Datasheet

Linx
TECHNOLOGIES

CONN013-W
N Bulkhead Jack PCB Surface Mount Connector

The CONN013-W is an N bulkhead jack right angle PCB through hole connector designed for reflow-solder mounting directly to a printed circuit board. Operating from 0 GHz to 11 GHz, the CONN013-W provides superior performance by utilizing white bronze plating to reduce distortion caused by passive intermodulation (PIM). Additionally, all Linx connectors meet RoHS lead free standards and are tested to meet requirements for corrosion resistance, vibration, mechanical and thermal shock.

Features

- 0 to 11 GHz operation
- White Bronze plating
  - Low Passive Intermodulation (PIM)
  - Superior corrosion resistance
- N jack (female socket) connection
  - Gold plated beryllium copper center contact
- Brass hex nut and washer provided
- Direct PCB attachment
- Reflow- or hand-solder assembly

Electrical Specifications

Impedance	50 Ω	
Frequency Range	0 to 11 GHz	
Voltage Rating	2500 V RMS	
Contact Resistance	Center: ≤ 1.0 mΩ Outer: ≤ 1.0 mΩ	
Selected Frequencies	**2.4 GHz**	**6 GHz**
Insertion Loss (dB max)	-0.11	-0.19
VSWR (max)	1.1	1.4

Ordering Information

Part Number	Description
CONN013-W	N bulkhead jack (female socket) right angle PCB through hole connector

Available from Linx Technologies and select distributors and representatives.
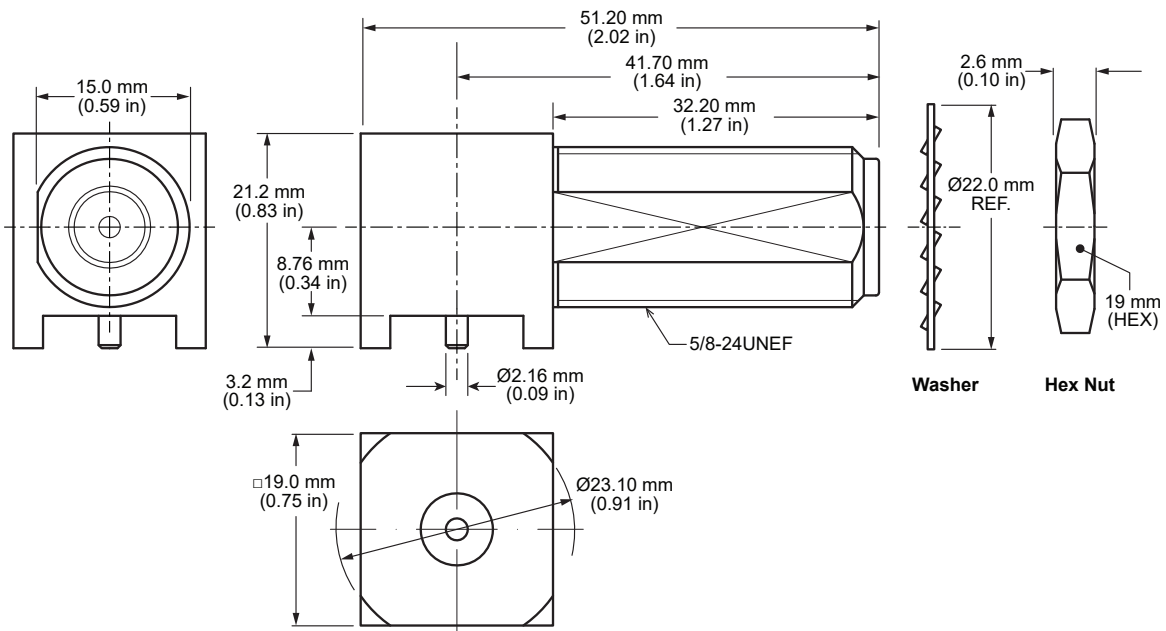
Product Dimensions

Figure 1. Product Dimensions for the CONN013-W Connector

Connector Components

Model	CONN013-W	
Connector Part	Material	Finish
Connector Body	Brass	White Bronze
Center Contact (socket)	Beryllium Copper	Gold
Insulator	PTFE	–
Washer	Brass	White Bronze
Hex Nut	Brass	White Bronze

Recommended Footprint

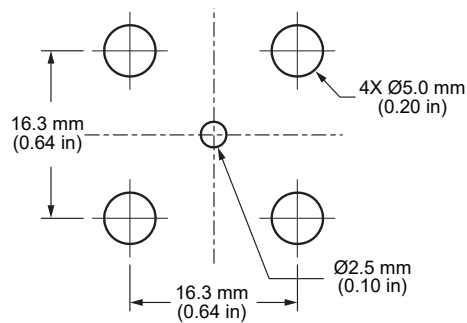Figure 2 shows the connectors recommended PCB footprint and through hole sizes.

