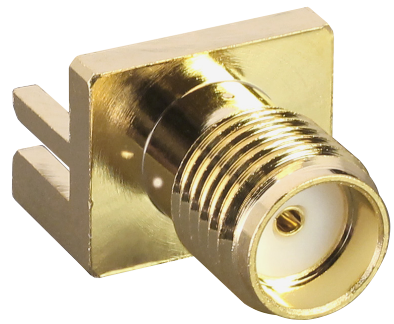
Datasheet

CONSMA020.042-G
SMA Jack PCB Edge-Mount Connector

The CONSMA020.042-G is an SMA jack (female socket) PCB edge-mount connector designed for reflow-solder mounting directly to a printed circuit board. Operating from 0 GHz to 18 GHz, the CONSMA020.042-G combines superior performance, compact size, and a convenient threaded 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 18 GHz operation
- Gold plating
  – Superior corrosion resistance
- SMA jack (female socket) connection
  – Gold plated beryllium copper 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, GLONASS, BeiDou, QZSS
- Industrial/Commercial/Enterprise
- ISM

Table 1. Electrical Specifications

Impedance	50 Ω	
Frequency Range	0 to 18 GHz	
Voltage Rating	500 V RMS	
Contact Resistance	Center: ≤ 2.0 mΩ Outer: ≤ 2.0 mΩ	
Select Frequencies	**400 MHz to 960 MHz**	**2.4 GHz**
Insertion Loss (dB max)	0.04	0.06
VSWR (max)	1.0	1.0

Ordering Information

Part Number	Description
CONSMA020.042-G	SMA jack (female socket) PCB edge-mount connector

Available from Linx Technologies and select distributors and representatives.

Product Dimensions

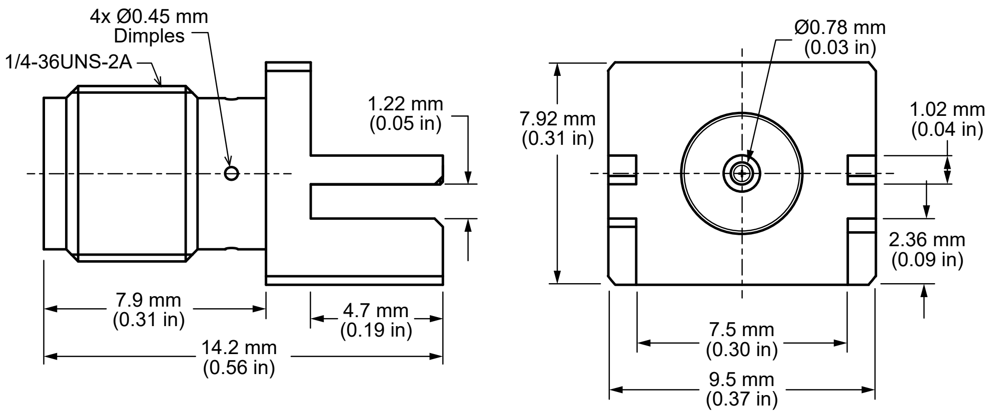


Figure 1. Product Dimensions for the CONSMA020.042-G Connector

Table 2. Connector Components

Model	CONSMA020.042-G	
Connector Part	**Material**	**Finish**
Connector Body	Brass	Gold
Center Contact (female socket)	Beryllium Copper	Gold
Insulator	PTFE	–

Recommended PCB Footprint

Figure 2 shows the connectors recommended PCB footprint.

