

# VOLTAGE CONTROLLED OSCILLATORS

Click package to view outline drawing



## MINIATURE SURFACE-MOUNT PACKAGE

FREQUENCY RANGE (MHz)	NOMINAL TUNING VOLTAGE (Volts)	DC BIAS REQUIREMENTS		OUTPUT POWER		AVERAGE TUNING SENSITIVITY MHz/Volt	TYPICAL PHASE NOISE dBc/Hz Offset at 10 KHz/100 KHz	TYPICAL HARMONIC SUPPRESSION (dBc)	PUSHING (MHz/Volt) (Typ)	PULLING (@ 1.75:1 VSWR) MHz (Typ)	MODEL
		VOLTAGE (Volts)	CURRENT (mA)	dBm	Tolerance (dB)						
40 - 100	1 - 17	+12	<35	+8	± 2	4 - 7	-100/-125	10	1	5	MFC40A
50 - 100	0 - 17	+5	<35	+5	± 2	3 - 6	-105/-125	10	1	2	MFC-S-50
50 - 90	1 - 10	+12	<30	+7	± 1.5	5 - 8	-108/-132	12	0.35	0.5	MFC50A12
56 - 103	0 - 12	+12	<45	+8	± 2	5 - 10	-108/-132	12	1	5	MFC56A
60 - 120	0 - 17	+5	<35	+5	± 2	4 - 8	-95/-115	10	2	2	MFC-S-60
70 - 120	0 - 12	+5	<35	+4	± 2	5 - 8	-105/-125	10	2	5	MFC70A
100 - 200	0 - 17	+5	<35	+5	± 2	6 - 14	-112/-134	10	1	0.4	MFC-S-100
104 - 176	1 - 12	+12	<30	+10	± 2	7 - 12	-105/-125	15	1	1.5	MFC104A
150 - 300	0 - 17	+5	<35	+4	± 2	10 - 20	-107/-132	10	1	0.4	MFC-S-150
165 - 205	1 - 12	+12	<30	+10	± 2.5	8 - 16	-105/-128	25	0.5	2	MFC165A
200 - 400	0 - 17	+5	<35	+5	± 2	10 - 20	-95/-118	10	2	5	MFC-S-200
205 - 280	0.5 - 4.5	+5	<35	+1	± 2	20 - 25	-97/-120	10	2	5	MFC205A
210 - 230	0.5 - 3	+3	<15	0	± 2	12 - 16	-95/-117	10	1	3	MFC210B
210 - 270	1 - 12	+5	<35	+5	± 2	5 - 6	-93/-117	10	2	5	MFC210A
225 - 412	0 - 12	+12	<45	+10	± 2	15 - 25	-100/-125	12	2	5	MFC225A
240 - 502	1 - 17	+5	<35	+5	± 2	15 - 30	-95/-120	10	2	7	MFC240A
320 - 360	1 - 7	+5	<35	+8	± 1.5	9 - 14	-100/-125	15	1	5	MFC320A
350 - 410	2 - 10	+8	<35	+5	± 2	8 - 11	-95/-120	10	2	5	MFC350A
360 - 410	0.5 - 5	+5	<35	+3	± 3	12 - 18	-103/-123	15	2	5	MFC360A
381 - 406	1 - 5	+5	<15	+2.5	± 2.5	8 - 12	-110/-133	15	1	2	MFC381A
400 - 450	1 - 10	+10	<20	+9	± 2	6 - 10	-110/-133	10	1	5	MFC400A
400 - 800	0 - 15	+5	<35	+5	± 2	20 - 30	-95/-117	10	2	5	MFC-S-400
437 - 461	1 - 5	+5	<15	+2.5	± 2.5	8 - 12	-110/-133	15	1	2	MFC437A
445 - 495	2 - 10	+12	<30	+5	± 2	6 - 10	-110/-135	30	1	5	MFC445A
445 - 470	1 - 5	+5	<15	+2.5	± 2.5	8 - 12	-110/-133	15	1	2	MFC445B
446 - 588	0.5 - 4.5	+10	<25	+6	± 3	44 - 66	-100/-125	7	1	2	MFC446A
467 - 492	1 - 5	+5	<15	+2.5	± 2.5	8 - 12	-110/-133	15	1	2	MFC467A
487 - 568	0 - 12	+5	<35	0	± 2	8 - 12	-100/-125	10	2	5	MFC487A
490 - 560	0 - 4.5	+8	<20	0	± 2	17 - 25	-102/-125	10	1	2	MFC490A
500 - 1000	0.2 - 10	+5	<35	+5	± 3.5	55 - 70	-90/-112	10	3	10	MFC500A
511 - 536	1 - 5	+5	<15	+2	± 2	8 - 10	-110/-133	10	1	2	MFC511A
525 - 575	0 - 5	+5	<35	0	± 2	13 - 17	-105/-125	10	2	5	MFC525A
533 - 558	1 - 5	+5	<15	+2.5	± 2.5	8 - 12	-110/-133	10	1	5	MFC533A

