85	0.92
2020.0	2050.0	0.67	0.63	0.76
2100.0	2130.0	0.55	0.45	0.59
2200.0	2230.0	1.17	0.90	0.89
2280.0	2310.0	2.31	2.00	1.87
2460.0	2490.0	1.70	1.60	1.66
2560.0	2590.0	1.68	1.55	1.68
2640.0	2670.0	1.69	1.56	1.64
2740.0	2770.0	1.53	1.39	1.49
2820.0	2850.0	1.47	1.27	1.33
2920.0	2950.0	1.41	1.12	1.11
3000.0	3030.0	1.52	1.17	1.08
3100.0	3130.0	1.52	1.06	0.95
3180.0	3210.0	1.59	1.18	1.04
3280.0	3310.0	1.67	1.28	1.24
3360.0	3390.0	1.79	1.43	1.37
3460.0	3490.0	1.92	1.59	1.51
3540.0	3570.0	2.10	1.77	1.68
3640.0	3670.0	2.26	1.94	1.98
3720.0	3750.0	2.41	2.13	2.23
3820.0	3850.0	2.55	2.34	2.55
3900.0	3930.0	2.56	2.48	2.67
4000.0	4030.0	2.48	2.51	2.71
4080.0	4110.0	2.57	2.65	2.97
4180.0	4210.0	2.67	2.94	3.26
4260.0	4290.0	3.15	3.12	1.87
4360.0	4390.0	2.83	1.80	0.16

Typical Performance Data

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1600MHz (dB) @LO (dBm) +17
830.0	770.0	10.74
782.7	817.3	8.85
735.4	864.6	7.34
688.1	911.9	7.01
640.8	959.2	6.70
593.5	1006.5	6.27
546.2	1053.8	6.01
498.8	1101.2	5.83
451.5	1148.5	5.95
404.2	1195.8	6.01
356.9	1243.1	5.94
309.6	1290.4	5.70
262.3	1337.7	5.46
215.0	1385.0	5.20
167.7	1432.3	5.12
120.4	1479.6	5.27
88.8	1511.2	5.48
41.5	1558.5	5.49
10.0	1590.0	5.69
58.5	1658.5	5.49
106.9	1706.9	5.65
179.6	1779.6	5.78
228.1	1828.1	6.07
300.8	1900.8	6.36
349.2	1949.2	6.45
421.9	2021.9	6.40
470.4	2070.4	6.21
543.1	2143.1	6.31
591.5	2191.5	6.56
664.2	2264.2	6.90
712.7	2312.7	7.01
785.4	2385.4	7.33
833.8	2433.8	7.45
906.5	2506.5	7.96
955.0	2555.0	8.20
1027.7	2627.7	8.56
1076.2	2676.2	8.94
1148.8	2748.8	9.26
1197.3	2797.3	9.62
1270.0	2870.0	10.36

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=1189.9MHz (dB) @LO (dBm) +17
10.1	1200.0	7.10
30.1	1220.0	6.85
70.1	1260.0	6.84
90.1	1280.0	6.78
130.1	1320.0	6.69
150.1	1340.0	6.75
190.1	1380.0	6.90
210.1	1400.0	6.93
250.1	1440.0	7.05
270.1	1460.0	7.11
310.1	1500.0	7.01
330.1	1520.0	6.98
370.1	1560.0	7.04
390.1	1580.0	7.13
430.1	1620.0	7.23
450.1	1640.0	7.32
490.1	1680.0	7.47
510.1	1700.0	7.48
550.1	1740.0	7.66
570.1	1760.0	7.67
610.1	1800.0	7.75
630.1	1820.0	7.84
670.1	1860.0	7.85
690.1	1880.0	7.83
730.1	1920.0	7.69
750.1	1940.0	7.57
790.1	1980.0	7.52
810.1	2000.0	7.48
850.1	2040.0	7.62
870.1	2060.0	7.87
910.1	2100.0	7.91
930.1	2120.0	8.01
970.1	2160.0	8.34
990.1	2180.0	8.30
1030.1	2220.0	8.51
1050.1	2240.0	8.89
1090.1	2280.0	9.15
1110.1	2300.0	9.34
1150.1	2340.0	9.94
1170.1	2360.0	10.28

