

## CONSMB002-G

### SMB Jack PCB Through Hole Connector

The CONSMB002-G is a right angle SMB jack PCB through hole connector designed for reflow- solder mounting directly to a printed circuit board. Operating from 0 GHz to 4 GHz, the CONSMB002-G combines superior performance, compact size, and a convenient snap-on mating interface to provide a reliable, easy-to-use connector. 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 4 GHz operation
- Gold plating
  - Superior corrosion resistance
- SMB jack (male pin) connection
  - Gold plated brass center contact
- Direct PCB attachment
- Reflow- or hand-solder assembly

#### APPLICATIONS

- LPWA
  - LoRaWAN®, Sigfox®, WiFi HaLow™ (802.11ah)
- Cellular IoT
  - LTE-M (Cat-M1), NB-IoT
- Cellular
  - 5G/4G LTE/3G/2G
- GNSS
  - GPS, Galileo, BeiDou, QZSS
- Industrial/Commercial/Enterprise
- ISM

#### TABLE 1. ELECTRICAL SPECIFICATIONS

Parameter	Value	
Impedance	50 Ω	
Frequency Range	0 to 4 GHz	
Voltage Rating	750 V RMS	
Contact Resistance	Center: ≤ 6.0 mΩ Outer: ≤ 1.0 mΩ	
Select Frequencies	400 MHz to 960 MHz	2.4 GHz
Insertion Loss (dB max)	-0.21	-0.20
VSWR (max)	1.5	1.1

## ORDERING INFORMATION

Part Number	Description
CON SMB002-G	SMB jack (male pin) PCB through hole connector

Available from Linx Technologies and select distributors and representatives.

## PRODUCT DIMENSIONS

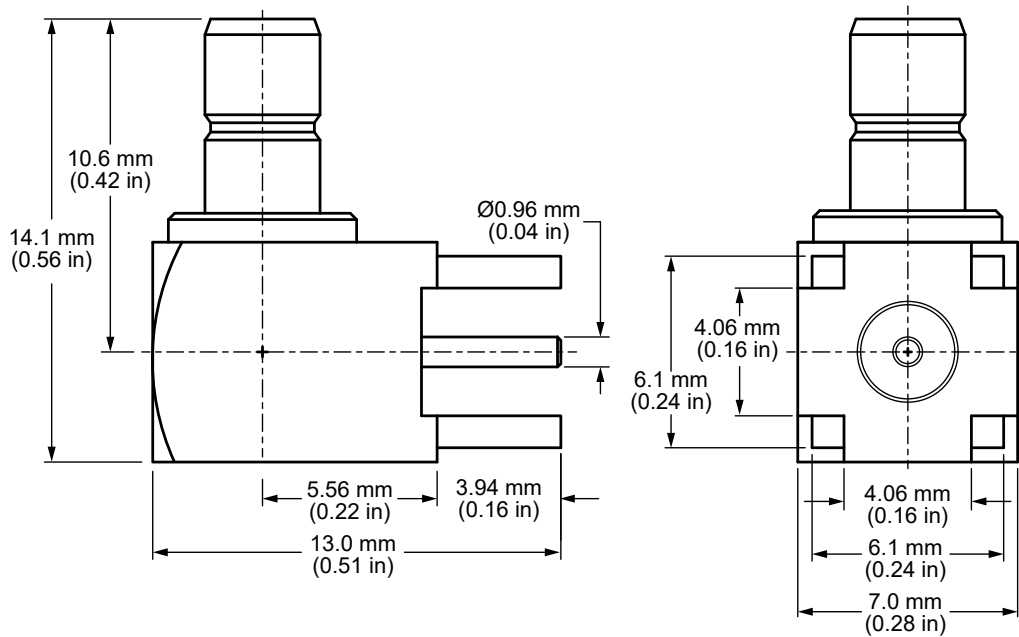


Figure 1. Product Dimensions for the CON SMB002-G Connector Table

## 2. CONNECTOR COMPONENTS

Model	CON SMB002-G		
Connector Part	Material		Finish
Connector Body	Brass		Gold
Center Contact (male pin)	Brass		Gold
Insulator	PTFE		-