### COMMON SPECIFICATIONS

Output Impedance: 50 ohms  
VSWR: 1.5:1 (Typ)  
Specifications are at +25°C

50 ohms  
1.5:1 (Typ)

Operating Temperature: -30°C to +70°C  
**Contact the factory for more stringent operating temperature range**

For pin location and package outline drawings, see back pages.

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174

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FREQUENCY RANGE (MHz)	NOMINAL TUNING VOLTAGE (Volts)	DC BIAS REQUIREMENTS		OUTPUT POWER		AVERAGE TUNING SENSITIVITY MHz/Volt	TYPICAL PHASE NOISE dBc/Hz Offset at 10 KHz/100 KHz	TYPICAL HARMONIC SUPPRESSION (dBc)	PUSHING (MHz/Volt) (Typ)	PULLING (@ 1.75:1 VSWR) MHz (Typ)	MODEL
		VOLTAGE (Volts)	CURRENT (mA)	dBm	Tolerance (dB)						
550 - 590	1 - 11	+12	<50	+11	±2	4 - 6	-107/-130	12	5	5	MFC550A
560 - 760	3 - 20	+12	<20	+5	±3	15 - 20	-105/-125	10	5	15	MFC560A
584 - 656	0 - 12	+5	<35	0	±2	7 - 11	-102/-125	10	1	2	MFC584A
600 - 1200	0.5 - 20	+5	<35	+5	±2	30 - 55	-95/-115	10	5	15	MFC-S-600
700 - 1400	0 - 25	+5	<35	+5	±2	25 - 40	-95/-115	10	5	15	MFC-S-700
750 - 1450	0 - 14	+15	<35	+12	±2	55 - 75	-95/-120	10	5	5	MFC750A
800 - 1600	0 - 20	+5	<35	+5	±2	30 - 60	-95/-115	10	5	15	MFC-S-800
800 - 1600	0.5 - 21	+11.5	<40	+9	±3	30 - 60	-95/-115	20	5	15	MFC800A
860 - 1240	0.5 - 8.5	+10	<35	+10	±2	50 - 60	-98/-123	10	1	15	MFC860A
900 - 1650	0 - 12	+12	<45	+8	±2	60 - 80	-95/-120	12	2	5	MFC900A
900 - 1800	0 - 20	+5	<35	+5	±2	30 - 60	-95/-120	10	5	15	MFC-S-900
902 - 928	0 - 2.2	+3.3	<15	0	±2	25 - 30	-95/-120	10	2	10	MFC902A
925 - 960	0.5 - 4.5	+5	<25	+6	±2	16 - 21	-100/-125	10	1.5	2	MFC925C
925 - 1650	2 - 21	+11.5	<40	+8	±3	35 - 80	-95/-115	6	1	10	MFC925A