IF (OUT) (MHz)	LO (MHz)	CONVERSION LOSS VS. IF FREQUENCY @RF(IN)=2010.1MHz (dB) @LO (dBm) +17
1150.1	860.0	10.41
1130.1	880.0	9.85
1110.1	900.0	9.26
1090.1	920.0	8.86
1050.1	960.0	7.83
1030.1	980.0	7.37
990.1	1020.0	6.63
970.1	1040.0	6.46
930.1	1080.0	6.27
910.1	1100.0	6.23
870.1	1140.0	6.10
850.1	1160.0	6.10
810.1	1200.0	6.06
790.1	1220.0	6.05
750.1	1260.0	5.94
730.1	1280.0	5.86
690.1	1320.0	5.57
670.1	1340.0	5.50
630.1	1380.0	5.72
610.1	1400.0	5.94
570.1	1440.0	6.36
550.1	1460.0	6.55
510.1	1500.0	6.78
490.1	1520.0	6.91
450.1	1560.0	6.78
430.1	1580.0	6.69
390.1	1620.0	6.39
370.1	1640.0	6.30
330.1	1680.0	6.14
310.1	1700.0	6.01
270.1	1740.0	5.88
250.1	1760.0	5.83
210.1	1800.0	5.67
190.1	1820.0	5.65
150.1	1860.0	5.60
130.1	1880.0	5.63
90.1	1920.0	5.64
70.1	1940.0	5.68
30.1	1980.0	5.74
10.1	2000.0	5.98

Typical Performance Data

LO (MHz)	LO-RF ISOLATION (dB) @LO (dBm)			LO-IF ISOLATION (dB) @LO (dBm)		
	+14	+17	+20	+14	+17	+20
950.0	34.76	34.46	41.58	13.68	14.58	15.99
1030.0	32.39	34.84	41.62	13.76	14.95	15.50
1110.0	31.58	34.97	42.25	14.56	14.99	14.71
1190.0	30.61	34.73	42.71	15.31	14.74	13.89
1270.0	29.79	35.59	48.69	15.75	14.52	13.78
1350.0	30.51	38.00	53.62	15.89	14.68	14.12
1430.0	29.55	36.41	46.31	16.60	15.54	14.80
1510.0	26.50	34.48	54.27	17.29	16.48	16.01
1590.0	27.61	35.87	39.22	17.71	17.74	17.70
1690.0	28.07	33.27	33.84	18.23	19.36	20.25
1770.0	26.74	30.31	31.07	18.26	19.93	21.29
1870.0	25.65	27.27	28.01	17.77	18.80	19.59
1950.0	24.53	24.97	25.21	16.63	17.01	17.20
2050.0	24.22	23.54	22.84	15.56	15.14	14.64
2130.0	23.33	22.22	21.22	14.37	13.76	13.04
2230.0	22.08	20.32	19.45	13.19	12.11	11.66
2310.0	21.22	19.83	19.17	12.46	11.49	10.93
2490.0	22.70	22.01	21.37	10.47	10.10	9.68
2590.0	22.97	22.90	22.32	9.34	9.27	9.04
2670.0	22.85	23.10	22.62	8.61	8.71	8.60
2770.0	22.12	22.60	22.61	7.94	8.12	8.35
2850.0	21.21	21.45	21.57	7.43	7.79	8.18
2950.0	21.16	20.63	20.30	6.79	7.29	7.85
3030.0	21.89	20.81	20.08	6.33	6.97	7.70
3130.0	22.43	20.92	19.59	5.89	6.61	7.54
3210.0	22.49	20.92	19.59	5.66	6.47	7.51
3310.0	21.69	20.42	19.21	5.42	6.34	7.47
3390.0	20.83	19.29	18.21	5.29	6.29	7.58
3490.0	20.27	18.63	17.62	5.05	6.21	7.61
3570.0	20.37	18.57	17.25	4.75	6.12	7.61
3670.0	20.59	18.18	16.65	4.92	6.32	7.69
3750.0	20.55	18.23	16.30	5.24	6.73	7.71
3850.0	20.94	18.95	17.42	6.03	7.37	8.02
3930.0	21.14	19.81	18.78	6.92	7.93	8.32
4030.0	21.83	21.80	21.57	8.36	8.97	8.99
4110.0	22.50	22.88	22.86	9.86	9.98	9.73
4210.0	22.90	23.05	22.25	11.10	10.92	10.30
4290.0	20.88	20.86	20.40	10.95	10.64	10.32
4390.0	18.43	18.92	17.94	10.92	10.96	10.92

