

MCH3009 1 TO 3400 MHz TO-8H TRIPLE-BALANCED MIXER

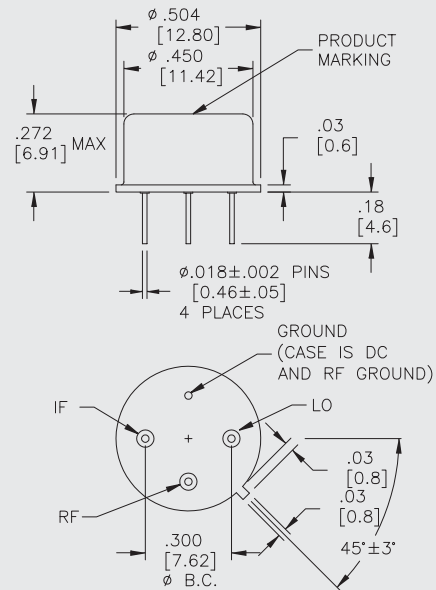
Typical Values

LO & RF	1-3400 MHz
IF	1 -2000 MHz
Third Order I.P.	+28.0 dBm
Conversion Loss	6.0 dB
LO Drive (nominal)	+19.0 dBm
High Isolation (LO to RF)	40.0 dB
Termination Insensitive	
Packages: Tall TO-8, or Standard Surface Mount Mixer	

MCH3009

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TO-8H Package for Mixer



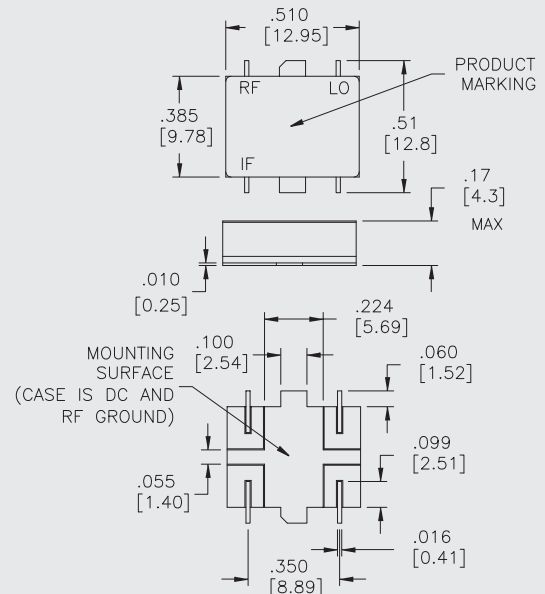
SPECIFICATIONS*

**Guaranteed
-55 to +85 °C**

Parameter	Port	Frequency (MHz)	Typ. (dB)	Max. (dB)	
SSB Conversion Loss and SSB Noise Figure	f _R	5 to 1000	6.0	7.5	
	f _L	10 to 1500	6.0	7.5	
	f _I	1 to 500	6.0	7.5	
	f _R	1 to 3000	7.0	8.5	
	f _L	1 to 3100	7.0	8.5	
	f _I	1 to 2000	7.0	8.5	
	f _R	1 to 3400	8.0	9.5	
Conversion Comp. Desensitization Level	f _R	Level = +12 dBm	—	1.0	
	f _{R2}	Level = +10 dBm	—	1.0	
Isolation			Typ. (dB)	Min. (dB)	
	f _L at R	f _L	1 to 1500	40	22
	f _L at I	f _L	1 to 2000	45	35
	f _R at I	f _R	1 to 2000	40	30
	f _L at R	f _L	1500 to 3400	35	22
	f _L at I	f _L	2000 to 3400	40	30
f _R at I	f _R	2000 to 3400	35	25	

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Surface Mount Package for Mixer



