

Double Balanced Mixers (Relay Headers)

MC-600R Series



MC-602R



MC-601R

These mixers mix the RF signal and LO signal to produce the IF signal (i.e., $f_{IF} = f_{RF} - f_{LO}$)

■Features

1.Suited for High-Density Mounting

Ultraminiature design with a 2.54 mm pitch enables high-density mounting.

2.LO Level of +7 dBm

Mixers operate at a LO level of +7 dBm.

3.Highly Reliable Design

The metal case is designed with a hermetically sealed construction which contains inert gas. This permits quality to be maintained over a long period.

4.Easy Soldering

The leads have received solder dip processing which makes soldering work easier.

5.Prevention of Flux Creepage

Use of the supplied Teflon sheet permits the prevention of solder flux creepage.

■Product Specifications

Ratings	Frequency range (Note) Characteristic impedance Maximum Input Power (Total input power)	30 to 1800 MHz 50 ohms 30 mW	Operating temperature range Operating relative humidity	-10°C to +65°C 95% Max.
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Note: The frequency range will differ depending on the products.

Item	Standard	Conditions
1.Vibration	No damage, cracks, or parts dislocation	Frequency of 10 to 2000 Hz, overall amplitude of 1.5 mm, acceleration of 98 m/s ² for 4 hours in each of 3 directions
2.Shock		Acceleration of 294 m/s ² , sine half-wave waveform, 3 cycles in each of the 3 axis
3.Temperature cycle		Temperature: -35°C → +5°C to +35°C → +80°C → +5°C to +35°C Time: 30 → 15 max. → 30 → 15 max. (Minutes) 5 cycles

●The test method conforms to MIL-STD-202.

■Materials

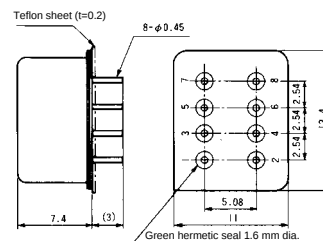
Part	Material	Finish
External Cladding	Iron	Nickel plating
Contacts	Iron-nickel alloy	Solder dip
Hermetic seal	Glass	—

■Ordering Information

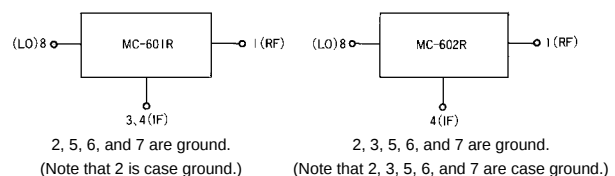
MC - 6 0 1 R
① ② ③ ④ ⑤

① Series Name: MC	④ Suffix
② 6: Indicates double balanced mixer.	⑤ Form of Case
③ LO level 0: +7dBm	R: Relay header

■External Dimensions



■Function Diagram



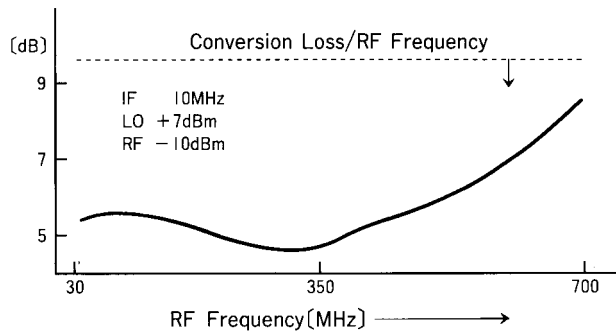
■Specifications

Part Number	Frequency Range (MHz)		LO Power (dBm)	Conversion Loss (dB Max)	Isolation (dB Min)		RF Input for 1dB Compression Level (dBm typ.)	Weight (g)
	RF/LO	IF			LO-RF	LO-IF		
MC-601R	30~700	DC~700	+7	9.5	20	15	+3	3
MC-602R	600~1,800	30~200	+7	9.5	20(600~1,000) 15(1,000~1,800)	15(600~1,000) 10(1,000~1,800)	+5	3