RF (IN) (MHz)	LO (MHz)	RF-IF ISOLATION (dB) @LO (dBm)		
		+14	+17	+20
920.0	950.0	26.88	23.47	21.38
1000.0	1030.0	34.46	29.11	25.24
1080.0	1110.0	30.11	28.92	26.23
1160.0	1190.0	25.59	24.40	24.66
1240.0	1270.0	25.82	25.86	26.44
1320.0	1350.0	32.49	30.32	29.26
1400.0	1430.0	33.99	32.10	30.62
1480.0	1510.0	26.40	25.69	25.30
1560.0	1590.0	21.88	21.96	22.04
1660.0	1690.0	18.38	18.64	18.84
1740.0	1770.0	16.40	16.76	17.03
1840.0	1870.0	14.45	14.95	15.31
1920.0	1950.0	13.86	14.30	14.72
2020.0	2050.0	13.70	14.07	14.41
2100.0	2130.0	13.39	13.65	13.95
2200.0	2230.0	12.96	13.04	13.16
2280.0	2310.0	11.80	11.90	12.08
2460.0	2490.0	12.42	12.81	13.65
2560.0	2590.0	14.07	14.50	15.28
2640.0	2670.0	15.00	15.54	16.22
2740.0	2770.0	16.04	16.52	17.10
2820.0	2850.0	16.60	16.91	17.16
2920.0	2950.0	17.43	17.66	17.48
3000.0	3030.0	17.78	18.02	17.95
3100.0	3130.0	18.94	18.76	18.59
3180.0	3210.0	19.62	19.58	19.09
3280.0	3310.0	18.82	19.20	18.76
3360.0	3390.0	18.64	18.93	18.82
3460.0	3490.0	18.92	19.22	19.49
3540.0	3570.0	18.55	19.69	20.54
3640.0	3670.0	18.45	21.23	23.06
3720.0	3750.0	19.81	23.91	27.27
3820.0	3850.0	22.71	28.11	34.64
3900.0	3930.0	23.95	30.30	38.79
4000.0	4030.0	24.36	28.89	31.75
4080.0	4110.0	22.08	26.84	31.20
4180.0	4210.0	19.47	23.44	33.56
4260.0	4290.0	19.83	23.69	24.22
4360.0	4390.0	19.23	22.07	21.12

Typical Performance Data

RF (IN) (MHz)	LO (MHz)	RF VSWR (:1) @LO (dBm)		
		+14	+17	+20
920.0	950.0	10.56	7.60	6.37
1000.0	1030.0	6.94	5.44	4.75
1080.0	1110.0	4.80	4.08	3.60
1160.0	1190.0	3.70	3.24	2.86
1240.0	1270.0	2.91	2.59	2.35
1320.0	1350.0	2.30	2.13	2.00
1400.0	1430.0	1.87	1.76	1.67
1480.0	1510.0	1.51	1.44	1.43
1560.0	1590.0	1.26	1.28	1.30
1660.0	1690.0	1.12	1.13	1.17
1740.0	1770.0	1.06	1.07	1.14
1840.0	1870.0	1.13	1.08	1.13
1920.0	1950.0	1.17	1.17	1.23
2020.0	2050.0	1.23	1.27	1.35
2100.0	2130.0	1.22	1.27	1.36
2200.0	2230.0	1.14	1.16	1.22
2280.0	2310.0	1.30	1.23	1.21
2460.0	2490.0	2.33	2.20	2.00
2560.0	2590.0	2.44	2.27	2.07
2640.0	2670.0	2.50	2.31	2.13
2740.0	2770.0	2.51	2.32	2.16
2820.0	2850.0	2.38	2.21	2.08
2920.0	2950.0	2.30	2.10	1.96
3000.0	3030.0	2.22	2.00	1.87
3100.0	3130.0	2.19	1.86	1.69
3180.0	3210.0	2.16	1.79	1.60
3280.0	3310.0	2.10	1.77	1.57
3360.0	3390.0	2.01	1.72	1.54
3460.0	3490.0	1.84	1.56	1.41
3540.0	3570.0	1.72	1.43	1.27
3640.0	3670.0	1.62	1.38	1.24
3720.0	3750.0	1.55	1.37	1.28
3820.0	3850.0	1.52	1.42	1.42
3900.0	3930.0	1.63	1.58	1.59
4000.0	4030.0	1.80	1.80	1.84
4080.0	4110.0	2.07	2.03	2.07
4180.0	4210.0	2.50	2.42	2.49
4260.0	4290.0	2.93	2.85	3.25
4360.0	4390.0	3.86	3.71	3.08

