



**Mixers**

**High Performance Frequency Mixers**  
Typical and Guaranteed Specifications—50 Ω System

Model	Frequency Range			LO Power dBm Nominal	Conversion Loss Noise Figure <sup>^</sup>		Isolation dB				IP3/IP2 dBm Typ.	
	RF	MHz LO	IF		dB	dB	L to R		L to I			
				Typ.	Max.	Typ.	Min.	Typ.	Min.			
<b>Available in standard TO-8, TO-8H and Surface Mount Mixer</b>												
MC1502	20-600	10-800	DC-200	7	6.0	7.5	40	35	32	25	12/35	
	10-1500	10-1500	DC-200		7.5	8.5	30	25	25	14	12/35	
	10-1500	10-1500	200-1000		8.5	9.5						
MC1505	20-600	10-800	DC-200	10	6.5	8.0	40	27	35	25	17/40	
	10-1500	10-1500	DC-200		7.5	8.5	25	20	24	15	17/35	
	10-1500	10-1500	200-1000		8.0	9.0	25	20	24	15	17/35	
MC1507	20-600	10-800	DC-200	15	7.0	8.5	40	32	35	25	25/42	
	10-1500	10-1500	DC-200		7.5	9.0	35	25	24	16	25/42	
	10-1500	10-1500	200-1000		8.5	10.0						
MR3002	2500-3000	2500-3000	1-500	7	4.5	5.5	35	25	25	20	7	
	2300-3500	2300-4000	DC-2000		5.5	6.5	35	25	25	18	7	
MCH3008	5-1000	10-1500	1-500	10	6.0	7.5	43	35	40	32	20/50	
	1-3000	1-3100	1-2000		7.0	9.0	40	30	35	25	20/50	
	1-3400	1-3400	1-2000		8.0	9.5	40	30	35	25	20/50	
MCH3009	5-1000	10-1500	1-500	19	6.0	7.5	40	22	45	35	28/58	
	1-3000	1-3100	1-2000		7.0	8.5	35	22	40	30	28/55	
	1-3400	1-3400	1-2000		8.0	9.5	35	22	40	30	28/52	
MTS6018	10-2000	10-2000	5-1000	13	7.0	8.5	30	22	35	28	22/38	
	2000-6000	2000-6000	5-1000		7.5	8.5	25	18	30	20	15/30	
	2000-6000	2000-6000	5-3000		8.0	9.0	25	18	30	20	15/30	
MTS6029	10-2000	10-2000	5-1000	22	7.0	8.5	30	24	28	20	25/45	
	2000-3000	2000-3000	5-1000		7.0	8.5	25	18	22	20	24/42	
	3000-6000	3000-6000	5-3000		8.0	9.0	25	18	24	20	20/32	
MM8221	3000-8000	3000-8000	DC-0.5	7	5.0	6.5	45	35	35	22	11/45	
	2000-8000	2000-8000	DC-0.5		6.5	7.5	45	35	35	22		
	2000-8000	2000-8000	0.5-1.5		8.0	9.0	45	35	35	22		
MS10623*	7000-9000	7000-9000	DC-500	16	8.5	9.5	40	35	30	25	18/40	
	6000-10000	6000-10000	DC-2000		9.0	10.0	40	35	30	25	18/40	
MM20421	4000-20000	4000-20000	DC-2000	10	7.5	10.0	28	20	22	16	13/38	
MM20441	4000-20000	4000-20000	DC-4000	10	8.5	11.5	27	20	21	16	13/38	
MM24422	4000-24000	4000-24000	1000-6000	13	8.2	11.5	23	17	22	15	15/36	

Current data sheets available on website. <sup>^</sup> Noise Figure is specified only down to 1 MHz for the IF frequency to avoid 1/F contributions.  
\*SMT0-8 Mixer Package