925 - 1650	1 - 21	+5	<20	+6	±2	40 - 80	-95/-120	6	1	10	MFC925B
950 - 1175	1.5 - 7	+10	<35	+8	±1	50 - 60	-100/-128	10	5	15	MFC950A
950 - 1650	1 - 10	+12	<45	+6	±2	85 - 100	-85/-110	15	3	9	MFC950B
1000 - 1300	0 - 5	+5	<25	+10	±2	65 - 95	-97/-123	10	3	12	MFC1000A
1000 - 1357	1.5 - 10	+12	<40	+10	±2	45 - 65	-95/-115	10	3.5	8	MFC1000B
1005 - 1650	1 - 15	+15	<50	+12	±2	50 - 70	-94/-118	15	4	11	MFC1005A
1030 - 1130	0.5 - 5.5	+5	<35	+3	±2	30 - 50	-93/-120	10	5	15	MFC1030A
1074 - 1442	0.8 - 7.4	+10	<20	+4.5	±3	55 - 115	-95/-120	15	5	5	MFC1074A
1090 - 1290	1 - 5	+5	<25	+9	±2	55 - 75	-95/-120	10	3	9	MFC1090A
1092 - 1152	1 - 4	+5	<35	+5	±2	20 - 30	-93/-120	10	5	15	MFC1092A
1140 - 1340	1 - 11	+11	<50	+7	±2	30 - 45	-93/-113	10	3.5	3	MFC1140B
1140 - 1610	0.5 - 8.5	+10	<35	+10	±2	60 - 70	-90/-115	10	5	15	MFC1140A
1140 - 1610	0 - 8.5	+5	<20	+6	±3	70 - 90	-92/-112	10	5	15	MFC1140C
1150 - 1520	1 - 11	+12	<50	+11	±2	55 - 75	-95/-115	10	2	10	MFC1150A
1200 - 1800	1 - 10	+10	<30	0	±2	60 - 100	-85/-110	10	2	5	MFC1200A
1200 - 1800	0 - 14	+15	<35	+12	±2	48 - 64	-92/-115	10	4	12	MFC1200B
1200 - 2300	0 - 25	+5	<35	+3.5	±2.5	35 - 80	-90/-115	10	5	15	MFC1200C
1250 - 2500	0 - 28	+5	<35	+6	±3	55 - 75	-90/-120	10	5	15	MFC1250A
1290 - 1450	0.5 - 4	+5	<35	+2	±2	45 - 75	-93/-115	20	5	15	MFC1290A
1295 - 1705	1 - 10	+12	<40	+10	±2	35 - 50	-95/-120	10	4	12	MFC1295A
1300 - 1500	0.5 - 5	+5	<35	+8	±2	40 - 60	-90/-115	10	5	15	MFC1300B

### COMMON SPECIFICATIONS

Output Impedance:

50 ohms

Operating Temperature:

-30°C to +70°C

VSWR:

1.5:1 (Typ)

**Contact the factory for more stringent operating temperature range**

Specifications are at +25°C

For pin location and package outline drawings, see back pages.

