



CON SMA020.042-G

SMA Jack PCB Edge-Mount Connector

The CON SMA020.042-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 CON SMA020.042-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

Parameter	Value	
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

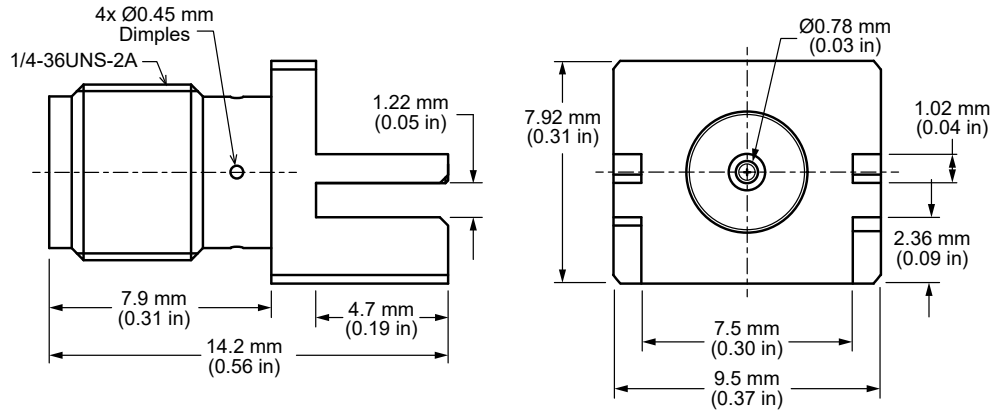


Figure 1. Product Dimensions for the CONSMA020.042-G Connector Table

2. CONNECTOR COMPONENTS

Model	CONSMA003.042-L-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.

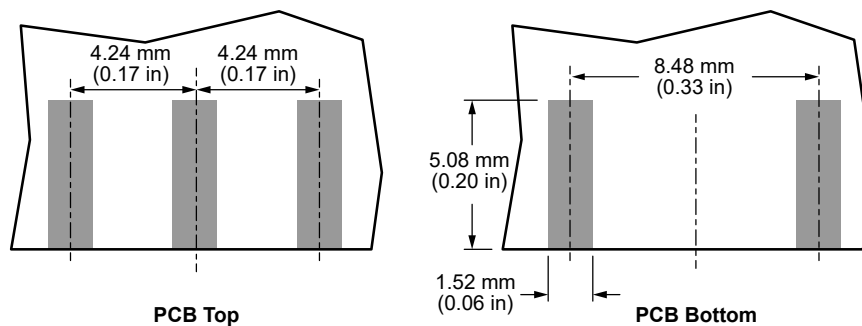


Figure 2. Recommended PCB Dimensions for the CONSMA020.042-G

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	CONSMA003.042-L-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.

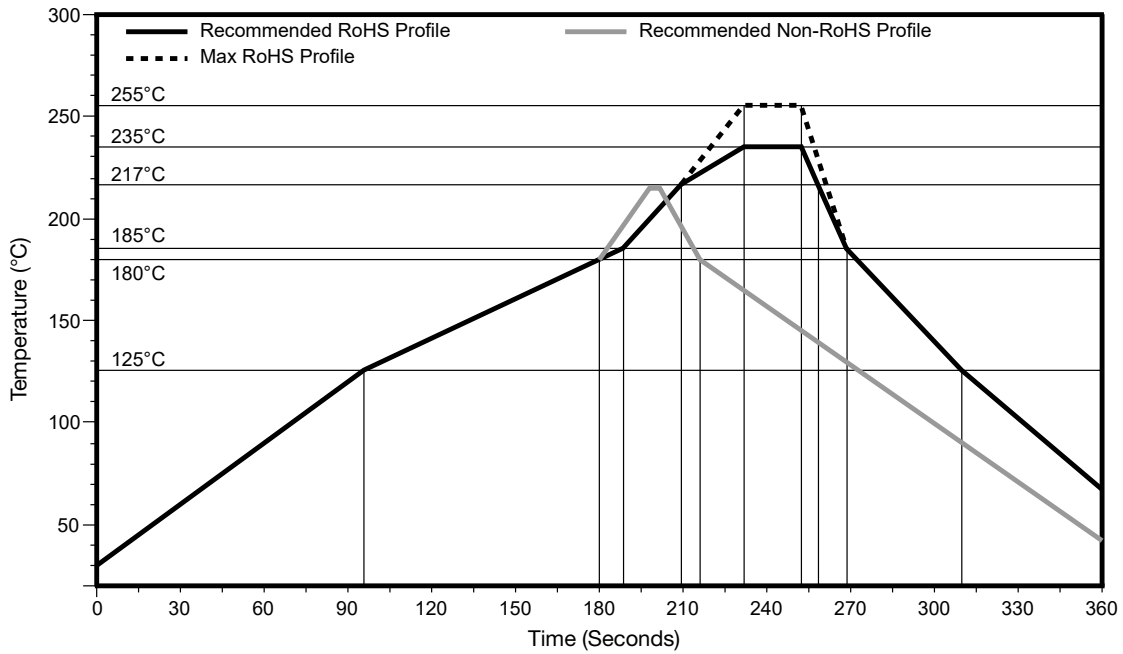


Figure 3. CONSM A020.042-G Recommended Reflow Solder Profile

PACKAGING INFORMATION

The CONSM A020.042-G connector is placed in sealed trays of 100 pcs. Distribution channels may offer alternative packaging options.

CABLE ASSEMBLY DEFINITIONS AND USEFUL FORMULAS

VSWR - Voltage Standing Wave Ratio. VSWR is a unitless ratio that describes how efficiently power is transmitted through the cable assembly. 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 - 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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