LO (MHz)	LO VSWR (:1) @LO (dBm)		
	+14	+17	+20
950.0	15.00	8.90	7.83
1030.0	9.33	6.53	6.51
1110.0	6.03	5.33	5.74
1190.0	4.66	4.68	5.20
1270.0	3.82	4.06	4.66
1350.0	3.09	3.49	4.16
1430.0	2.52	3.14	3.90
1510.0	2.26	2.92	3.73
1590.0	2.03	2.71	3.50
1690.0	1.80	2.48	3.25
1770.0	1.67	2.33	3.05
1870.0	1.57	2.18	2.86
1950.0	1.49	2.06	2.69
2050.0	1.41	1.96	2.56
2130.0	1.38	1.89	2.45
2230.0	1.40	1.88	2.40
2310.0	1.42	1.86	2.34
2490.0	1.50	1.89	2.33
2590.0	1.56	1.90	2.33
2670.0	1.61	1.91	2.29
2770.0	1.65	1.95	2.33
2850.0	1.71	1.97	2.36
2950.0	1.82	2.01	2.37
3030.0	1.96	2.12	2.44
3130.0	2.03	2.15	2.42
3210.0	2.11	2.09	2.36
3310.0	2.14	2.07	2.21
3390.0	2.11	1.95	2.11
3490.0	1.98	1.77	1.85
3570.0	1.91	1.66	1.70
3670.0	1.83	1.56	1.56
3750.0	1.67	1.34	1.40
3850.0	1.35	1.19	1.32
3930.0	1.17	1.18	1.44
4030.0	1.10	1.39	1.74
4110.0	1.31	1.67	2.05
4210.0	1.69	2.11	2.48
4290.0	1.99	2.41	2.77
4390.0	2.37	2.70	2.85

IF (OUT) (MHz)	IF VSWR @LO=2000MHz (:1) @LO (dBm)		
	+14	+17	+20
10.0	1.34	1.44	1.52
30.0	1.35	1.45	1.54
50.0	1.35	1.44	1.53
70.0	1.31	1.40	1.48
90.0	1.34	1.43	1.51
110.0	1.35	1.44	1.52
130.0	1.32	1.40	1.48
150.0	1.30	1.38	1.45
190.0	1.37	1.44	1.50
210.0	1.35	1.41	1.47
250.0	1.43	1.48	1.52
270.0	1.45	1.49	1.53
310.0	1.55	1.58	1.61
330.0	1.57	1.58	1.60
370.0	1.67	1.67	1.68
390.0	1.78	1.76	1.75
430.0	1.81	1.77	1.75
490.0	2.06	1.99	1.93
510.0	2.16	2.07	2.01
550.0	2.30	2.18	2.09
570.0	2.46	2.33	2.23
610.0	2.57	2.41	2.29
630.0	2.64	2.49	2.37
670.0	2.85	2.68	2.53
690.0	2.82	2.64	2.49
730.0	3.02	2.82	2.66
750.0	2.95	2.76	2.60
790.0	3.00	2.81	2.65
810.0	2.91	2.71	2.56
850.0	2.91	2.72	2.58
870.0	2.70	2.53	2.39
910.0	2.44	2.31	2.20
930.0	2.35	2.22	2.13
970.0	2.02	1.92	1.86
990.0	2.00	1.92	1.87
1030.0	2.09	2.02	1.99
1050.0	2.27	2.21	2.18
1090.0	2.90	2.86	2.84
1110.0	3.23	3.19	3.15

Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+9	9	5	9	17	29	25	32	33	33
1	-	15	+0	44	15	36	29	54	29	38	42	52
2	67	57	67	36	47	47	41	47	73	52	53	58
3	>90	68	57	75	51	68	54	64	68	67	58	64
4	>90	>80	>80	>80	>80	>80	79	74	79	>80	>80	79
5	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
6	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
7	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
8	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
9	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
10	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1600 MHz; -5.00 dBm.
LO IN: 1630 MHz; +17.00 dBm
IF OUT: 30 MHz; -10.48 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	1	20	16	21	27	42	35	50	51	50
1	-	15	+0	48	16	43	30	53	34	42	49	64
2	47	38	62	29	41	34	37	38	57	56	47	63
3	87	45	37	63	37	50	41	50	56	58	48	52
4	>90	53	53	50	69	44	52	50	53	52	64	60
5	>90	73	66	64	63	72	52	64	54	55	68	65
6	>90	74	81	79	72	67	83	67	67	55	66	64
7	>90	81	>89	83	76	75	73	>89	67	83	61	64
8	>90	87	81	86	>89	78	88	80	>89	77	75	64
9	>90	>89	>89	88	>89	>89	>89	>89	>89	86	79	84
10	>90	>89	>89	>89	>89	>89	>89	86	>89	>89	>89	85
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

