



## Quick Reference Guide

### KOAXXA SMA RF Interconnects

TE Connectivity introduces its next generation of RF products with KOAXXA RF interconnects. This product family premieres with the KOAXXA SMA product line that is designed to provide flexibility and value.

#### KEY FEATURES

- Fully compatible with IEC-169-15 standards
- Designed for 0-18 GHz performance
- Ability to mass customize products
- Global manufacturing footprints
- Large-scale manufacturing techniques
- Designed for fully automated assembly
- 500 cycle mating durability

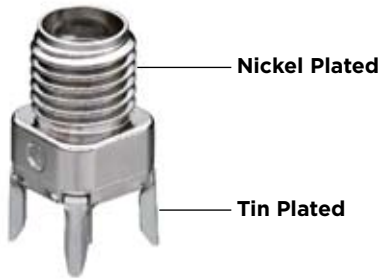
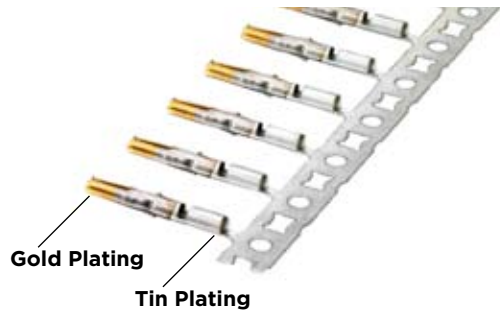
**Benefits**

The new SMA connectors are redeveloped as an extendable product platform for large-scale manufacturing and assembly automation, delivering many advantages to the customer:

- Designed and manufactured to provide industry-leading build to order lead times globally
- Modular platform design allows for mass customization
- Automated assembly and electronic visual inspection to help ensure quality

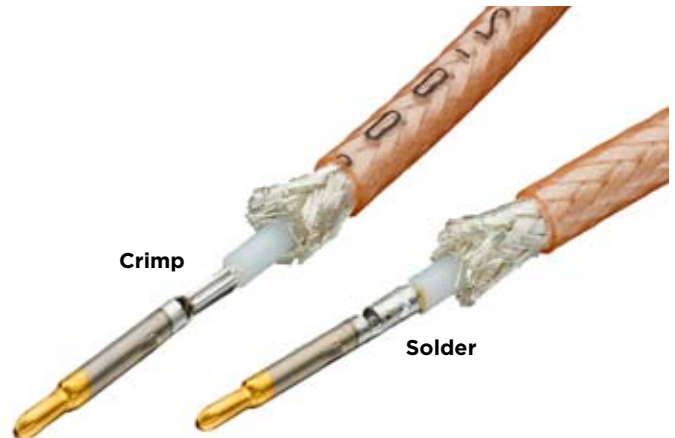
Innovative plating features provide a cost effective, attractive, easy to use product:

- Selective Tin plating only in solder regions allows for easy soldering
- Selective Gold plating puts gold only where it is needed
- Bright Nickel plating provides a robust attractive surface finish



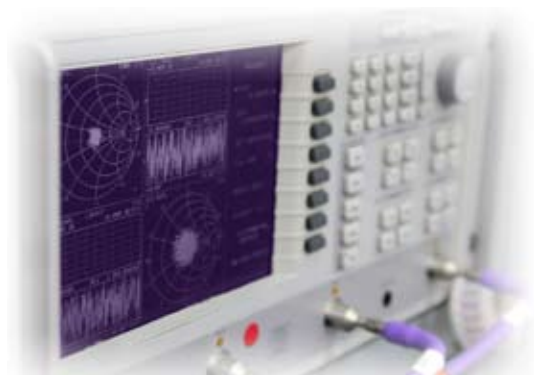
Reduced utilization of precious and non-precious materials through selective plating, stamping and die casting helps decrease exposure to future material inflation.

Center contacts are stamped to provide the right performance and enable the use of selective plating, and can be soldered for best performance, or crimped using a hand applicator.



