

N 50 Ω

Calibration Kit Plug

53S38R-MSON3



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

Interface

According to

IEC 61169-16

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**
- **Lanyard**
- **Hard Shell Case**
- **Protection Caps**

Material and plating

Connector parts

Center conductor
Outer conductor
Coupling nut
Body
Dielectric
Substrate

Material

Brass
Brass
Brass
Brass
PTFE / PPE
Al₂O₃

Plating

Gold, min. 1.27 µm, over nickel
Flash white bronze over silver(e.g. Optargen®)
White bronze(e.g. Optalloy®)
powder-coated

Electrical data

Frequency range DC to 8 GHz

Open

Error from nominal phase¹
 $\leq 3.0^\circ$, DC to 6 GHz
 $\leq 5.0^\circ$, 6 GHz to 8 GHz

Short

Error from nominal phase²
 $\leq 2.0^\circ$, DC to 6 GHz
 $\leq 4.0^\circ$, 6 GHz to 8 GHz

Load

Return loss
 ≥ 42 dB, DC to 2.5 GHz
 ≥ 38 dB, 2.5 GHz to 6 GHz
 ≥ 35 dB, 6 GHz to 8 GHz
 DC Resistance $50 \Omega \pm 0.5 \Omega$
 Power handling (at 25 °C, sea level) ≤ 1.0 W, derate by 0.01 W/K

¹ The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances

² 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 1.10 Nm
 Gauge 5.28 mm to 5.84 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.

Open

Offset Z_0 / Impedance / Z_0 50 Ω
 Offset Delay 67.78 ps
 Length (electrical) / Offset Length 20.32 mm
 Offset Loss 0.80 GΩ/s
 Loss 0.0094 dB/√GHz
 Fringing Capacitances
 $C_0 = -11.4000 \times 10^{-15}$ F / -11.4000 fF
 $C_1 = 9000.00 \times 10^{-27}$ F/Hz / 9.00000 fF /GHz
 $C_2 = -1180.00 \times 10^{-36}$ F/Hz² / -1.18000 fF /GHz²
 $C_3 = 20.0000 \times 10^{-45}$ F/Hz³ / 0.02000 fF /GHz³

Technical Data Sheet				Rosenberger																			
N 50 Ω		Calibration Kit Plug		53S38R-MSON3																			
Short Offset Z_o / Impedance / Z_o50 Ω Offset Delay67.78 ps Length (electrical) / Offset Length20.32 mm Offset Loss0.80 GΩ/s Loss0.0094 dB/√GHz Short Inductance L₀ = 28.0000 x 10⁻¹² H / 28.0000 pH L₁ = -4200.00 x 10⁻²⁴ H/Hz / -4.20000 pH/GHz L₂ = -2000.00 x 10⁻³³ H/Hz² / -2.00000 pH/GHz² L₃ = 333.000 x 10⁻⁴² H/Hz³ / 0.33300 pH/GHz³ Load Offset Z_o / Impedance / Z_o50 Ω Offset Delay0.0000 ps Length (electrical) / Offset Length0.000 mm Offset Loss0.00 GΩ/s Loss0.0000 dB/√GHz Environmental data Operating temperature range³0 °C to +50 °C Storage temperature range-40 °C to +85 °C RoHScompliant ³ Temperature range over which these specifications are valid. Declaration of documentation Standard delivery for this kit includes Test Results. The documentation issued reports which quantities were tested individually, traceable to national / international standards. Model based standard definitions of the calibration standards are reported in Agilent / Keysight, Rohde & Schwarz and Anritsu compatible VNA format. Inspection interval Recommendation12 months Packing Standard1 pce in bag Weight140 g/pce While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary. <table><tr><td>Draft</td><td>Date</td><td>Approved</td><td>Date</td><td>Rev.</td><td>Engineering change number</td><td>Name</td><td>Date</td></tr><tr><td>Marcel Panicke</td><td>26.11.14</td><td>Markus Müller</td><td>29.04.20</td><td>d00</td><td>19-2083</td><td>Marion Striegler</td><td>29.04.20</td></tr></table> Rosenberger Hochfrequenztechnik GmbH & Co. KG P.O.Box 1260 D-84526 Tittmoning Germany www.rosenberger.de Tel. : +49 8684 18-0 Email : info@rosenberger.de Page 3 / 3								Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date	Marcel Panicke	26.11.14	Markus Müller	29.04.20	d00	19-2083	Marion Striegler	29.04.20
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