



## 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

**OBSOLETE**  
NOT the LATEST  
REVISION

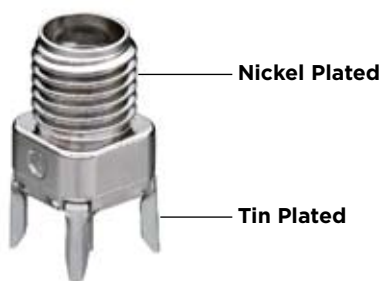
## Benefits

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

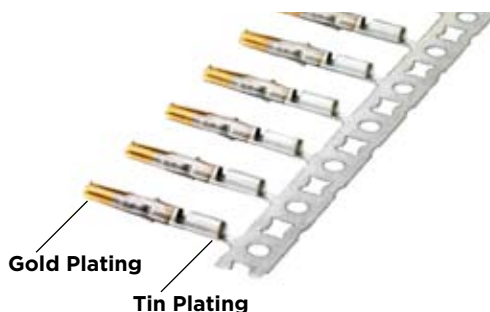
- Designed and manufactured to provide industry-leading build to order lead times globally
- Modular platform design allows for mass customization
- Automated assembly and electronic visual inspection to help ensure quality

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

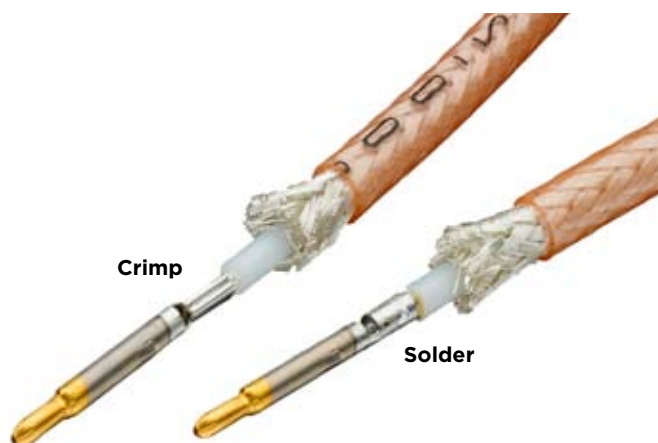
- Selective Tin plating only in solder regions allows for easy soldering
- Selective Gold plating puts gold only where it is needed
- Bright Nickel plating provides a robust attractive surface finish



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.

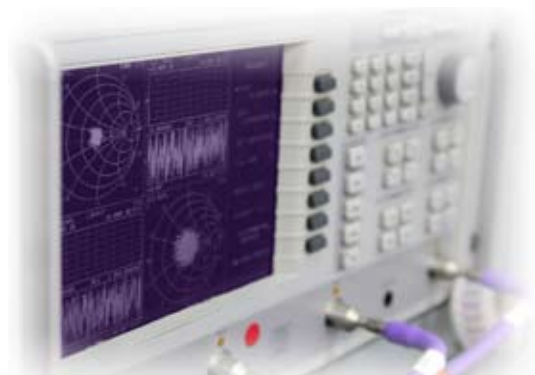


Reduced utilization of precious and non-precious materials through selective plating, stamping and die casting helps decrease exposure to future material inflation.



## 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)

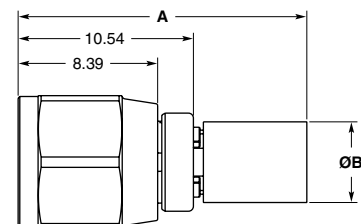
### Straight Cable Plug



| 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



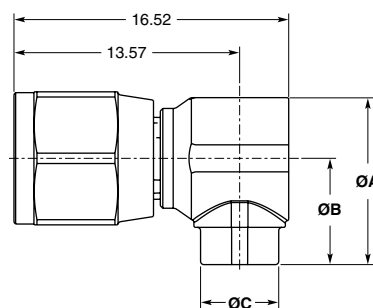
### Right Angle Cable Plug



| 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 |

(X) - (S) Single Pack/ (B) Bulk Pack in qty 50

— = available next revision



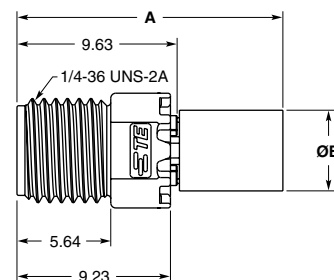
### Straight Cable Jack



| 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



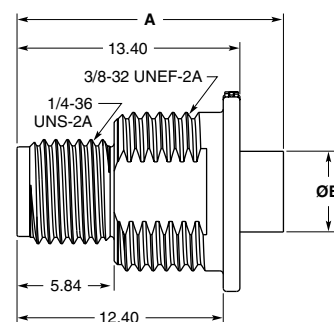
### Bulkhead Cable Jack



| 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 |

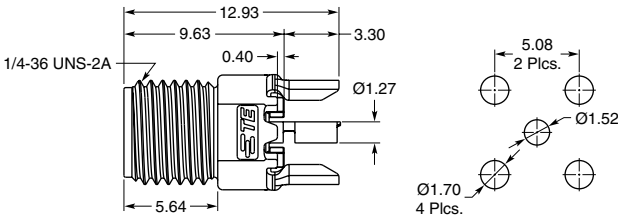
(X) - (S) Single Pack/ (B) Bulk Pack in qty 50