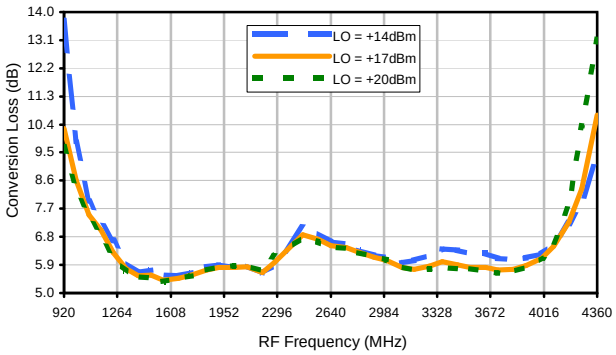
Test conditions: RF IN: 1600 MHz; 5.00 dBm.
LO IN: 1630 MHz; +17.00 dBm
IF OUT: 30 MHz; -0.75 dBm

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.

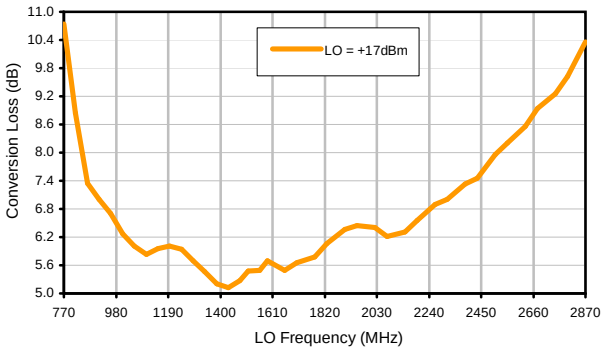
Frequency Mixer MBR-17H

Typical Performance Curves

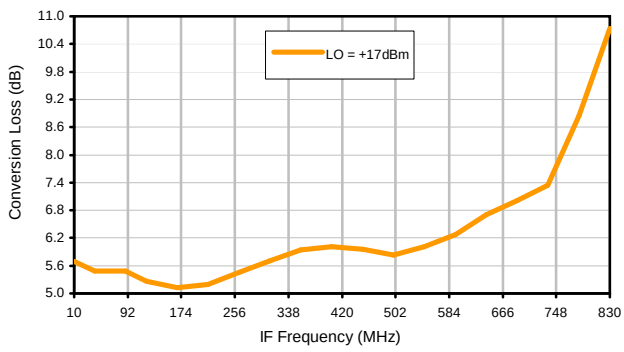
Conversion Loss @ IF=30MHz



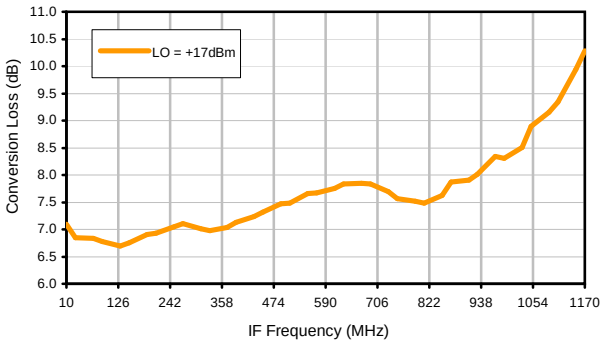
Conversion Loss vs. LO @ RF=1600MHz



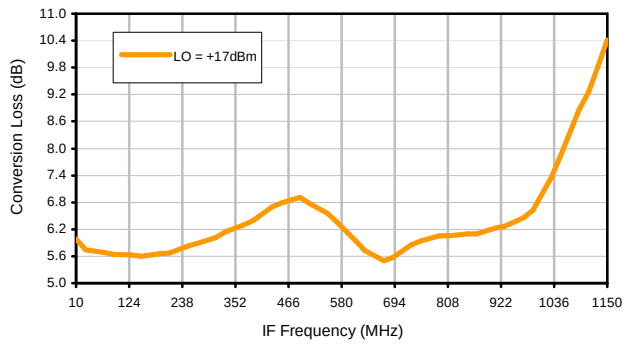
Conversion Loss vs. IF @ RF=1600MHz



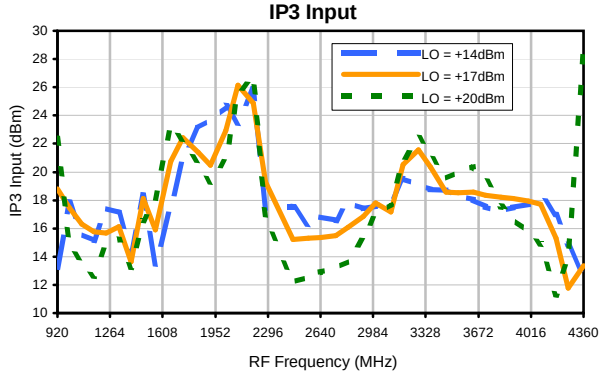
Conversion Loss vs. IF @ RF=1189.9MHz



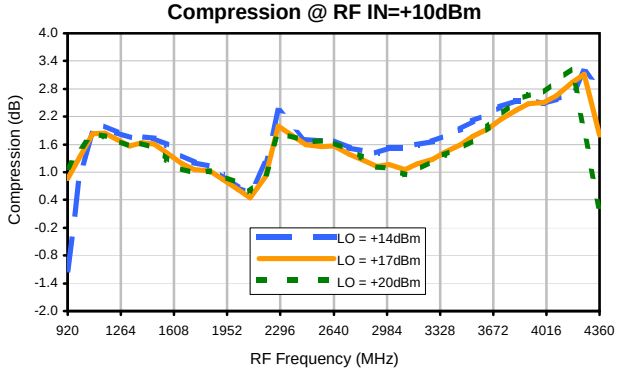
Conversion Loss vs. IF @ RF=2010.1MHz



IP3 Input

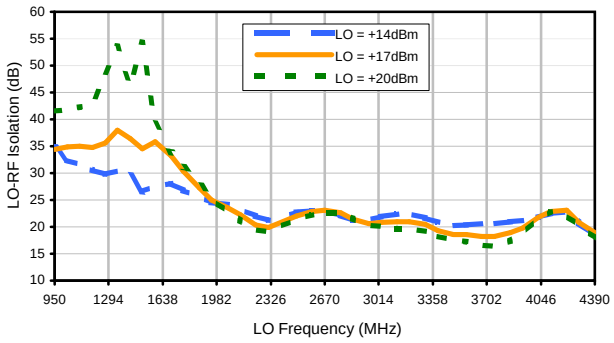


Compression @ RF IN=+10dBm

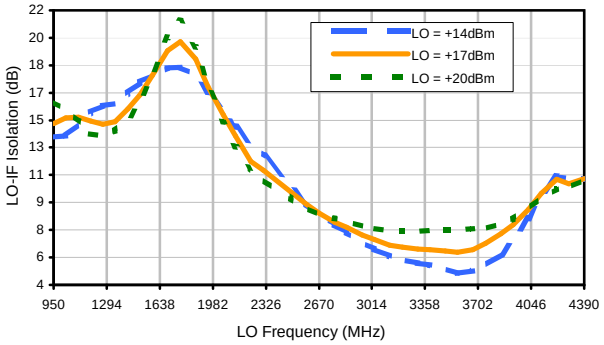


Typical Performance Curves

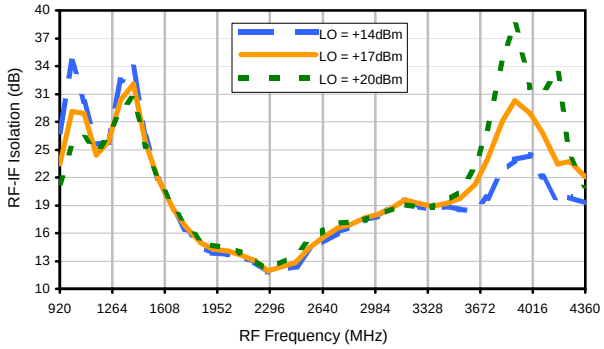
