

Product Datasheet - Technical Specifications



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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.



Picture 1: TBCP1-250 RF current monitoring probe

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

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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 dBΩ

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

Max. primary current (RF): 3 A

Max. core temperature: 125 °C

3 Transfer impedance

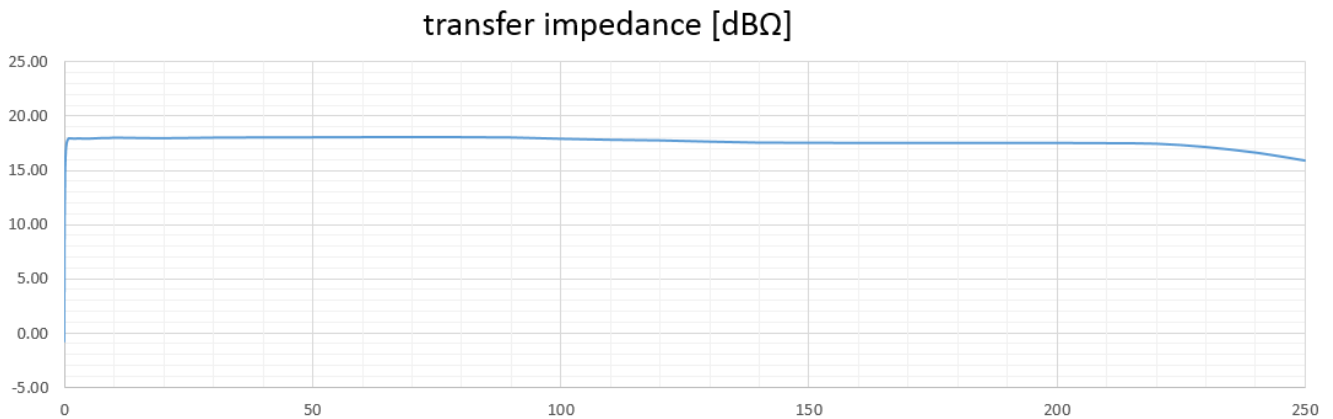


Figure1: typical transfer impedance: 30 kHz to 250 MHz, linear

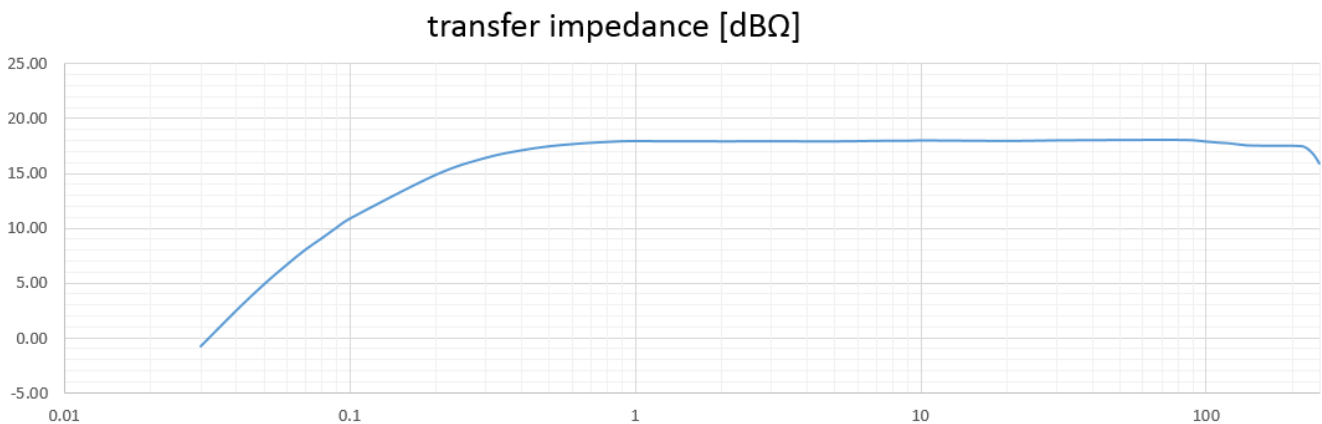


Figure2: typical transfer impedance: 30 kHz to 250 MHz, logarithmic

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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 $\text{dB}\Omega$ subtracted from the analyzer reading in $\text{dB}\mu\text{V}$ gives the corrected reading in $\text{dB}\mu\text{A}$.

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

Frequency [MHz]	transfer impedance [$\text{dB}\Omega$]	Frequency [MHz]	transfer impedance [$\text{dB}\Omega$]
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
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

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5 Accessory

Tekbox supplies a calibrator corresponding with the TBCP1 current probe series:



Picture 2: TBCP1-CAL RF current probe calibrator

6 Ordering Information

Part Number	Description
TBCP1-250	Fixed aperture RF current monitoring probe, beech-wood box, calibration protocol
TBCP1-CAL	Current probe calibrator for the TBCP1 series

7 History

Version	Date	Author	Changes
V 1.0	6.05.2018	Mayerhofer	Creation of the document
V 1.1	28.1.2021	Mayerhofer	Chapter 5 added