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		VOLTAGE (Volts)	CURRENT (mA)	dBm	Tolerance (dB)						
1300 - 2000	0 - 20	+8	<35	+9	± 2	35 - 55	-90/-115	10	5	15	MFC1300A
1310 - 1705	0.5 - 9.5	+12	<40	+10	± 2	48 - 65	-95/-115	10	4	12	MFC1310A
1350 - 2450	0.5 - 20	+5	<35	+4	± 3	60 - 100	-92/-116	10	5	15	MFC1350A
1355 - 1405	1 - 5	+5	<40	+5	± 2	15 - 22	-95/-117	15	4	10	MFC1355A
1400 - 2000	1 - 20	+8	<35	+7	± 3	35 - 47	-92/-115	10	5	15	MFC1400B
1400 - 2600	0 - 25	+8	<35	+7	± 2	55 - 75	-95/-120	12	5	15	MFC1400A
1420 - 2007	1 - 8	+10	<35	+6	± 2	85 - 110	-83/-108	10	2	15	MFC1420A
1420 - 1655	0.5 - 11	+8	<20	+10	± 2	28 - 40	-98/-118	10	3	10	MFC1420B
1423 - 1458	1 - 4	+5	<20	0	± 2	12 - 25	-97/-122	10	5	15	MFC1423A
1446 - 1880	0.8 - 7.4	+10	<20	+4.5	± 3	65 - 125	-92/-118	15	5	5	MFC1446A
1510 - 1651	1.5 - 8	+8	<15	+2.5	± 2.5	18 - 36	-96/-121	12	3	5	MFC1510A
1525 - 2350	1 - 13.5	+15	<35	+12	± 2.5	75 - 100	-90/-117	12	5	15	MFC1525A
1575 - 2575	0 - 20	+5	<35	+4	± 3	60 - 80	-90/-115	10	5	15	MFC1575A
1600 - 2000	1 - 10	+8	<35	+6	± 2	50 - 60	-95/-115	10	5	15	MFC1600A
1620 - 1740	0.5 - 4.5	+8	<35	+10.5	± 2.5	32 - 45	-95/-117	10	3	12	MFC1620A
1640 - 1900	1 - 10	+10	<35	+7	± 2	35 - 50	-90/-115	10	3	10	MFC1640A
1700 - 1850	2 - 10	+12	<30	+10	± 2	18 - 25	-96/-121	20	1	15	MFC1700B
1700 - 2500	0.5 - 7	+15	<35	+6.5	± 2	80 - 190	-90/-110	10	5	15	MFC1700A
1750 - 2500	1 - 12	+5	<35	+7.5	± 2.5	75 - 100	-90/-115	10	4	12	MFC1750A
1772 - 1913	1.5 - 8	+8	<15	+2.5	± 2.5	18 - 36	-97/-121	12	3	5	MFC1772A
1780 - 2980	0 - 22	+5	<30	+6	± 2	60 - 75	-90/-115	10	5	10	MFC1780A
1805 - 1880	0.5 - 4.5	+5	<25	+6	± 2	31 - 38	-95/-120	10	1.5	2	MFC1805A
1830 - 2200	2 - 10	+12	<40	+10	± 2	45 - 55	-97/-118	15	4	14	MFC1830A
1860 - 1960	0.5 - 5	+8	<35	+6	± 2	30 - 50	-97/-117	10	2	10	MFC1860A
1900 - 1960	0 - 5	+5	<35	+2	± 2	24 - 40	-95/-120	10	5	15	MFC1900B
1900 - 2400	1 - 8	+5	<35	+6	± 3	80 - 110	-85/-110	10	5	15	MFC1900A
1920 - 1980	0 - 5	+5	<20	+3	± 2	15 - 25	-90/-110	10	5	5	MFC1920A
1950 - 2265	1 - 20	+5	<40	+7	± 2	15 - 22	-95/-117	10	5	15	MFC1950A
2007 - 2595	1 - 8	+10	<35	+6.5	± 2	85 - 110	-85/-107	10	2	15	MFC2007A
2030 - 2330	0 - 5	+5	<35	+3	± 2	65 - 80	-90/-115	15	4	12	MFC2030A
2050 - 2850	0 - 9	+5	<25	+2	± 2	100 - 120	-70/-95	10	8	30	MFC2050A

### COMMON SPECIFICATIONS

Output Impedance: 50 ohms  
 VSWR: 1.5:1 (Typ)  
 Specifications are at +25°C

Operating Temperature: -30°C to +70°C  
*Contact the factory for more stringent operating temperature range*

For pin location and package outline drawings, see back pages.

