



# WJZ1030

## Broadband Surface Mount Mixer

### Product Features

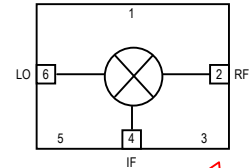
- +27.5 dBm Input IP3
- RF: 10 – 2500 MHz
- LO: 10 – 2500 MHz
- IF: 10 – 2500 MHz
- +17 dBm LO Drive Level
- No Internal Solder Connections
- Lead Free/RoHS-compliant SMT package
- No External Bias Required

### Product Description

The WJZ1030 is a passive double-balanced diode-ring mixer that provides high dynamic range performance in a Lead Free/ RoHS-compliant surface mount package. The mixer is nominally driven with a LO input power of +17 dBm to optimize its performance. Other WJZ models are available for other LO drive levels.

Targeted applications include frequency up/down conversion, modulation and demodulation for receivers and transmitters used in 2.5G and 3G GSM/CDMA/W-CDMA systems. The device can also be used in Radar, Satellite, Test / Medical Instruments, Avionics communications and Navigation markets.

### Functional Diagram



Top View

### Applications

- Up/down frequency conversion
- Phase Detector
- Image Rejection
- Current Controlled Attenuator

### Specifications

Parameter	Units	Min	Typ	Max	Notes
SSB Conversion Loss					
RF/LO = 10-1300 MHz, IF = 10-1000 MHz	dB		6.7	7.1	See note 1.
RF/LO = 10-2500 MHz, IF = 30-1000 MHz	dB		7.2	8.9	See note 1.
Port-to-Port Isolation					
L-R = 100-2200 MHz	dB	35	42		
L-I = 100-2400 MHz	dB	29	34		
R-I = 100-2200 MHz	dB		29.5		
3 <sup>rd</sup> Order Input Intercept Point	dBm		+27.5		
1dB Input Compression Point	dBm		+15		
VSWR					
RF Port = 600-1200 MHz			1.2:1		IF = 100 MHz
RF Port = 1200-1800 MHz			1.2:1		IF = 100 MHz
RF Port = 1800-2500 MHz			1.6:1		IF = 100 MHz
LO Port = 600-1200 MHz			1.4:1		
LO Port = 1200-1800 MHz			1.3:1		
LO Port = 1800-2500 MHz			1.7:1		
IF Port			1.2:1		
LO Drive Level	dBm		+17		

1. Measured in a 50 ohm system with a nominal LO drive of +17 dBm, low side LO, in a downconversion application with LO = 2300 MHz, RF = 2400 MHz, IF = 100 MHz.

### Absolute Maximum Rating

Parameter	Rating
Operating Case Temperature	-40 to +85 °C
Storage Temperature	-65 to +100 °C
RF Input Power	+20 dBm

Operation of this device above any of these parameters may cause permanent damage.

### Ordering Information

Part No.	Description
WJZ1030	Broadband Surface Mount Mixer
WJZ1030-PCB	Fully-Assembled Mixer Application Board

Standard T/R reel size = 500 pieces on a 13" reel.