## High Performance Frequency Mixers

Typical and Guaranteed Specifications—50 Ω System

Model	Frequency Range			LO Power dBm Nominal	Conversion Loss Noise Figure <sup>^</sup>		Isolation dB				IP3/IP2 dBm Typ.	
	RF	MHz LO	IF		dB	dB	L to R		L to I			
					Typ.	Max.	Typ.	Min.	Typ.	Min.		
<b>Available in standard Cougar Hi-Rel MixerPak</b>												
MMP12241 <i>(see note 1)</i>	3000-12000	3000-12000	DC-1000	7	6.0	7.0	40	30	22	15	10/40	
	2000-12000	2000-12000	DC-1000		7.0	8.5	40	30	22	15		
	2000-12000	2000-12000	1000-2000		8.5	9.5	40	30	22	15		
MMP12244 <i>(see note 1)</i>	3000-12000	3000-12000	DC-1000	16	6.0	7.0	40	30	22	15	19/45	
	2000-12000	2000-12000	DC-1000		7.0	9.0	35	25	18	13		
	2000-12000	2000-12000	1000-2000		8.5	10.0	35	25	18	13		
MMP12321 <i>(see note 1)</i>	3500-12000	3500-12000	DC-1000	7	4.5	6.0	42	35	32	25	12/42	
	3500-12000	3500-12000	1000-3000		7.0	8.0	42	35	32	25		
MMP12324 <i>(see note 1)</i>	3500-12000	3500-12000	DC-1000	13	5.5	7.0	40	35	32	25	20/50	
	3500-12000	3500-12000	DC-2000		7.5	8.5	40	35	32	25		
MMP18441 <i>(see note 1)</i>	5000-17000	5000-17000	DC-2000	10	5.5	6.5	30	20	30	15	12/35	
	4000-18000	4000-18000	DC-2000		7.0	8.0	30	20	30	15		
	4000-18000	4000-18000	2000-4000		8.5	9.5	30	20	30	15		
MMP18444 <i>(see note 1)</i>	5000-17000	5000-17000	DC-500	16	5.5	6.5	30	20	25	10	22/50	
	4000-18000	4000-18000	DC-1000		7.0	8.0	30	20	25	10		
	4000-18000	4000-18000	1000-2000		8.5	9.5	30	20	25	10		
MMP18641 <i>(see note 1)</i>	6000-16000	6000-16000	DC-1000	7	5.0	7.0	38	32	25	15	12/50	
	6000-18000	6000-18000	DC-1000		7.0	7.0	38	32	25	15		
	6000-18000	6000-18000	1000-4000		8.0	9.0	38	32	25	15		
MMP18644 <i>(see note 1)</i>	6000-16000	6000-16000	DC-1000	16	5.0	7.0	38	32	15	10	22/50	
	6000-18000	6000-18000	DC-1000		6.0	8.0	38	32	15	10		
	6000-18000	6000-18000	1000-4000		8.0	9.0	38	32	15	10		
MMP20221 <i>(see note 1)</i>	2000-20000	2000-20000	DC-500	7	5.5	6.5	30	20	25	18	12/35	
	2000-20000	2000-20000	500-1000		7.0	9.0	30	20	25	18		
MMP20224 <i>(see note 1)</i>	2000-20000	2000-20000	DC-500	16	7.0	8.5	30	22	25	18	20/40	
	2000-20000	2000-20000	DC-1000		8.0	9.5	30	22	25	18		
MMP20281 <i>(see note 2)</i>	2000-20000	2000-20000	5-2000	13	7.0	8.5	25	15	20	15	18/42	
	2000-20000	2000-20000	2000-4000		7.0	8.5	25	15	20	15		
	2000-20000	2000-20000	4000-6000		8.5	9.5	25	15	20	15		
MMP20284 <i>(see note 2)</i>	2000-20000	2000-20000	5-2000	19	7.0	8.0	25	15	20	15	22/50	
	2000-20000	2000-20000	2000-4000		7.0	8.0	25	15	20	15		
	2000-20000	2000-20000	4000-6000		8.5	9.5	25	15	20	15		
MMP20291	2000-10000	2000-10000	1-8000	10	7.5	9.0	32	24	27	20	15/35	
	10000-20000	10000-20000	1-8000		8.0	9.5	32	24	27	20		
MMP20294	2000-10000	2000-10000	1-6000	19	7.5	9.5	22	15	25	20	19/40	
	10000-20000	10000-20000	1-6000		8.5	10.5	22	15	25	20		
	10000-20000	10000-20000	1-12000		9.0	11.0	22	15	25	20		
MMP20421	4000-20000	4000-20000	DC-2000	10	7.5	10.0	28	20	22	16	13/38	
MMP20441	4000-20000	4000-20000	DC-2000	10	7.5	10.0	28	20	22	16	13/38	

### Double Balanced Mixers

Note 1: Last digit of Model <sup>1</sup>	Lo Drive dBm	Input P -1dB dBm Typ	Input IP3 dBm Typ
(1)	+7 to +10	+2	+12
(2)	+10 to +13	+5	+15
(3)	+13 to +16	+8	+18
(4)	+16 to +19	+11	+21
(5)	+19 to +22	+14	+24

### Triple Balanced Mixers<sup>2</sup>

Note 2: Last digit of Model <sup>1</sup>	Lo Drive dBm	Input P -1dB dBm Typ	Input IP3 dBm Typ
(1)	+10 to +13	+5	+15
(2)	+13 to +16	+8	+18
(3)	+16 to +19	+11	+21
(4)	+19 to +22	+14	+24

<sup>1</sup> Last digit in model number signifies diode option. All models in tables for Note 1 and Note 2 have same conversion loss and isolation as shown above.

<sup>2</sup> Extra drive is needed for low end of the (n) Series Triple Balance Mixers.

Current data sheets available on website. ^ Noise Figure is specified only down to 1 MHz for the IF frequency to avoid 1/F contributions.