Datasheet

CONSMP001-1
SMP Plug PCB Through-Hole Connector

The CONSMP001-1 is an SMP plug PCB through-hole connector designed for reflow-solder mounting directly to a printed circuit board. Operating from 0 GHz to 20 GHz, the CONSMP001-1 combines superior performance, compact size, and a convenient snap-on mating interface to provide a reliable, easy-to-use connector. Linx SMP connectors are ideal for making board-to-board connections. 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 20 GHz operation
- SMP plug (male pin) connection
  - Gold plated beryllium copper center contact
- Ideal for board-to-board connections
- Direct PCB attachment
- Reflow- or hand-solder assembly

Applications

- Cellular IoT
  - LTE-M (Cat-M1), NB-IoT
- Cellular
  - 5G/4G LTE/3G/2G
- WiFi/WLAN
  - WiFi 6/6E
- GNSS
  - GPS, Galileo, GLONASS, BeiDou, QZSS
- Radar, Satellite Communications, Experimental
- Industrial, Commercial, Enterprise

Table 1. Electrical Specifications

Impedance	50 Ω	
Frequency Range	0 to 20 GHz	
Voltage Rating	335 V RMS	
Contact Resistance	Center: ≤ 6.0 mΩ Outer: ≤ 3.0 mΩ	
Select Frequencies	**400 MHz to 960 MHz**	**12 GHz to 18 GHz**
Insertion Loss (dB max.)	0.12	1.53
VSWR (max.)	1.0	1.3

Ordering Information

Part Number	Description
CONSMP001-1	SMP plug (male pin) PCB through-hole connector

Available from Linx Technologies and select distributors and representatives.

Product Dimensions

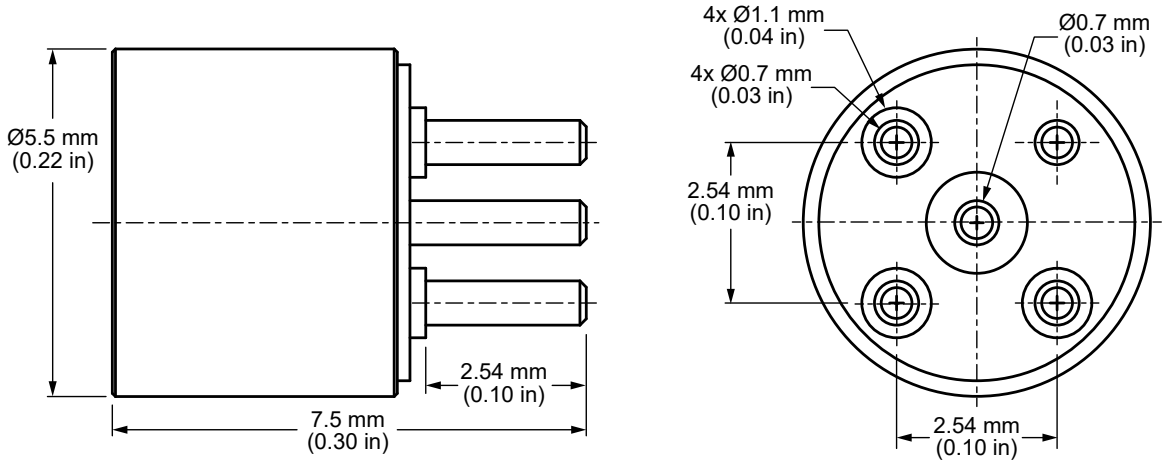

Figure 1. Product Dimensions for the CONSMP001-1 Connector

Table 2. Connector Components

Connector Part	Material	Finish
Connector Body	Stainless Steel	Passivated
Base	Brass	Gold
Center Contact (male pin)	Beryllium Copper	Gold
Insulator	PTFE	–

