

Avantek Products

Double Balanced Mixer 1.0 to 500 MHz

Technical Data

UMX-520

Features

- 50 dB LO to RF Isolation
- 6 dB Conversion Loss/Noise Figure
- Low VSWR (1.5:1) at All Ports

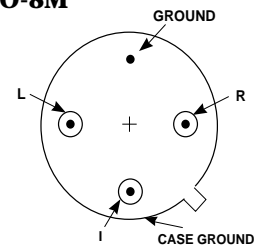
Applications

- Low Cost, High Performance
- High Density Requirements
- Communications Systems
- Instrumentation and Test Equipment

Description

The UMX Series double-balanced mixers feature exceptionally high isolation and good harmonically-related intermodulation product suppression. They are packaged in compact easy-to-use hermetically sealed TO-8 cans. The UMX-520 is a low level Class I mixer with four closely matched Schottky-barrier diodes in a ring configuration.

Pin Configuration TO-8M



Maximum Ratings

Parameter	Maximum
Peak Input Current @ 25°C	100 mA DC
Pin Temperature	260°C for 10 seconds
Operating Case Temperature	-55°C to +100°C
Storage Temperature	-65°C to +100°C
Continuous RF Input Power	200 mW @ +25°C 100 mW @ +100°C

Weight: (typical) 0.06 oz.

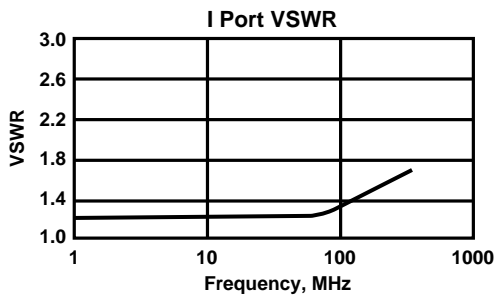
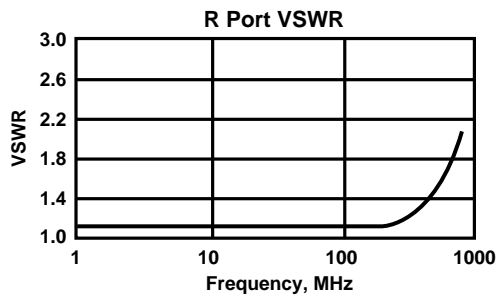
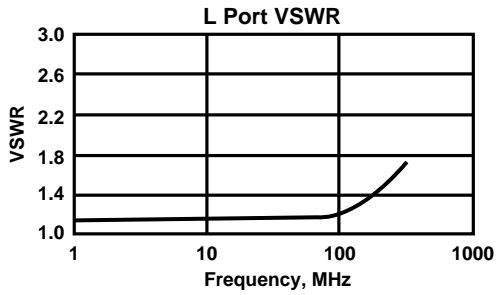
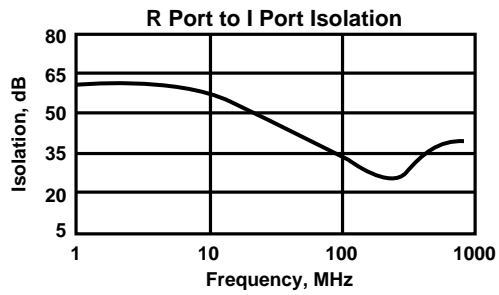
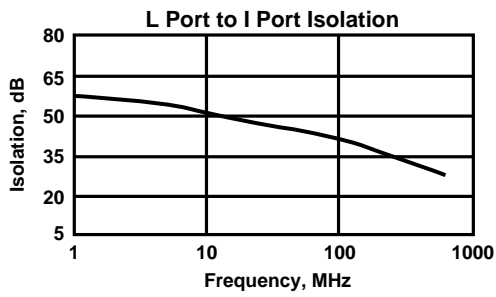
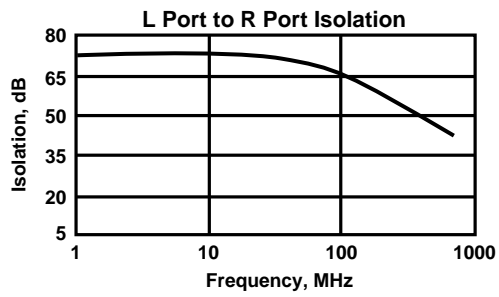
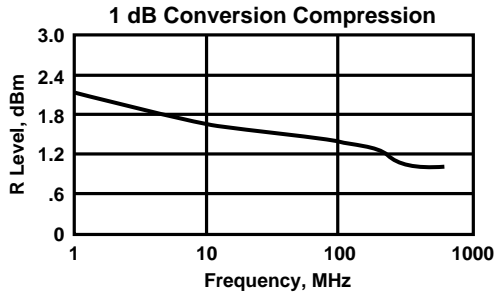
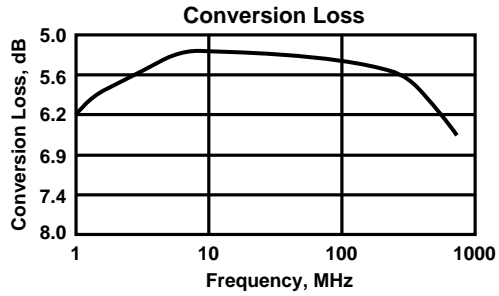
Electrical Specifications