## RECOMMENDED PCB FOOTPRINT

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

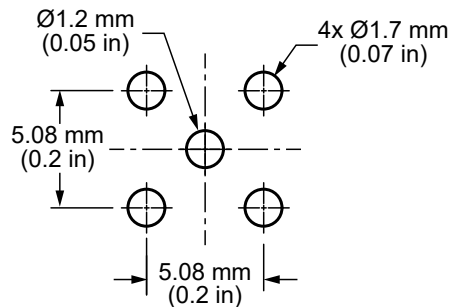


Figure 2. Recommended PCB Dimensions for the CON SMB002-G

## CONNECTOR PERFORMANCE

Table 3 shows insertion loss and VSWR values for the CONSMB002-G 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 3. INSERTION LOSS AND VSWR FOR THE CONSMB002-G CONNECTOR**

Band	Low-Band Cellular/ ISM/LPWA	GNSS	Midband Cellular	WiFi/ISM
Frequency Range	400 MHz to 960 MHz	1164 MHz to 1609 MHz	1427 MHz to 5000 MHz	2.4 GHz
Insertion Loss (dB max)	-0.21	-0.29	-1.55	-0.24
VSWR (max)	1.5	1.6	3.0	1.1

**TABLE 4. MECHANICAL SPECIFICATIONS**

Model	CONSMB002-G
Mounting Type	PCB Through Hole
Fastening Type	Snap-on Coupling
Interface in Accordance with	MIL-STD-348A
Connector Durability	500 cycles min.
Weight	3.6 g (0.13 oz)

**TABLE 5. 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 3 shows the time and temperature data for reflow soldering the connector to a PCB.

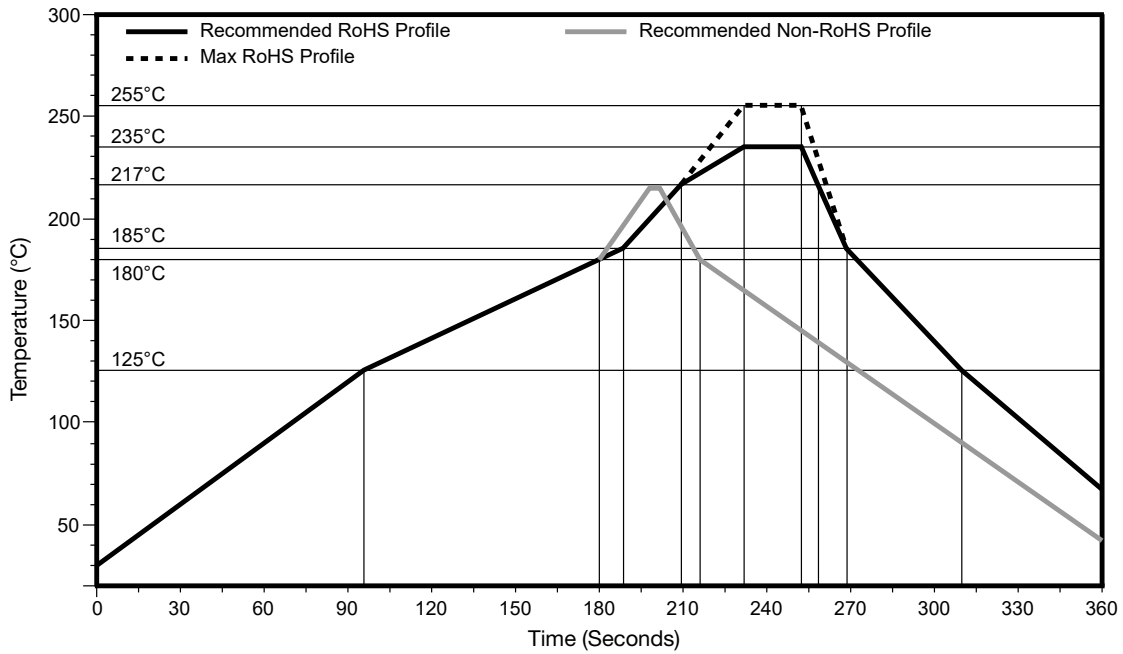


Figure 3. Recommended Reflow Solder Profile

## PACKAGING INFORMATION

The CONSMB002-G connector is placed in sealed trays of 100 pcs. Trays are packaged in cartons of 1700 pcs. Distribution channels may offer alternative packaging options.

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## 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.

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

**Insertion Loss** - 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  $P_R$ .

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

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