Recommended PCB Footprint

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

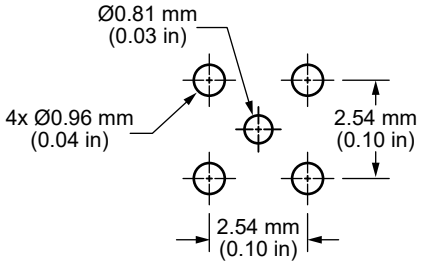

Figure 2. Recommended PCB Dimensions for the CONSMP001-1

Connector Performance

Table 3 shows insertion loss and VSWR values for the CONSMP001-1 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 CONSMP001-1 Connector

Band	Low-Band Cellular/ ISM/LPWA	GNSS, Midband Cellular, Wifi	WiFi 6E	Ku
Frequency Range	400 MHz to 960 MHz	1.1 GHz to 5 GHz	5 GHz to 7.125 GHz	12 GHz to 18 GHz
Insertion Loss (dB max.)	0.12	0.43	0.74	1.53
VSWR (max.)	1.0	1.2	1.4	1.3

Table 4. Mechanical Specifications

Model	CONSMP001-1
Mounting Type	PCB Through-Hole
Fastening Type	Snap-on Coupling
Interface in Accordance with	MIL-STD-348B
Connector Durability	100 cycles min.
Weight	0.6 g (0.02 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 C
Vibration	MIL-STD-202 Method 204 test condition B
Mechanical Shock	MIL-STD-202 Method 213 test condition B
Moisture Resistance	MIL-STD-202 Method 106 test condition D
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.

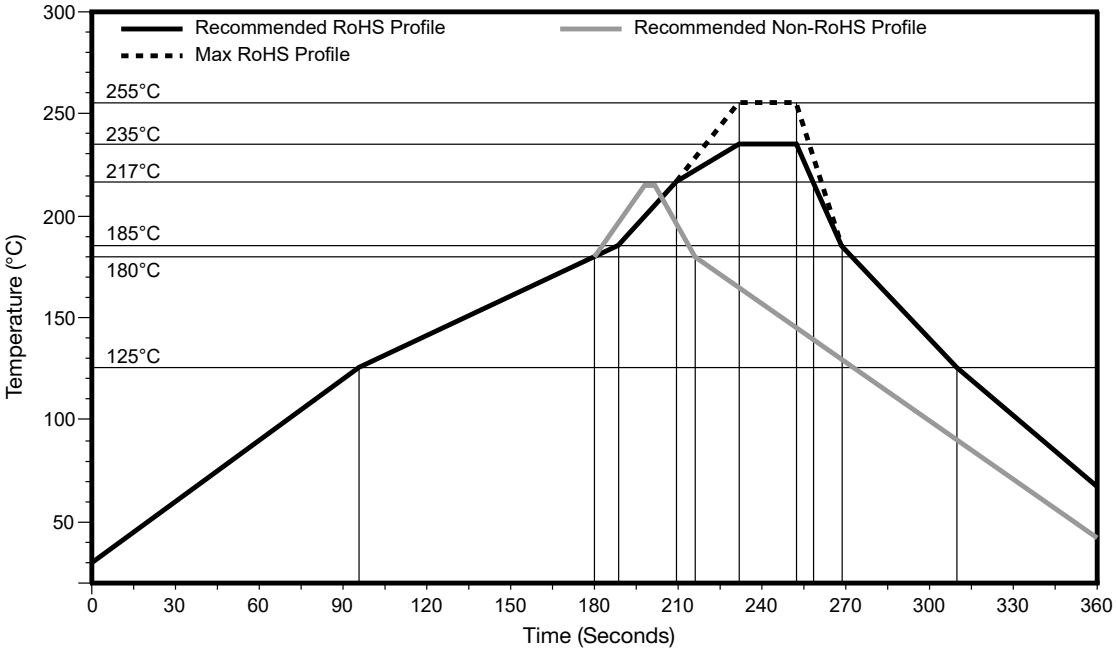

Figure 3. Recommended Reflow Solder Profile

Packaging Information

The CONSMP001-1 connector is packaged in plastic trays of 100 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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