(Measured in a 50 Ω system)

Symbol	Characteristic	Operating Frequencies MHz			Power Level			Specifications		Unit
		f_{LO}	f_{RF}	f_{IF}	LO Port dBm (typ)	Model Suffix	RF Port dBm	Typical $T_c = 25^\circ\text{C}$	Guaranteed $T_c = -55^\circ\text{ to }+100^\circ\text{C}$	
BW	Operating Frequency Range	1-500	1-500	DC-500						MHz
CL	SSB Conversion Loss	1-500	1-500	DC-500	+7			6.0	7.0	dB max
NF	SSB Noise Figure	1-500	1-500	0.1-500	+7			6.0	7.0	dB max
ISOL	Isolation Port-to-Port	L-R	1-100	—	—			65	40	dB
		L-R	100-500	—	—			50	40	min
		L-I	1-100	—	—			50	35	
		L-I	100-500	—	—			45	30	
		R-I	—	1-100	—			40		
		R-I	—	100-500	—			25		
—	VSWR (50 ohm)	L	1-500	—	—			1.5:1		typ
		R	—	1-500	—			1.4:1		
		I	—	—	1-500			1.5:1		
CC	Conversion Compression Point (1 dB)	1-500	1-500	DC-500	+7			1.0		dBm typ
IP ₃	Third-Order	1-100	1-100	DC-500	+7		—	+12	—	dBm
	Two-Tone Intercept Point	100-500	100-500	DC-500	+7		—	+10	—	typ

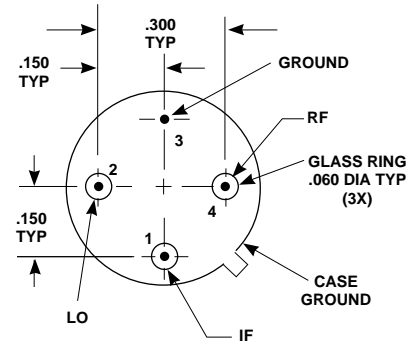
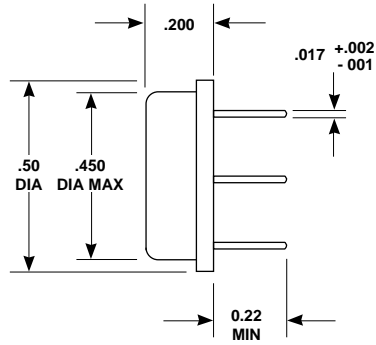
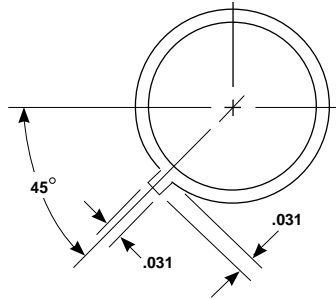
Typical Performance At 25°C Temperature

(Measured in a 50-ohm system with LO = +7 dBm)



H

Case Drawings TO-8M



APPROXIMATE WEIGHT 2.1 GRAMS

- NOTES (UNLESS OTHERWISE SPECIFIED):
1. DIMENSIONS ARE SPECIFIED IN INCHES
2. TOLERANCES: xx ± .02
xxx ± .010

For more information:

United States*

Europe*

Far East/Australasia: (65) 290-6305

Canada: (416) 206-4725

Japan: (81 3) 3331-6111

*Call your local HP sales office listed in your telephone directory. Ask for a Components representative.

Data Subject to Change
Copyright © 1995 Hewlett-Packard Co.

Printed in U.S.A. 5963-3244E (10/94)