

Double-Balanced Mixer

Rev. V3

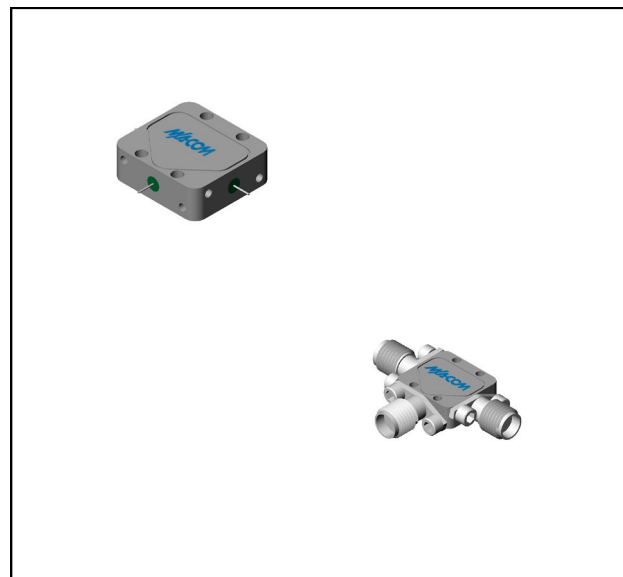
Features

- LO 5 to 18 GHz
- RF 6 to 18 GHz
- IF DC to 3 GHz
- LO Drive +20 dBm (nominal)
- Wide Bandwidth
- High Intercept Point +21 dBm (typ)
- Available with Field Replaceable Connectors

Description

The MZ7420 is a double balanced mixer, designed for use in military, commercial and test equipment applications. The design utilizes Schottky ring quad diodes and broadband soft dielectric and ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. The use of high temperature solder and welded assembly processes used internally makes it ideal for use in manual, semi-automated assembly. Environmental screening available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Product Image



Ordering Information

| Part Number | Package |
|-------------|-------------------|
| MZ7420 | Versapac |
| MZ7420C | SMA Connectorized |

Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +20$ dBm (Downconverter application only)

| Parameter | Test Conditions | Units | Typical | Guaranteed | |
|---------------------------|--|-------|---------|------------|---------------|
| | | | | +25°C | -54° to +85°C |
| SSB Conversion Loss (max) | fR = 7 to 15 GHz, fL = 6 to 15 GHz, fl = 0.03 to 1 GHz fR = 6 to 16 GHz, fL = 5 to 18 GHz, fl = 0.03 to 2 GHz fR = 6 to 16 GHz, fL = 5 to 18 GHz, fl = 0.03 to 3 GHz fR = 16 to 18 GHz, fL = 13 to 18 GHz, fl = 0.03 to 3 GHz | dB | 6.5 | 8.0 | 8.3 |
| | | | 7.0 | 8.5 | 8.8 |
| | | | 7.5 | 9.5 | 9.8 |
| | | | 8.5 | 10.0 | 10.3 |
| SSB Noise Figure (max) | Within 1 dB of conversion loss | dB | — | — | — |
| Isolation, L to R (min) | fL = 5 to 15 GHz fL = 14 to 18 GHz | dB | 35 | 23 | 22 |
| | | | 30 | 18 | 17 |
| Isolation, L to I (min) | fL = 5 to 9 GHz fL = 9 to 18 GHz | dB | 27 | 17 | 16 |
| | | | 35 | 23 | 22 |
| 1 dB Conversion Comp. | fL = +20 dBm | dBm | +15 | | |
| Input IP3 | fR1 = 13 GHz at -6 dBm, fR2 = 13.01 GHz at -6 dBm, fL = 14 GHz at +20 dBm | dBm | +21 | | |

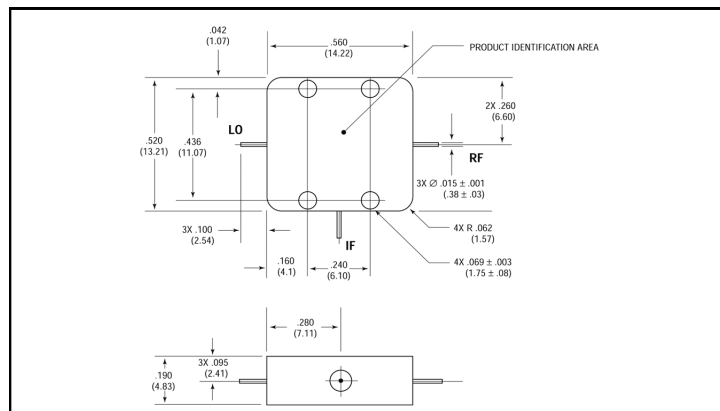
Double-Balanced Mixer

Rev. V3

Absolute Maximum Ratings

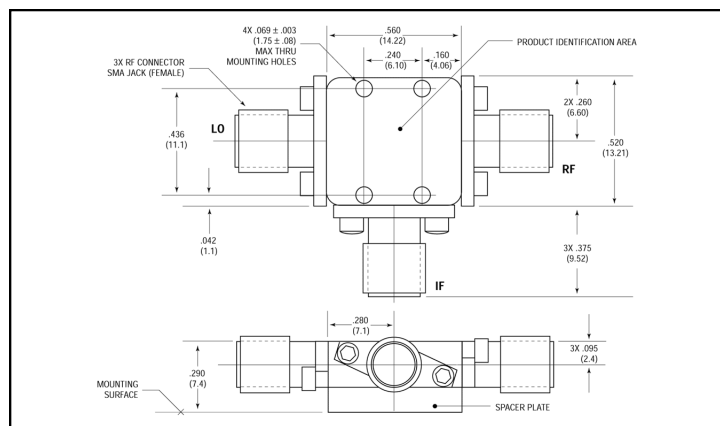
| Parameter | Absolute Maximum |
|-----------------------|---|
| Operating Temperature | -54° C to +100°C |
| Storage Temperature | -65°C to +100°C |
| Peak Input Power | +25 dBm max @ +25°C +21 dBm max @ +100°C |
| Peak Input Current | mA DC |

Outline Drawing: Versapac *



Weight: 4 grams (0.14 oz.) max

Outline Drawing: SMA Connectorized *



Weight: 13 grams (0.46 oz.) max

* Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.