— = available next revision



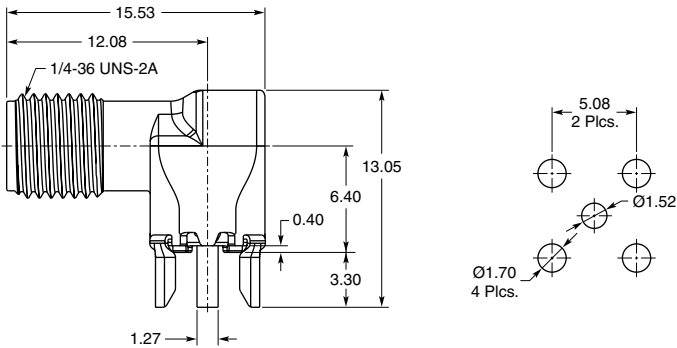
Vertical/Straight Board Mount Jack

| 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 |                                        |



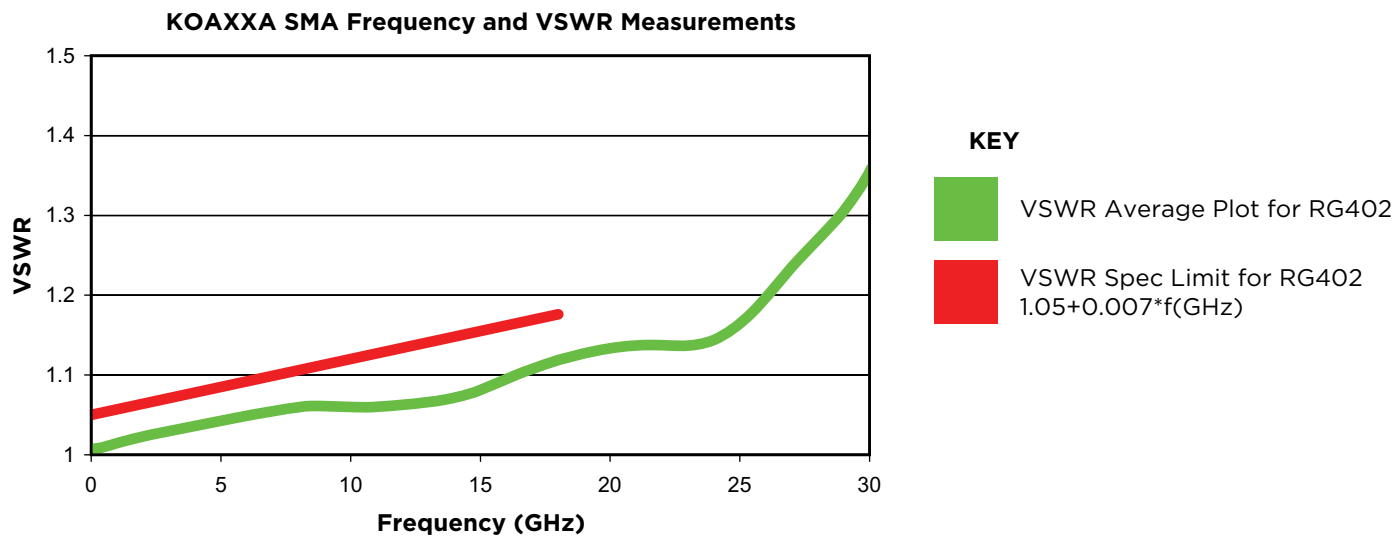
Right Angle Board Mount Jack

| 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            | <u>Gender/Style</u> <u>1 Character Code</u> |   | 1A                                        | 50        | RG402 Semi Rigid, RG402 Conformable | S                            | Single pack kit/ Loose piece |
|                   |                | Plug                                        | P | 1B                                        | 50        | RD316 (Double Braid), K0225D        | B                            | Bulk package kit             |
|                   |                | Jack                                        | J | 1C                                        | 50        | RG405 Semi Rigid, RG405 Conformable | T                            | Tray                         |
|                   |                | <u>Body Type (2nd Character)</u>            |   | 1D                                        | 50        | RG178, RG196                        |                              |                              |
|                   |                | <u>Type</u> <u>1 Character Code</u>         |   | 1E                                        | 50        | 0.047 Semi Rigid, 0.047 Conformable |                              |                              |
|                   |                | Straight/Vertical                           | S | 1F                                        | 50        | RG174, RG188, RG316                 |                              |                              |
|                   |                | Right Angle                                 | R | 1G                                        | 50        | RG58, RG141, RG223, RG400, RG142    |                              |                              |
|                   |                | Bulk Head                                   | B | 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

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UK: +44 (0) 800-267666  
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Netherlands: +31 (0) 73-6246-999  
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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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