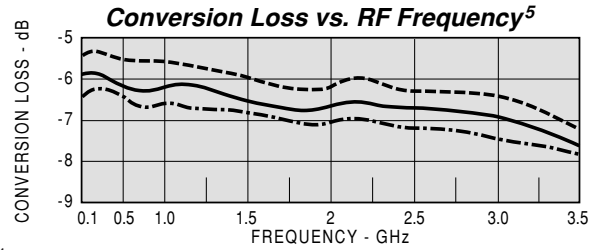
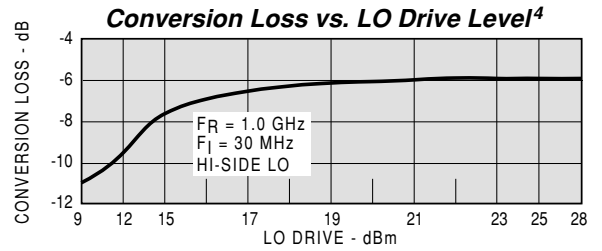
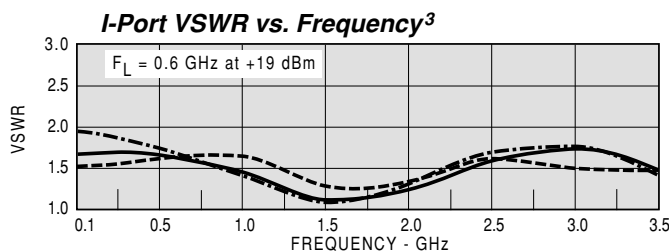
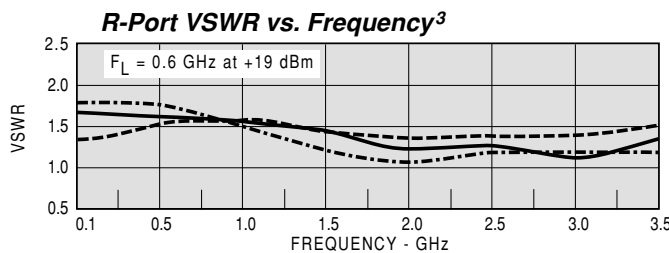
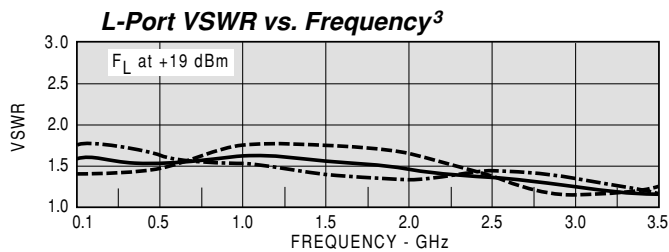
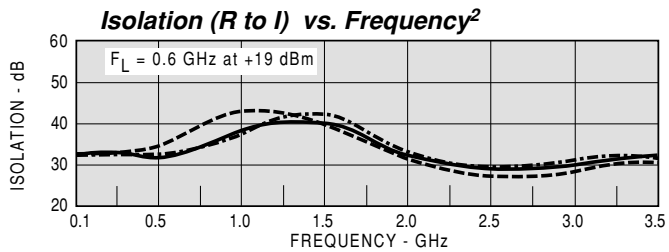
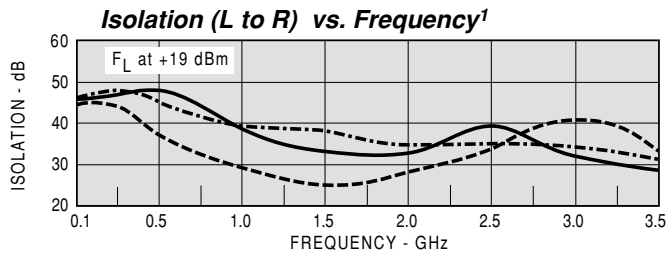
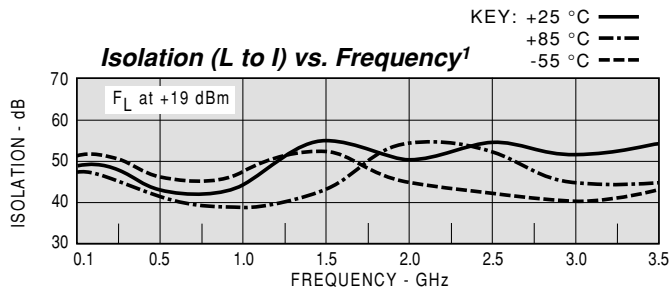
DIMENSIONS ARE IN INCHES [MILLIMETERS]

* Measured in a 50-ohm system with nominal LO drive of +19.0 dBm as a downconverter.

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	-65 to +125 °C
Peak Continuous Total Input Power	+28 dBm @ 25 °C
	derate to +25 dBm @ 100 °C
Peak Continuous Total Input Current @ 25°C	50 mA DC

TYPICAL PERFORMANCE

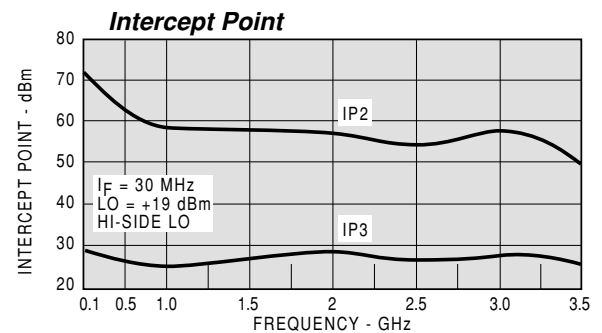


⁴ The minimum recommended drive level is +15 dBm. The maximum recommended drive level is +28 dBm.
⁵ Conversion loss of the mixer when used in an SSB system. The frequency ordinate refers to the R-port (f_R) with f_I at 30 MHz. Data plotted with an f_L level of +19.0 dBm.

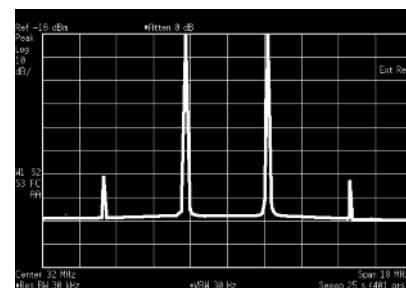
Harmonic Intermodulation Products (single tone)

HARMONICS OF f _R	0	1	2	3	4	5
5	86.2	85.6	90.1	86.9	87.5	86.8
4	86.5	84.8	87.2	86.7	87.9	86.4
3	84.6	87.7	86.9	88.1	86.9	87.6
2	85.0	87.6	86.2	87.7	86.4	88.0
1	86.2	81.3	81.8	68.9	78.1	69.9
0	87.0	76.1	86.9	67.4	81.6	66.3
	72.0	76.9	62.9	69.2	66.1	62.0
	70.5	75.0	64.3	70.8	64.2	65.4
	33.4	0.0	35.2	16.2	36.2	49.3
	32.9	0.0	37.3	15.1	39.5	31.3
	10.0	7.6	14.3	32.4	28.7	
	18.4	9.1	21.0	30.4	37.0	

F_R = 2000 MHz @ -5 dBm F_L = 2030 MHz
 F_L @ +19 dBm F_L @ +22 dBm



IP3



F_R = 2000/2004 MHz @ -5 dBm F_L = 2030 MHz @ +19 dBm
 Vertical Scale: 10 dB/DIV

¹ Level of the f_L signal fed through to the R- and I-ports with respect to the level of the f_L signal at the L-port.
² Level of the f_R signal fed through the I-port with respect to the level of the f_R signal at the R-port.
³ VSWR of the I- and R-ports in a 50-ohm system. Some variation in the R-port VSWR will occur as a function of the L-port frequency as shown above.