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		VOLTAGE (Volts)	CURRENT (mA)	dBm	Tolerance (dB)						
2100 - 2400	1 - 14	+12	<35	+10	± 3.5	27 - 35	-101/-125	10	4	18	MFC2100A
2130 - 2204	0 - 5	+10	<35	+4	± 2	25 - 40	-85/-110	10	5	15	MFC2130A
2140 - 2200	0.5 - 5	+5	<35	0	± 3	22 - 30	-90/-112	10	5	15	MFC2140A
2160 - 2480	0 - 5.5	+3.3	<15	0	± 2	68 - 85	-88/-110	15	5	15	MFC2160A
2180 - 2240	0 - 5	+5	<35	+2	± 2	24 - 40	-95/-120	10	5	15	MFC2180A
2200 - 2400	0.5 - 4	+4	<30	+11	± 2.5	80 - 100	-87/-113	10	5	15	MFC2200A
2200 - 2800	0.5 - 17	+15	<35	+12	± 2	42 - 55	-90/-112	10	5	17	MFC2200B
2250 - 2400	2 - 12	+5	<35	+6	± 2	17 - 25	-97/-118	10	5	15	MFC2250A
2265 - 2750	1 - 22	+5	<40	+7	± 2	27 - 40	-95/-117	10	5	18	MFC2265A
2270 - 2540	2 - 15	+5	<35	+6	± 2	23 - 30	-100/-125	10	2	5	MFC2270A
2290 - 2590	1 - 11	+12	<30	+10	± 2	40 - 50	-100/-125	20	1	15	MFC2290A
2300 - 2500	2 - 10	+12	<30	+10	± 2	25 - 35	-100/-125	20	1	15	MFC2300A
2330 - 2550	1 - 11	+12	<35	+10	± 2	30 - 50	-95/-120	15	5	15	MFC2330A
2400 - 2500	0 - 5	+5	<20	+3.5	± 2.5	20 - 30	-95/-117	10	5	12	MFC2400A
2425 - 2825	1 - 13	+12	<35	+10	± 3	30 - 60	-92/-112	10	5	15	MFC2425A
2430 - 2480	0.5 - 5	+5	<35	0	± 3	18 - 28	-90/-112	10	5	15	MFC2430A
2470 - 2740	2 - 15	+5	<35	+6	± 2	23 - 30	-90/-115	10	5	15	MFC2470A
2500 - 2700	2 - 10	+12	<30	+10	± 2	25 - 35	-97/-119	15	1	15	MFC2500A
2500 - 2700	2 - 10	+5	<30	+10	± 2	30 - 40	-95/-120	15	1	15	MFC2500B
2520 - 2720	1 - 10	+11	<50	+7	± 2	36 - 44	-90/-115	10	3.5	3	MFC2520A
2560 - 2800	0.5 - 8	+5	<35	+9	± 2	35 - 50	-92/-117	10	5	15	MFC2560A
2700 - 3100	1 - 12	+5	<35	+7	± 2	40 - 55	-90/-110	10	5	15	MFC2700A
2750 - 2860	0.5 - 9	+5	<35	+8	± 2	15 - 25	-93/-115	10	5	15	MFC2750A
2900 - 3100	1 - 10	+10	<30	+7	± 2	25 - 55	-80/-105	20	10	20	MFC2900A
3200 - 3320	0 - 5	+5	<35	+2	± 2	35 - 50	-85/-110	10	5	15	MFC3200A
3300 - 3400	0.5 - 10	+10	<35	+8	± 3	20 - 30	-90/-115	10	5	15	MFC3300A
4650 - 5350	1 - 14	+15	<20	+5	± 2	100 - 130	-80/-100	10	10	20	MFC4650A
5350 - 5750	1 - 4	+10	<45	+9.5	± 3	170 - 230	-70/-97	10	8	35	MFC5350A
5400 - 5900	1 - 14	+15	<20	+5	± 2	100 - 130	-80/-100	10	10	20	MFC5400A
5900 - 6100	3 - 8	+10	<20	+5	± 3	130	-70/-97	10	10	20	MFC5900A

### COMMON SPECIFICATIONS

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Operating Temperature: -30°C to +70°C  
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