Figure 2. Recommended PCB Footprint for the CONN013-W Connector

Recommended Mounting

The recommended enclosure mounting dimensions are shown in Figure 3.
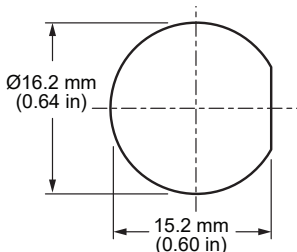
Ø16.2 mm
(0.64 in)

15.2 mm
(0.60 in)

Figure 3. Recommended Enclosure Mounting Dimensions

Connector Performance

Table 1 shows insertion loss and VSWR values for the CONN013-W connector at commonly used frequencies.

Insertion loss is the loss of signal power (gain) resulting from the insertion of a device in a transmission line. VSWR describes how efficiently power is transmitted through the connector. A lower VSWR value indicates better performance at a given frequency.

Table 1.   Insertion Loss and VSWR for the CONN013-W Connector

Band	Low-Band Cellular/ ISM/LPWA	Midband Cellular/ GNSS	WiFi/ISM	WiFi 6
Frequency Range	400 MHz to 960 MHz	1.1 GHz to 5 GHz	2.4 GHz	5 GHz to 7.125 GHz
Insertion Loss (dB max)	-0.07	-0.29	-0.11	-0.34
VSWR (max)	1.1	1.7	1.1	1.8

Mechanical Specifications

Model	CONN013-W
Mounting Type	PCB Through Hole
Fastening Type	5/8"-24UNEF Threaded Coupling
Interface in Accordance with	MIL-STD-348A
Recommended Torque	0.85 N m (7.5 ft lbs)
Coupling Nut Retention	100 lbs. min.
Connector Durability	500 cycles min.
Weight	87.6 g (3.09 oz)

Environmental Specifications

MIL-STD/Method/Test Condition	
Corrosion (Salt spray)	MIL-STD-202 Method 101 test condition B
Thermal Shock	MIL-STD-202 Method 107 test condition B
Vibration	MIL-STD-202 Method 204 test condition B
Mechanical Shock	MIL-STD-202 Method 213 test condition I
Temperature Range	-65 °C to +165 ° C
Environmental Compliance	RoHS

Reflow Solder Profile

Figure 4 shows the time and temperature data for reflow soldering the connector to a PCB.
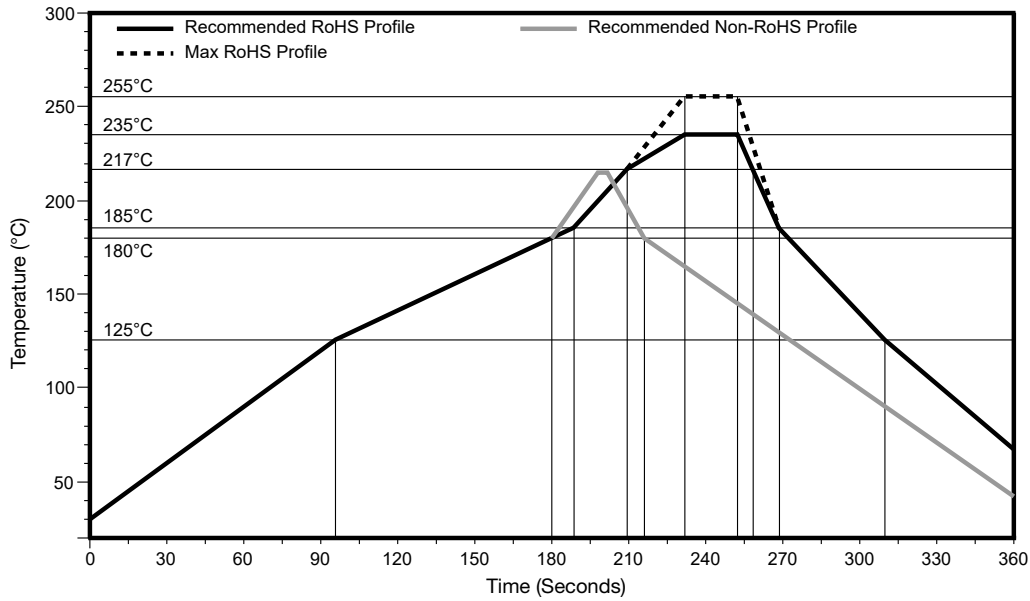

Figure 4. Recommended Reflow Solder Profile

Packaging Information

The CONN013-W connectors are individually packaged in clear plastic bags. Connectors are packaged in cartons of 80 pcs. Distribution channels may offer alternative packaging options.

Connector & Adapter Definitions and Useful Formulas

VSWR - Voltage Standing Wave Ratio. VSWR is a unitless ratio that describes how efficiently power is transmitted through the connector. A lower VSWR value indicates better performance at a given frequency. VSWR is easily derived from Return Loss.

$$\text{VSWR} = \frac{10^{\left[\frac{\text{Return Loss}}{20}\right]} + 1}{10^{\left[\frac{\text{Return Loss}}{20}\right]} - 1}$$

Insertion Loss - The loss of signal power (gain) resulting from the insertion of a device in a transmission line. Insertion loss can be derived from the power transmitted to the load before the insertion of the component P_T and the power transmitted to the load after the insertion of the component P_R.

$$Insertion\ Loss\ (\text{dB}) = 10\log_{10}\frac{P_T}{P_R}$$

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