**KOAXXA SMA Applications:**

- Test and measurement equipment
- Transmission equipment
- Base station and sub system components
- Smart grid meters
- Antennas
- Broadband communication equipment
- Routers
- Industrial solutions
- Mobile radio handsets
- Commercialized applications in Mil/Aero



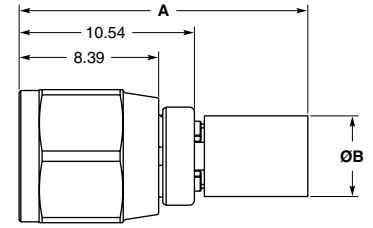
**Product Options** (All dimensions shown are REF)

**Straight Cable Plug**



STRAIGHT CABLE PLUG			
Part Number	Terminates To	Dimensions (mm)	
		A	B
SMA-PS-1A-(X)	RG 402 Semi-Rigid, RG 402 Conformable	17.52	4.85
SMA-PS-1B-(X)	RD316, K0225D	25.18	4.55
SMA-PS-1C-(X)	RG 405 Semi-Rigid, RG 405 Conformable	—	—
SMA-PS-1D-(X)	RG 178, RG 196	—	—
SMA-PS-1E-(X)	0.047 Semi-Rigid, 0.047 Conformable	—	—
SMA-PS-1F-(X)	RG 174, RG 188, RG 316	25.18	3.86
SMA-PS-1G-(X)	RG 58, RG 141, RG 223, RG 400, RG 142	25.18	6.22

(X) - (S) Single Pack/ (B) Bulk Pack in qty 50  
 — = available next revision

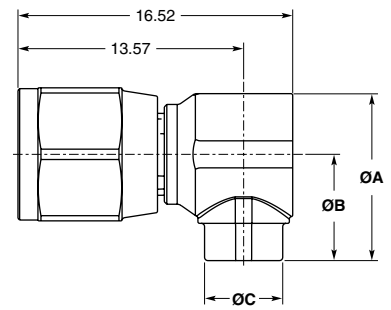


**Right Angle Cable Plug**



RIGHT ANGLE CABLE PLUG			
Part Number	Terminates To	Dimensions (mm)	
		A	B
SMA-PR-1A-(X)	RG 402 Semi-Rigid, RG 402 Conformable	12.82	4.85
SMA-PR-1B-(X)	RD316, K0225D	20.13	4.55
SMA-PR-1C-(X)	RG 405 Semi-Rigid, RG 405 Conformable	—	—
SMA-PR-1D-(X)	RG 178, RG 196	—	—
SMA-PR-1E-(X)	0.047 Semi-Rigid, 0.047 Conformable	—	—
SMA-PR-1F-(X)	RG 174, RG 188, RG 316	20.13	3.86
SMA-PR-1G-(X)	RG 58, RG 141, RG 223, RG 400, RG 142	20.13	6.22

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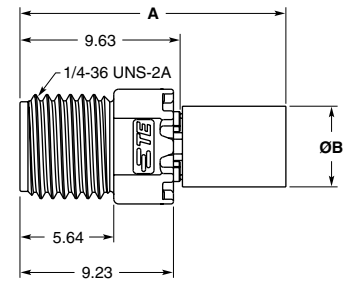


**Straight Cable Jack**



STRAIGHT CABLE JACK			
Part Number	Terminates To	Dimensions (mm)	
		A	B
SMA-JS-1A-(X)	RG 402 Semi-Rigid, RG 402 Conformable	15.99	4.85
SMA-JS-1B-(X)	RD316, K0225D	23.72	4.55
SMA-JS-1C-(X)	RG 405 Semi-Rigid, RG 405 Conformable	—	—
SMA-JS-1D-(X)	RG 178, RG 196	—	—
SMA-JS-1E-(X)	0.047 Semi-Rigid, 0.047 Conformable	—	—
SMA-JS-1F-(X)	RG 174, RG 188, RG 316	23.72	3.86
SMA-JS-1G-(X)	RG 58, RG 141, RG 223, RG 400, RG 142	23.72	6.22

(X) - (S) Single Pack/ (B) Bulk Pack in qty 50  
 — = available next revision

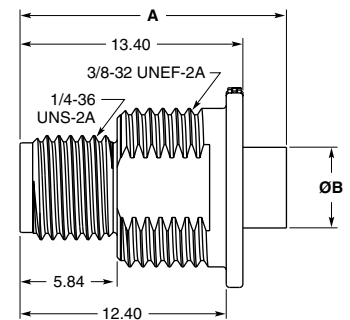


**Bulkhead Cable Jack**



BULKHEAD CABLE JACK			
Part Number	Terminates To	Dimensions (mm)	
		A	B
SMA-JB-1A-(X)	RG 402 Semi-Rigid, RG 402 Conformable	16.05	4.85
SMA-JB-1B-(X)	RD316, K0225D	23.58	4.55
SMA-JB-1C-(X)	RG 405 Semi-Rigid, RG 405 Conformable	—	—
SMA-JB-1D-(X)	RG 178, RG 196	—	—
SMA-JB-1E-(X)	0.047 Semi-Rigid, 0.047 Conformable	—	—
SMA-JB-1F-(X)	RG 174, RG 188, RG 316	23.56	3.86
SMA-JB-1G-(X)	RG 58, RG 141, RG 223, RG 400, RG 142	23.56	6.22