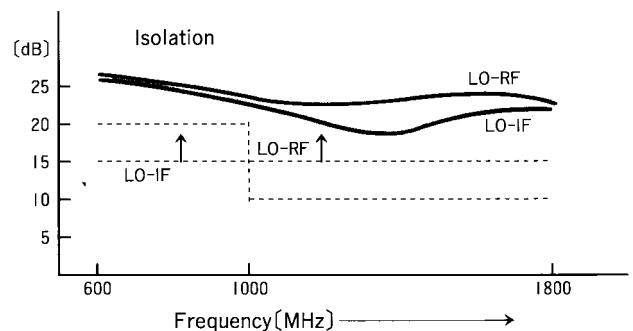
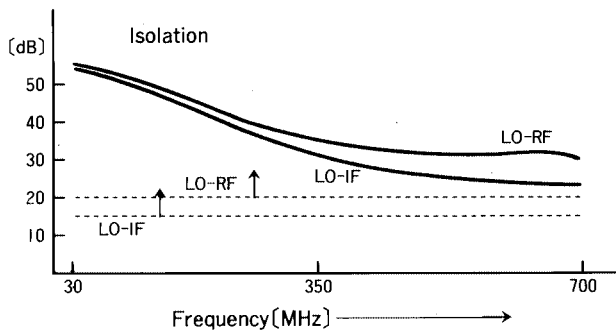
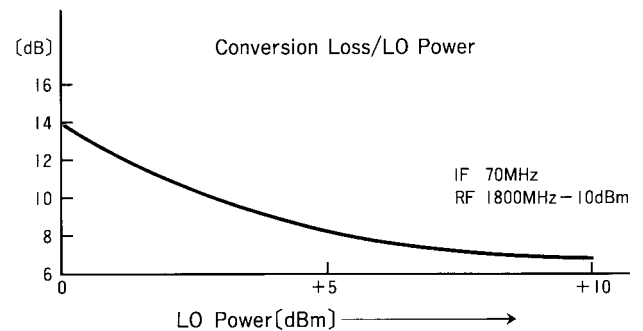
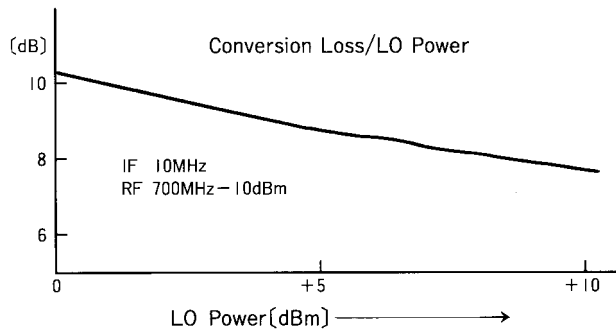
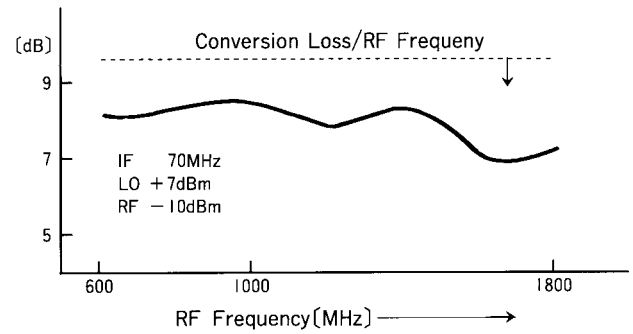
NOTE: The frequency range will differ depending on the product.

■Typical Data

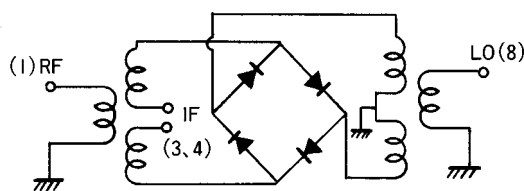
MC-601R



MC-602R

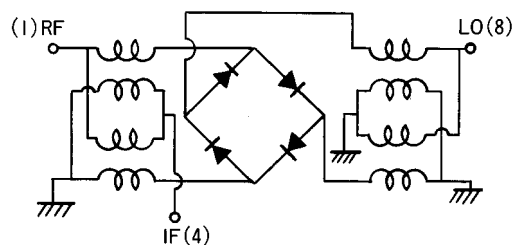


Circuit Diagrams



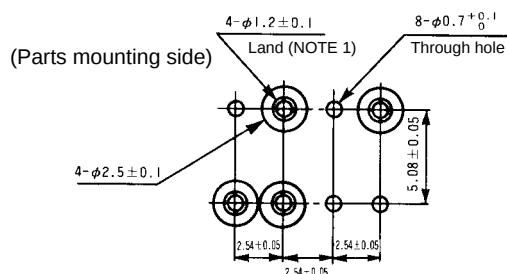
MC-601R

Numbers in parentheses () indicate port numbers.

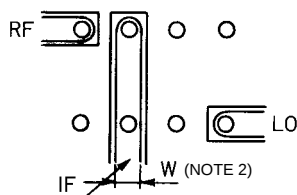


MC-602R

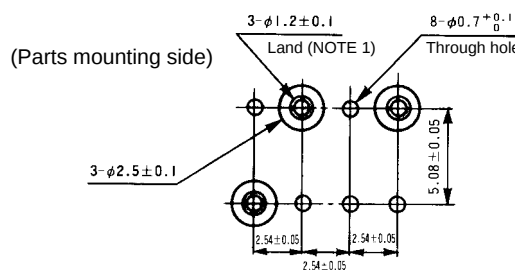
PCB Mounting Pattern



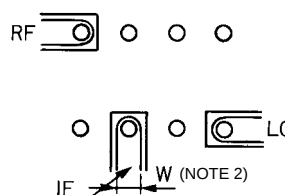
(Soldering side)



MC-601R



(Soldering side)



MC-602R

Note 1: One example is given for the form dimensions of the land.

Note 2: When glass epoxy board ($\epsilon_r \approx 4.7$) of 0.8 mm thickness is used, the width (W) of the 50Ω impedance micro stripline becomes $W \approx 1.4$ mm.

Precautions

● This product uses diodes and therefore care must be taken against static electricity when handling. When using a soldering iron, please solder with a grounded soldering iron. The soldering conditions are as described below.

Soldering temperature: 260°C or less

Soldering time: 10 seconds or less

● Please use the supplied Teflon sheet to prevent solder flux creepage and so that the leads do not become shorted due to solder flowing to the board mounting surface.