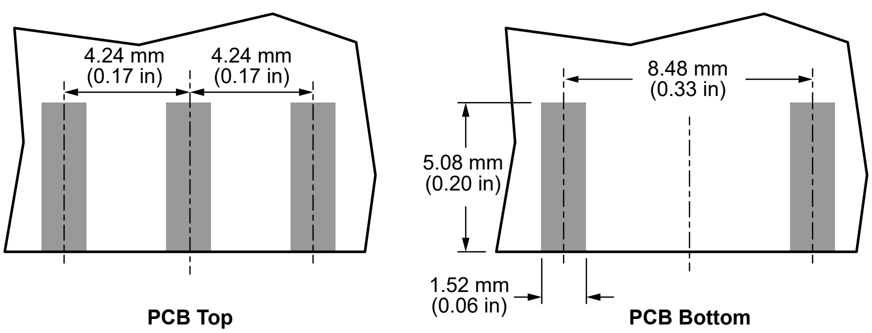


Figure 2. Recommended PCB Dimensions for the CONSMA020.042-G

Connector Performance

Table 3 shows insertion loss and VSWR values for the CONSMA020.042-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 CONSMA020.042-G Connector

Band	Low-Band Cellular/ ISM/LPWA	GNSS	Midband Cellular	WiFi/ISM
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)	0.04	0.16	0.13	0.23
VSWR (max)	1.0	1.1	1.0	1.1

Table 4. Mechanical Specifications

Model	CONSMA020.042-G
Mounting Type	PCB Surface-Mount
Fastening Type	1/4”-36UNS Threaded Coupling
Recommended Torque	0.57 N·m (5.0 in·lbs)
Interface in Accordance with	MIL-STD-348A
Connector Durability	500 cycles min.
Weight	2.0 g (0.07 oz)

Table 5. Environmental Specifications

STD, 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 D
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.

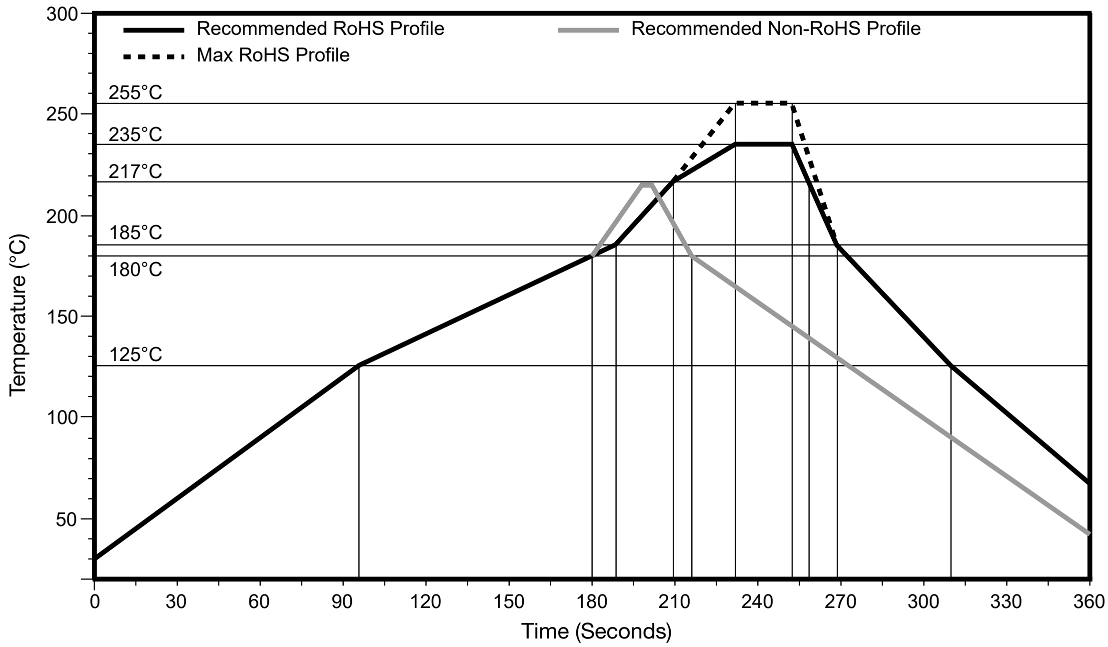


Figure 3. CONSMA020.042-G Recommended Reflow Solder Profile

Packaging Information

The CONSMA020.042-G connector is placed in sealed 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.

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

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.

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

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