LO-RF Isolation



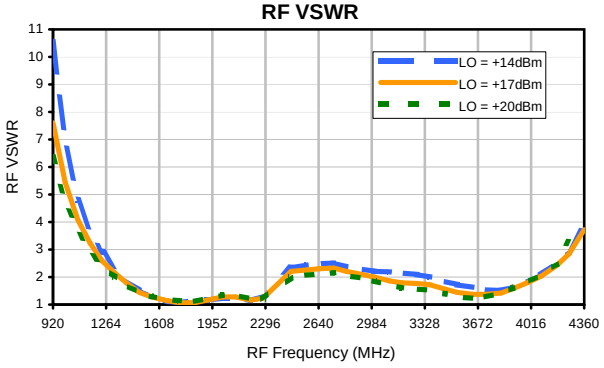
LO-IF Isolation



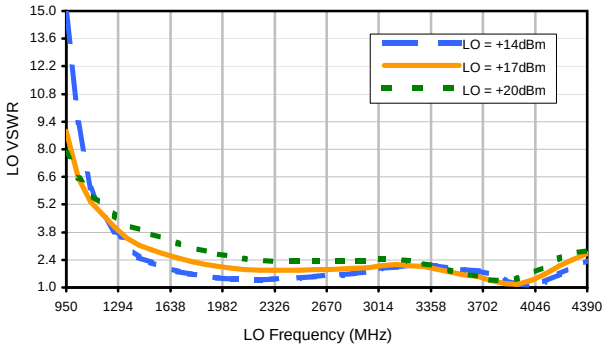
RF-IF Isolation



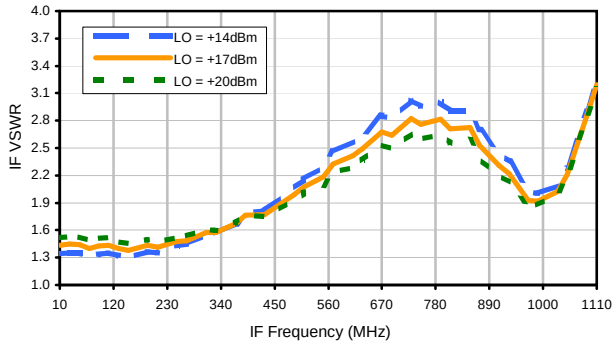
RF VSWR



LO VSWR



IF VSWR



Harmonics Tables

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	+9	9	5	9	17	29	25	32	33	33
1	-	15	+0	44	15	36	29	54	29	38	42	52
2	67	57	67	36	47	47	41	47	73	52	53	58
3	>90	68	57	75	51	68	54	64	68	67	58	64
4	>90	>80	>80	>80	>80	>80	79	74	79	>80	>80	79
5	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
6	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
7	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
8	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
9	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
10	>90	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80	>80
