

RF CURRENT MONITORING PROBE

1 Introduction

The TBCP1-250 is a fixed aperture RF current monitoring probe, expanding the Tekbox product range of affordable EMC pre-compliance test equipment.

The probe has a very flat response with a 3dB bandwidth of 250 MHz and is characterized and usable over the frequency range from 30kHz to 250 MHz.



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The aperture of the RF current monitoring probe is 25 mm. Its transfer impedance is > 16 dB Ω in the range from 300 kHz to 250 MHz.

2 Specification

Characterized frequency range: 30 kHz to 250 MHz

Aperture diameter: 25 mm

Outside diameter: 76 mm

Height: 31 mm

Weight: 320 g

Connector type: N female

Transfer impedance: 0 to 18 dB Ω

Max. primary current (DC - 400 Hz): 80 A

Max. primary current (RF): 3 A

Max. core temperature: 125 °C

3 Transfer impedance

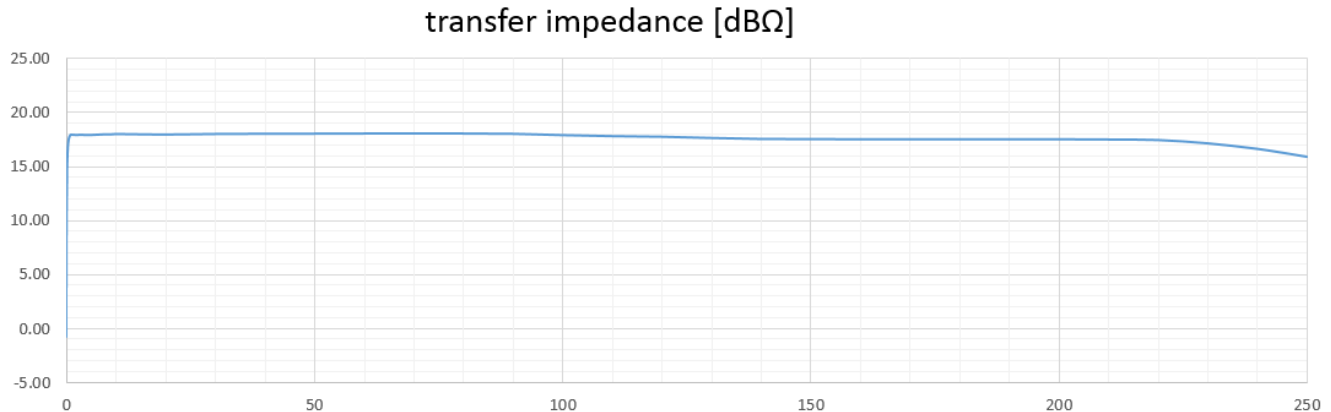


Figure1: typical transfer impedance: 30 kHz to 250 MHz, linear

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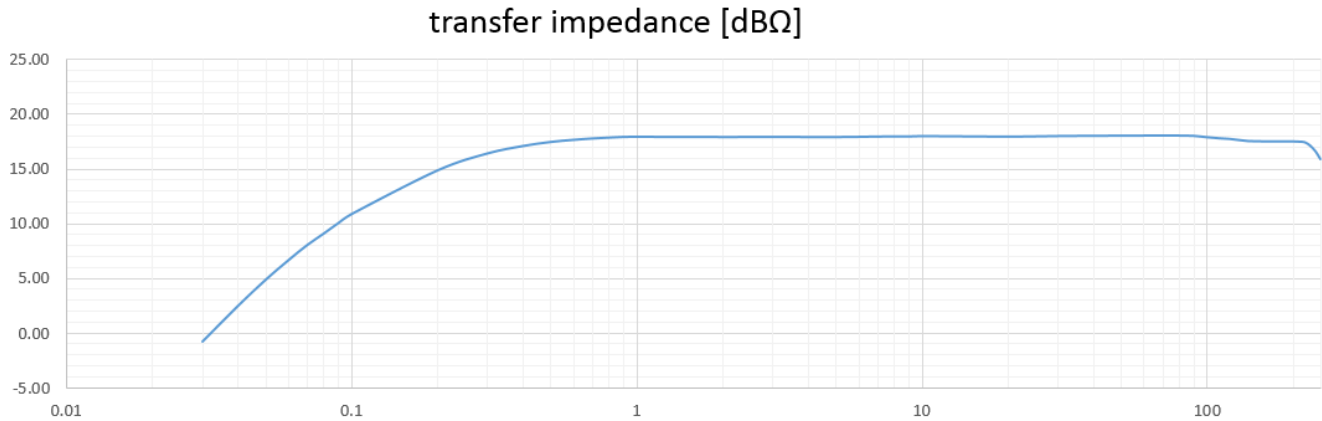


Figure2: typical transfer impedance: 30 kHz to 250 MHz, logarithmic

4 Typical transfer impedance table

The table below shows typical transfer impedance data of a TBCP-250 current probe. Each current probe is delivered with its corresponding measurement protocol. This data can be used for the creation of a correction file for EMCview or similar EMC measurement software. The transfer impedance in dBΩ subtracted from the analyzer reading in dBμV gives the corrected reading in dBμA.

Refer to the application notes of EMCview on how to create a current probe correction file.

Frequency [MHz]	transfer impedance [dBΩ]	Frequency [MHz]	transfer impedance [dBΩ]
0.03	-0.79	10	18.01
0.04	2.49	20	17.97
0.05	4.87	30	18.02
0.06	6.65	40	18.04
0.07	8.06	50	18.05
0.08	9.11	60	18.06
0.09	10.07	70	18.06
0.1	10.88	80	18.06
0.2	14.87	90	18.03
0.3	16.43	100	17.91
0.4	17.11	110	17.82
0.5	17.48	120	17.76
0.6	17.67	130	17.65
0.7	17.80	140	17.56
0.8	17.88	150	17.54
0.9	17.94	160	17.53
1	17.95	170	17.52
2	17.93	180	17.52
3	17.94	190	17.53

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4	17.93	200	17.53
5	17.93	210	17.51
6	17.95	220	17.46
7	17.97	230	17.15
8	17.99	240	16.64
9	17.98	250	15.91

Table1: Transfer impedance: 30 kHz to 250 MHz

5 Ordering Information

Part Number	Description
TBCP1-250	Fixed aperture RF current monitoring probe, beech-wood box, calibration protocol

6 History

Version	Date	Author	Changes
V 1.0	6.05.2018	Mayerhofer	Creation of the document

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