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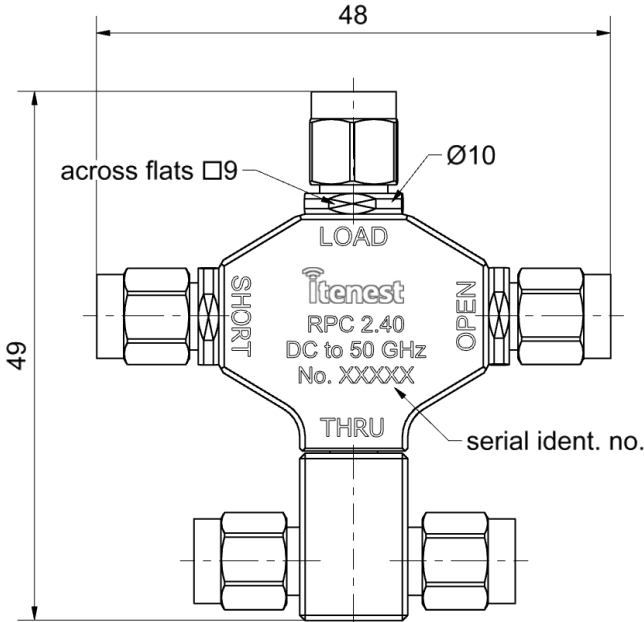
Technical Specification

RPC-2.40

Calibration Kit Plug



MCK50A-M



48

49

across flats 9

Ø10

LOAD

SHORT

OPEN

THRU

serial ident. no.

Thru can rotate 90°



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

Interface

According to
Mechanically compatible with

IEC 61169-40
RPC-1.85

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
Coupling nut
Body
Dielectric
Substrate

Material

CuBe
Stainless steel
Stainless steel
Aluminum
PS
Al₂O₃

Plating

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

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Technical Specification



RPC-2.40

Calibration Kit
Plug

MCK50A-M

Electrical data

Frequency range DC to 50.0 GHz

Thru

Return loss

- ≥ 30 dB, DC to 4 GHz
- ≥ 24 dB, 4 GHz to 26.5 GHz
- ≥ 17 dB, 26.5 GHz to 50 GHz

Open

Error from nominal phase¹

- ≤ 2.0°, DC to 4 GHz
- ≤ 4.0°, 4 GHz to 26.5 GHz
- ≤ 6.0°, 26.5 GHz to 50.0 GHz

Short

Error from nominal phase²

- ≤ 1.5°, DC to 4 GHz
- ≤ 3.0°, 4 GHz to 26.5 GHz
- ≤ 4.5°, 26.5 GHz to 50.0 GHz

Load

Return loss

- ≥ 36.0 dB, DC to 4 GHz
- ≥ 30.0 dB, 4 GHz to 26.5 GHz
- ≥ 22.0 dB, 26.5 GHz to 50.0 GHz

DC Resistance 50 Ω ± 0.5 Ω

Power handling (at 25 °C, sea level) ≤ 0.5 W, derate by 0.005 W/K

¹ The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances² The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance**Mechanical data**

Mating cycles ≥ 500

Maximum torque 1.65 Nm

Recommended torque 0.90 Nm

Gauge 0.00 mm to 0.05 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 Z₀ / Impedance / Z₀ 50 Ω

Offset Delay 87.394 ps

Length (electrical) / Offset Length 26.20 mm

Offset Loss 4.00 GΩ/s

Loss 0.0304 dB/√GHz

Line Loss @ 1GHz 0.0012 dB/mm

Open

Offset Z₀ / Impedance / Z₀ 50 Ω

Offset Delay 23.350 ps

Length (electrical) / Offset Length 7.00 mm

Offset Loss 3.20 GΩ/s

Loss 0.0130 dB/√GHz

Fringing Capacitances

- C₀ = 2.30000 x 10⁻¹⁵ F / 2.30000 fF
- C₁ = -810.000 x 10⁻²⁷ F/Hz / -0.81000 fF /GHz
- C₂ = 35.0000 x 10⁻³⁶ F/Hz² / 0.03500 fF /GHz²
- C₃ = -0.40000 x 10⁻⁴⁵ F/Hz³ / -0.00040 fF /GHz³

Technical Specification

RPC-2.40

Calibration Kit
Plug**MCK50A-M****Short**

Offset Z_0 / Impedance / Z_0	50 Ω	
Offset Delay	23.350 ps	
Length (electrical) / Offset Length	7.00 mm	
Offset Loss	3.50 G Ω /s	
Loss	0.0142 dB/ $\sqrt{\text{GHz}}$	
Short Inductance	$L_0 = 6.00000 \times 10^{-12} \text{ H}$	/ 6.00000 pH
	$L_1 = 0.00000 \times 10^{-24} \text{ H/Hz}$	/ 0.00000 pH/GHz
	$L_2 = 0.00000 \times 10^{-33} \text{ H/Hz}^2$	/ 0.00000 pH/GHz ²
	$L_3 = 0.00000 \times 10^{-42} \text{ H/Hz}^3$	/ 0.00000 pH/GHz ³

Load

Offset Z_0 / Impedance / Z_0	50 Ω
Offset Delay	0.0000 ps
Length (electrical) / Offset Length	0.000 mm
Offset Loss	0.00 G Ω /s
Loss	0.0000 dB/ $\sqrt{\text{GHz}}$

Environmental data

Operating temperature range ³	+20 °C to +26 °C
Rated temperature range of use ⁴	0 °C to +50 °C
Storage temperature range	-40 °C to +85 °C
RoHS	compliant

³ Temperature range over which these specifications are valid.⁴ This range is underneath and above the operating temperature range, within the calibration kit is fully functional and could be used without damage**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.

Inspection interval

Recommendation	12 months
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Packing

Standard	1 pce in bag
Weight	33 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.

Rev.	Date
b00	09.08.18

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