



All dimensions are in mm; tolerances according to ISO 2768 m-H

**Interface**

According to IEC 61169-35  
Mechanically compatible with RPC-3.50 and SMA

**Contents and Documentation**

- This kit is delivered with
- **Standard Definitions Card**  
Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
  - **Test Results Documentation**
  - **Hard Shell Case**
  - **Protection Caps**

**Material and plating**

**Connector parts**

Center conductor  
Outer conductor  
Body  
Dielectric  
Substrate

**Material**

CuBe  
Stainless steel  
Aluminum  
PS  
Al<sub>2</sub>O<sub>3</sub>

**Plating**

Gold, min. 1.27 µm, over nickel  
Passivated  
black anodized

**Electrical data**

Frequency range	DC to 40.0 GHz
<b>Thru</b>	
Return loss	≥ 32 dB, DC to 4 GHz ≥ 30 dB, 4 GHz to 26.5 GHz ≥ 28 dB, 26.5 GHz to 40 GHz
<b>Open</b>	
Error from nominal phase <sup>1</sup>	≤ 1.5°, DC to 4 GHz ≤ 4.0°, 4 GHz to 26.5 GHz ≤ 5.0°, 26.5 GHz to 40.0 GHz
<b>Short</b>	
Error from nominal phase <sup>2</sup>	≤ 1.5°, DC to 4 GHz ≤ 4.0°, 4 GHz to 26.5 GHz ≤ 5.0°, 26.5 GHz to 40.0 GHz
<b>Load</b>	
Return loss	≥ 40.0 dB, DC to 4 GHz ≥ 28.0 dB, 4 GHz to 26.5 GHz ≥ 25.0 dB, 26.5 GHz to 40.0 GHz
DC Resistance	50 Ω ± 0.5 Ω
Power handling (at 25 °C, sea level)	≤ 0.5 W, derate by 0.005 W/K

<sup>1</sup> The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances

<sup>2</sup> The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance

**Mechanical data**

Mating cycles	≥ 500
Maximum torque	1.70 Nm
Recommended torque	0.90 Nm
Gauge	0.00 mm to 0.08 mm

**General standard definitions**

For proper operation the vector network analyzer (VNA) needs a model describing the electrical behaviour of this calibration standard. The different models, units, and terms used will depend on the VNA type and they will have to be entered into the VNA. All values are based on typical geometry and plating.

**Thru**

Offset Z <sub>0</sub> / Impedance / Z <sub>0</sub>	50 Ω
Offset Delay	65.712 ps
Length (electrical) / Offset Length	19.70 mm
Offset Loss	2.70 GΩ/s
Loss	0.0154 dB/√GHz
Line Loss @ 1GHz	0.0008 dB/mm

**Open**

Offset Z <sub>0</sub> / Impedance / Z <sub>0</sub>	50 Ω
Offset Delay	28.353 ps
Length (electrical) / Offset Length	8.50 mm
Offset Loss	2.40 GΩ/s
Loss	0.0118 dB/√GHz
Fringing Capacitances	C <sub>0</sub> = -4.30000 x 10 <sup>-15</sup> F / -4.30000 fF C <sub>1</sub> = 431.000 x 10 <sup>-27</sup> F/Hz / 0.43100 fF /GHz C <sub>2</sub> = -11.5000 x 10 <sup>-36</sup> F/Hz <sup>2</sup> / -0.01150 fF /GHz <sup>2</sup> C <sub>3</sub> = 0.12000 x 10 <sup>-45</sup> F/Hz <sup>3</sup> / 0.00012 fF /GHz <sup>3</sup>