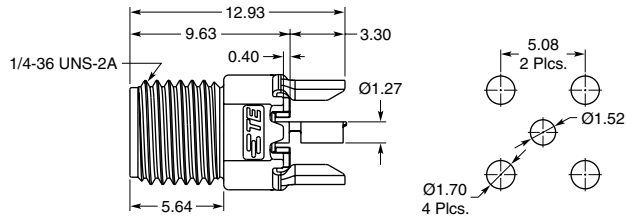
(X) - (S) Single Pack/ (B) Bulk Pack in qty 50  
 — = available next revision



**Vertical/Straight Board Mount Jack**

VERTICAL/STRAIGHT BOARD MOUNT JACK	
Part Number	Terminates To
SMA-JS-P1-(X)	PCB thickness 3.175 mm (.125 in.) max.

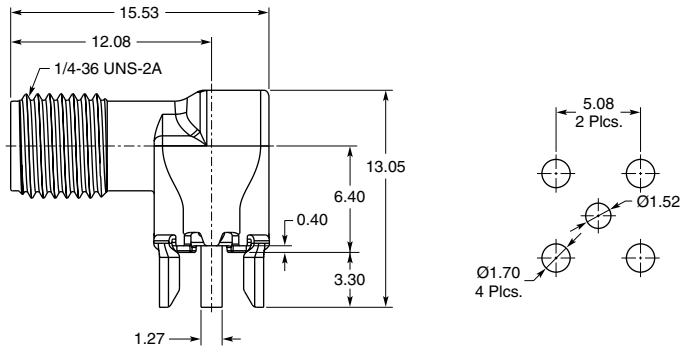
(X) - (S) Single Pack/ (T) Tray Pack in qty 50



**Right Angle Board Mount Jack**

RIGHT ANGLE BOARD MOUNT JACK	
Part Number	Terminates To
SMA-JR-P1-(X)	PCB thickness 3.175 mm (.125 in.) max.

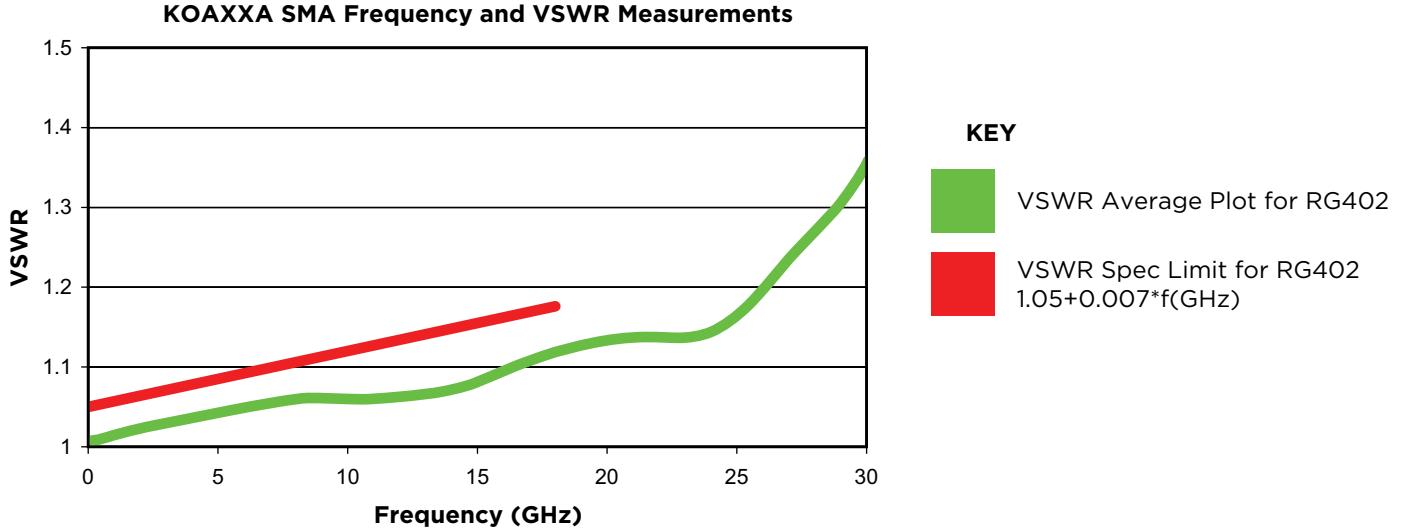
(X) - (S) Single Pack/ (T) Tray Pack in qty 50