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

Test conditions: RF IN: 1600 MHz; -5.00 dBm.
LO IN: 1630 MHz; +17.00 dBm
IF OUT: 30 MHz; -10.48 dBm

RF HARMONICS ORDER	(-dBm)	(-dBc)										
0	-	-	1	20	16	21	27	42	35	50	51	50
1	-	15	+0	48	16	43	30	53	34	42	49	64
2	47	38	62	29	41	34	37	38	57	56	47	63
3	87	45	37	63	37	50	41	50	56	58	48	52
4	>90	53	53	50	69	44	52	50	53	52	64	60
5	>90	73	66	64	63	72	52	64	54	55	68	65
6	>90	74	81	79	72	67	83	67	67	55	66	64
7	>90	81	>89	83	76	75	73	>89	67	83	61	64
8	>90	87	81	86	>89	78	88	80	>89	77	75	64
9	>90	>89	>89	88	>89	>89	>89	>89	>89	86	79	84
10	>90	>89	>89	>89	>89	>89	>89	86	>89	>89	>89	85
	RF CAL	0	1	2	3	4	5	6	7	8	9	10

LO HARMONICS ORDER

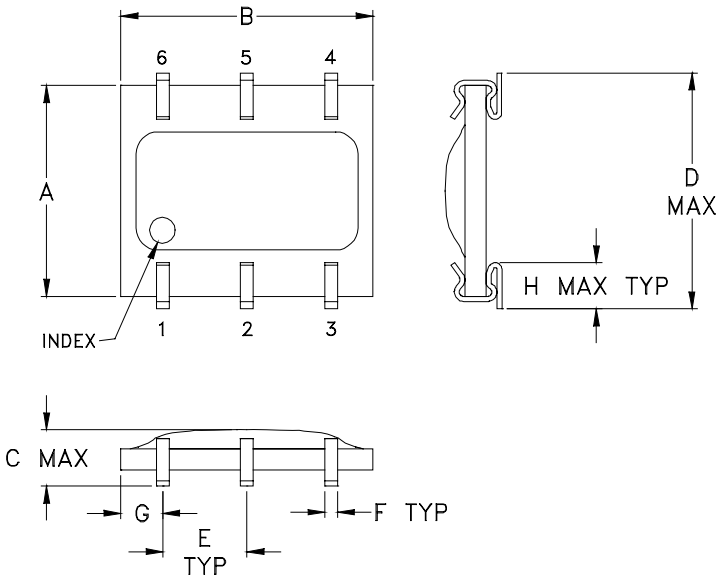
Test conditions: RF IN: 1600 MHz; 5.00 dBm.
LO IN: 1630 MHz; +17.00 dBm
IF OUT: 30 MHz; -0.75 dBm

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.

