

## allectra SMA feedthroughs

SMA is a high quality connection standard for high frequency signals up to several GHz. It is an impedanced matched connection with 50 Ohm.

allectra offers 4 different types:

- with vacuum side pin
- double sided (see photo)
- floating shield<sup>1</sup> with vacuum side pin (see drawing below)
- floating shield double sided

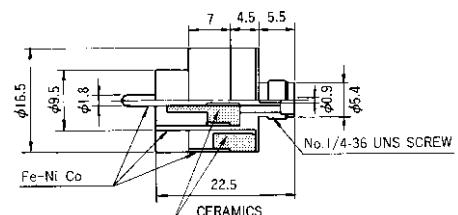


The feedthroughs are offered on DN16CF flanges as standard, custom arrangements are available on request. For own fabrication, weldables are offered as well.

Technical data:

	<b>Grounded Pin</b> <b>242-SMA50</b>	<b>Grounded Double sided</b> <b>242-SMAD50</b>	<b>Floating Pin</b> <b>242-SMAF50</b>	<b>Floating Double sided</b> <b>242-SMADF50</b>
<b>Electrical</b>				
Voltage	1000V			
Current	3A			
Impedance	50 Ohm			
Frequency	6500 MHz			
Temperature min	Liquid-N <sub>2</sub>			
Temperature max.	300°C			
Temp. Gradient	20K/min			
<b>Vacuum</b>				
Leak rate	better 5 *10 <sup>-10</sup> mbar l/s He			
<b>Mechanical</b>				
Diam. of weldable mm	9,5	16,5	16,5	16,5
Pin diameter mm	1,8	SMA	1,8	SMA
Smallest mounting flange	DN16CF			

Dimensions of weldable floating Pin SMA, Type 242-SMAF50



<sup>1</sup> Floating shield means, that the shield of the cable is not on chamber ground but is also insulated against the chamber.

## SMA vacuum side plugs

To make a proper vacuum side connection, Allectra offers suitable connectors. To get real 50 Ohm impedance matching, a small amount of PTFE is used as insulator. The plug including connector pin is 2,5µm gold plated.

If PTFE is not possible to use, a ceramic version is available.



Technical data SMA plug:

<b>Mechanical</b>	<b>UHV-PTFE</b>	<b>UHV-CERAMIC</b>
Material	SS, Copper alloy, all gold plated 2,5µm	SS, Copper alloy, all gold plated 2,5µm
Insulator	PTFE, non-coloured	Glass ceramic
Fitting cable	311-KAP50 / RG174 <sup>1)</sup>	311-KAP50 / RG174 <sup>1)</sup>
Mounting	Crimp, alternatively solder <sup>2)</sup>	Crimp, alternatively solder <sup>2)</sup>
<b>Electrical</b>		
Voltage	1500V (Test voltage)	1500V (Test voltage)
Impedance	50 Ohm	*)
Frequency	>10 GHz	>100 MHz
Temperature min	Liquid-N <sub>2</sub>	Liquid-N <sub>2</sub>
Temperature max.	200°C (150°C in air)	300°C (150°C in air)

\*) Note: The Glass ceramic has a dielectric constant of ~8 (PTFE has ~2), so with this insulation the design will not have exact 50 Ohm and higher losses will appear.

<sup>1)</sup> 311-KAP50 is the UHV compatible 50 Ohm cable, insulated with Kapton. Conductor is silver plated copper. RG174 is the standard air side cable, it cannot be used in UHV.

<sup>2)</sup> A special solder for vacuum is recommended, it is free of Cd, Sn, Zn and flux. Please ask for details if required.

All data given in this sheet are carefully checked but are open to change at any time.