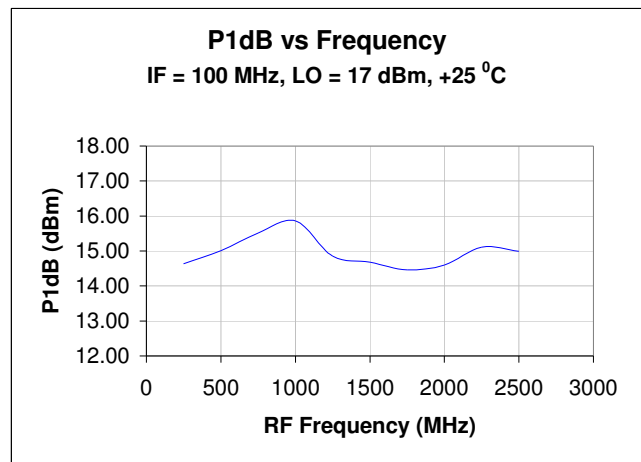
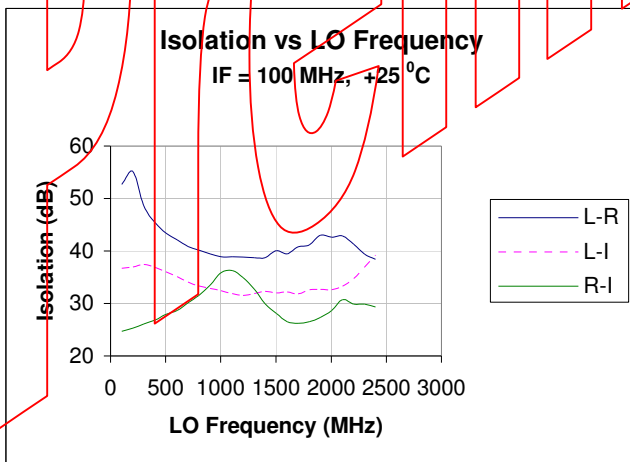
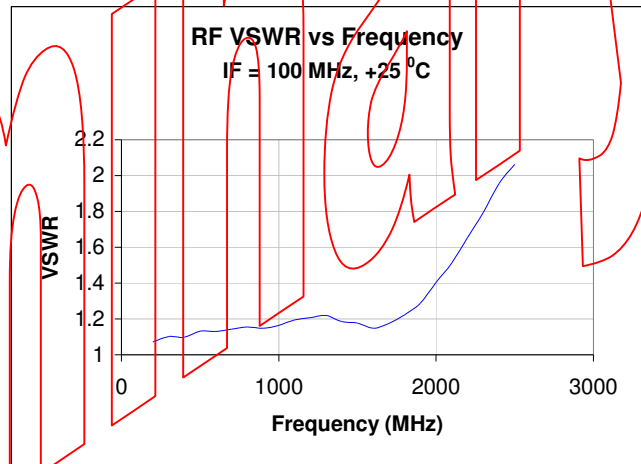
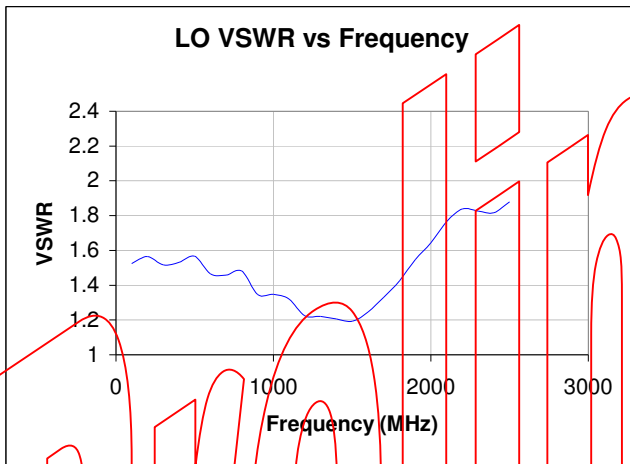
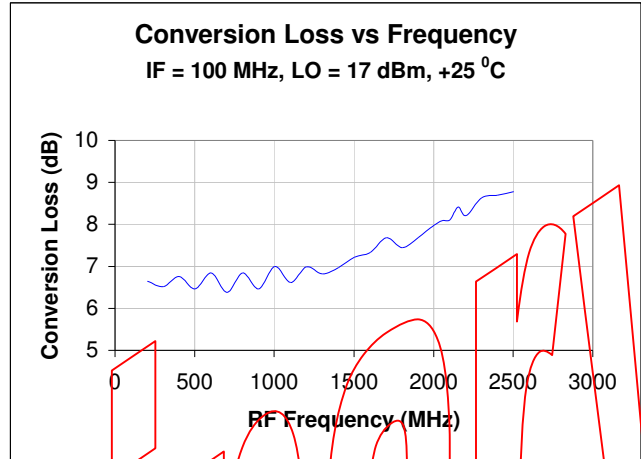
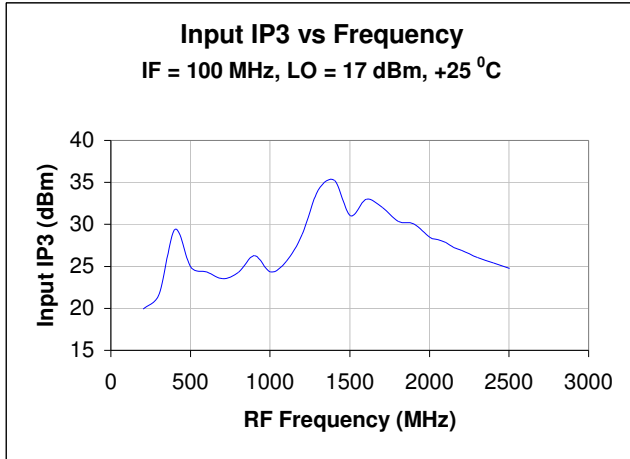
Specifications and information are subject to change without notice