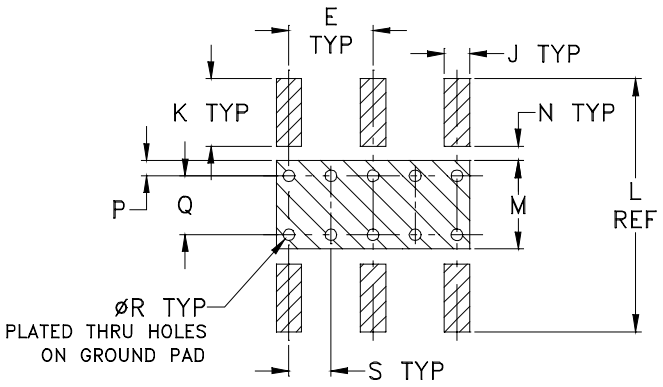
Case Style SM26

SM26

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002
ADJACENT GROUND PINS SHALL BE CONNECTED TO EACH OTHER AND TO GROUND PAD

CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N
SM26	.250 (6.35)	.300 (7.62)	.095 (2.41)	.290 (7.37)	.100 (2.54)	.015 (.38)	.050 (1.27)	.060 (1.52)	.030 (.76)	.080 (2.03)	.300 (7.62)	.100 (2.54)	.020 (.51)

CASE#	P	Q	R	S	WT, GRAM
SM26	.015 (.38)	.070 (1.78)	.014 (.36)	.050 (1.27)	.3

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .005; 3 Pl. ± .005

Notes:

1. Case material: Plastic encapsulation on Ceramic base.
2. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.

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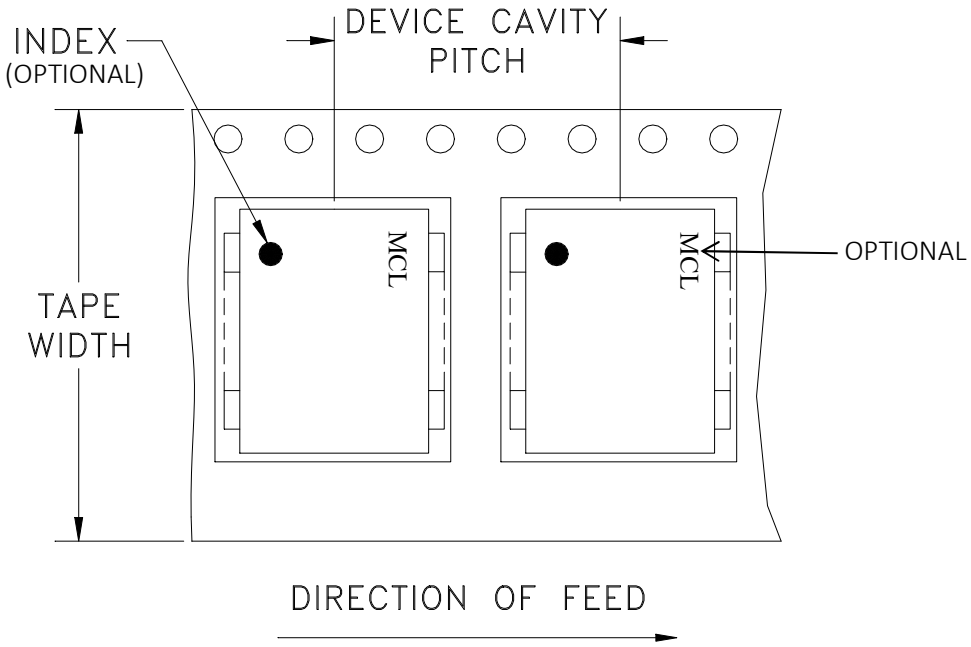
Tape & Reel Packaging TR-F34

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
16	12	7	Small quantity standard (see note)	20
				50
				100
				200
		13	Standard	500
				1000

Note: Availability of small reel quantity varies by model.
Refer to pricing and availability on individual model dashboard.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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Environmental Specifications ENV02T1

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	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
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
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