**APPLICATION TOOLING INFORMATION**

Cable Group	Cable Description	Termination Type			
		Crimp		Solder	
		Center Contact	Outer Braid	Center Contact	Outer Braid
		Tooling PN 2161864-1	Tooling PN 2161732-1	Tooling PN 2161890-1	
1A	RG402 Semi Rigid, RG402 Conformable	No	No	Yes	Yes
1B	RD316 (Double Braid), K0225D	Yes	Yes	Optional	No
1C	RG405 Semi Rigid, RG405 Conformable	No	No	Yes	Yes
1D	RG178, RG196	No	Yes	Yes	No
1E	0.047 Semi Rigid, 0.047 Conformable	No	No	Yes	Yes
1F	RG174, RG188, RG316	Yes	Yes	Optional	No
1G	RG58, RG141, RG223, RG400, RG142	Yes	Yes	Optional	No

## Technology Corner



## DESCRIPTION

The Voltage Standing Wave Ratio is a unit-less measure of the maximum voltage of a standing wave in the transmission line. Standing waves result from the mismatched complex impedances between the connector and the cable, causing reflections that sum with the input signal.

## KOAXXA SMA Product Specifications

The KOAXXA SMA product family is qualified per TE Connectivity Product Specification 108-60094.

## ELECTRICAL

- Low Level Contact Resistance** — 15 mOhm delta per EIA-364-23
- Insulation Resistance** — 5000 Mohms per EIA-364-21
- Withstanding Voltage** — 750 VAC (flex cable); 1000 VAC (SR cable)
- Voltage Standing Wave Ratio** —  $1.05 + 0.007 * f(\text{GHz})$  up to 18 GHz (SR cable)

## MECHANICAL

- Sinusoidal Vibration** — 20 G's, 10 to 2000 Hz per EIA-364-28, Cond IV
- Mechanical Shock** — 100 G's per EIA-364-27, Cond G
- Mating Torque** — 0.45 N-m [4 in-lb] per EIA-364-13, Method A
- Durability** — 500 cycles minimum per EIA-364-9

## ENVIRONMENTAL

- Thermal Shock** — 5 cycles from -55 to +85°C per EIA-364-32C
- Humidity-Temperature Cycling** — 10 cycles from 25 to 65 c at 95% RH per EIA-364-31B, Cond III
- Temperature Life** — 85°C for 1000 hours per EIA-364-17B
- Mixed Flowing Gas** — 14 days mated exposure to Class IIA per EIA-364-65A

# KOAXXA RF Interconnects Configurable Part Number System<sup>1</sup>

S M A - P S - 1 A - S

RF Connector Type		Gender/Style and Body Type (2 Characters)		Terminates To (2 Characters) <sup>2</sup>			Package Method (1 Character)				
Series	Character Code	Gender/Style (1st Character)		2 Character Code	Impedance	Terminates To	Character Code	Description			
SMA	SMA	<b>Gender/Style</b>		1A	50	RG402 Semi Rigid, RG402 Conformable	S	Single pack kit/ Loose piece			
		<b>1 Character Code</b>									
		Plug	P								
		Jack	J								
		<b>Body Type (2nd Character)</b>									
		<b>Type</b>							1F	50	RG174, RG188, RG316
		<b>1 Character Code</b>									
		Straight/Vertical	S								
		Right Angle	R								
		Bulk Head							B	1G	50
			P1	50	PCB Through Hole						

1. The standard part number configuration is shown. TE Connectivity offers other product configurations that may not be shown. Contact your sales representative or visit TE.com for more information.  
 2. Only the most common termination groups are shown. TE Connectivity offers other termination groups, please contact your sales representative or visit TE.com for more information

## FOR MORE INFORMATION

### TE Technical Support Center

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 UK: +44 (0) 800-267666  
 France: +33 (0) 1-3420-8686  
 Netherlands: +31 (0) 73-6246-999  
 China: +86 (0) 400-820-6015

Part numbers in this brochure are RoHS Compliant\*, unless marked otherwise.

\*as defined [www.te.com/leadfree](http://www.te.com/leadfree)

For information on the complete TE RF interconnects portfolio, including KOAXXA interconnects, visit [www.TE.com/products/RF-interconnects](http://www.TE.com/products/RF-interconnects)

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