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## Performance Charts



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# WJZ1030

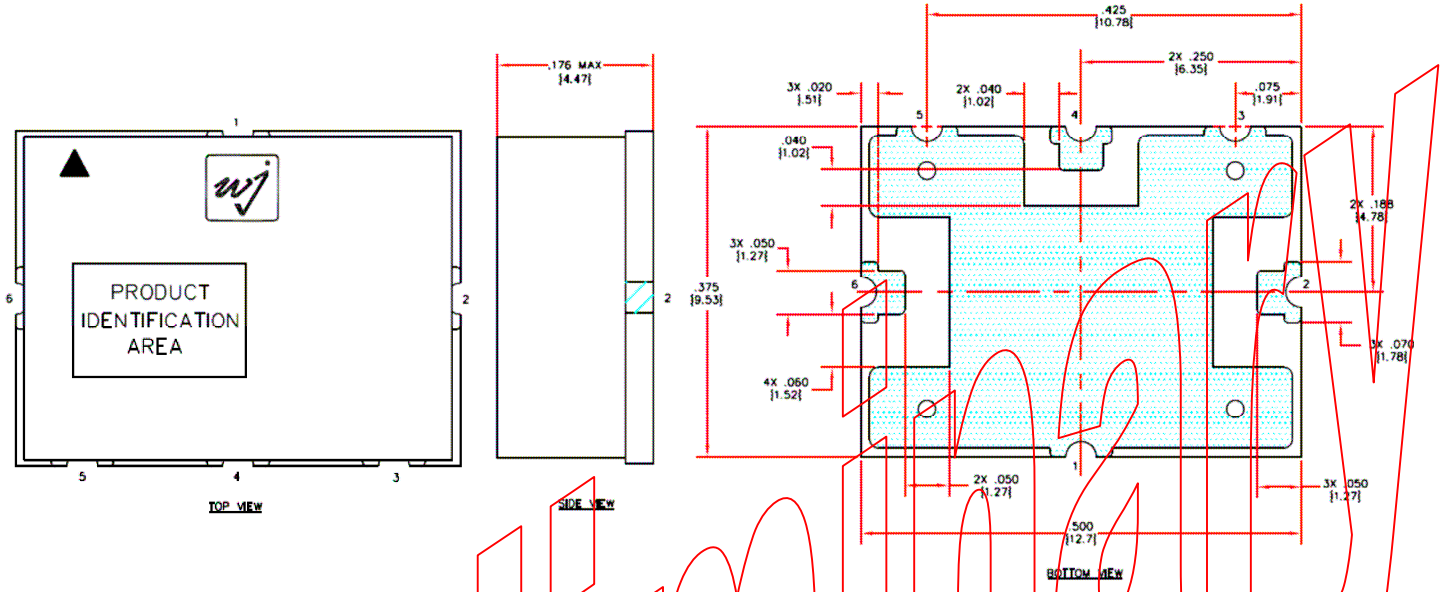
Broadband Surface Mount Mixer

## Mechanical Information

This package is lead-free/RoHS-compliant. The plating material is ENIG "Electroless Nickel Immersion Gold"

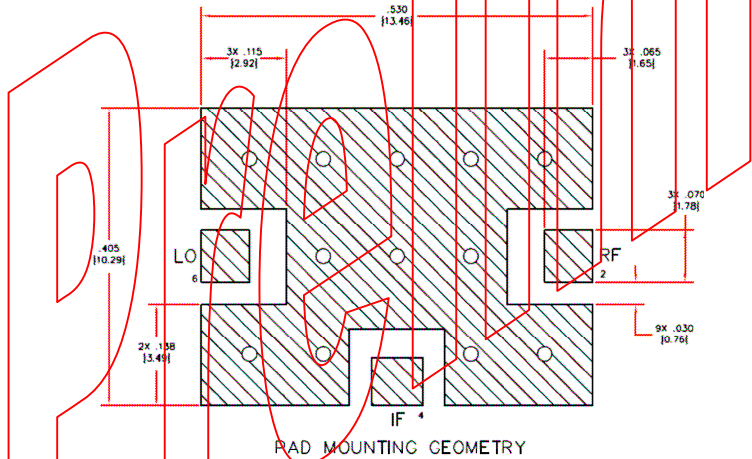
It is compatible with leaded and lead-free (maximum 260°C reflow temperatures)

Also recommend adding active flux of 2% during solder reflow.



## Outline Drawing

## Land Pattern / Mounting Configuration

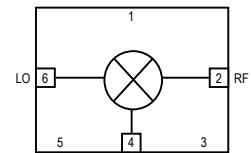


## Product Marking

The component will be marked with a "WJZ1030" designator followed by an alphanumeric lot code on the top surface of the package.

Tape and reel specifications for this part will be located on the website in the "Application Notes" section.

## Functional Pin Layout



Top view

Pin No.	Function
2	RF
4	IF
6	LO
1,3,5 Backside Metal	GND

Notes:

1. Package unit weight is 2.0 grams max.
2. Dimensions are expressed in inches. Dimensions in brackets are millimeter equivalents.
3. Tolerance .XXX +/- .015, .XX +/- .02
4. Package circuit board material: .021" FR-4, 2 layers, .025" total thickness.
5. Land pattern ground vias are critical for RF grounding considerations. A minimum of 12 ground vias (min. diameter of 20 mil or 51µm) underneath the device is required.
6. PC board trace width depends on the board material and thickness.
7. Blocking capacitors are required on the ports (pins 2, 4, 6) if any dc signal is present.

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