

Data Sheet

RF Broad-Band Transformers

UU-41-10

UU-41-10-L

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Function

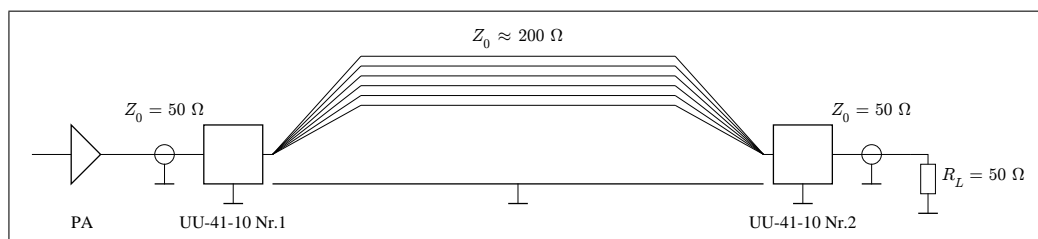
The RF Broad-Band Transformers UU-41-10 and UU-41-10-L are transmission-line transformers for the frequency ranges of 40 kHz to 30 MHz (UU-41-10) and 10 kHz to 30 MHz (UU-41-10-L). The load impedance on the unsymmetrical high-impedance connector is transformed by an impedance ratio of 4:1 with low power loss to an unsymmetrical impedance on the low-impedance coaxial connector. The power flow may be reversed.

Technical Data

Types	UU-41-10, UU-41-10-L
Construction	transmission-line transformer (UN-UN) with impedance ratio 4:1
nominal impedance at low-impedance connector	50 Ω resistive
nominal impedance at high-impedance connector	200 Ω resistive
VSWR on high-impedance connector	≤ 3.0
rated RF power	≤ 10 kW (see Notes for Power Specification)
operating frequency range	UU-41-10: 40 kHz - 30 MHz UU-41-10-L: 10 kHz - 30 MHz
Connectors	50 Ω 200 Ω Ground
Case	material aluminum, powder-coated, grey (RAL 7035) dimensions length 450 mm x width 240 mm x height 270 mm mass (weight) approximately 40 kg

Typical Application

An application of two transformers UU-41-10 (or UU-41-10-L) for EMC measurements is shown in the following figure:



A microstrip line, made of parallel single wires over the conducting floor, is terminated by a load impedance $Z_L \approx 200 \Omega$. This impedance is created by transformer UU-41-10 Nr. 2 loaded by 50 Ω (dummy load).

At the input of the microstrip line, transformer UU-41-10 Nr. 1 is connected which transforms the input impedance of the line down by a ratio of 4:1.

The RF power from the transmitter (Power Amplifier = PA) flows to the coaxial connector of transformer UU-41-10 Nr. 1 via a coaxial cable with a characteristic impedance of $Z_0 \approx 50\Omega$.

By using two transformers UU-41-10, the RF voltage and therefore the E-field-strength on the microstrip line for a given RF power is approximately doubled as compared to the direct connection PA – microstrip line – dummy load.

Notes for Power Specification

The rated maximum RF power is a guiding value for the user. In an actual application, the RF power capability per transformer depends on the operating frequency and the operating complex impedances. In the upper part of the extremely broad-band operating frequency range, a high temperature rise of the transformer is possible.

With the types UU-41-10 and UU-41-10-L, after an operating time of approximately five minutes at $f = f_{\max} = 30\text{MHz}$ with rated power, a cool-down time of 30 minutes is strongly suggested.

Delivery

The RF Broad-Band Transformers UU-41-10 and UU-41-10-L are delivered ready-to-use with individual measurement protocols.

Contact

For more information please contact Hans Gall, email: Hans.Gall@Bausch-Gall.de

We also design and manufacture RF broad-band transformers for other operating frequency ranges or RF power levels. More information and data sheets are available at www.Bausch-Gall.de/trlrtrf.htm.

Please observe the following important statements:

- **Our products are only applicable for users with the necessary RF know-how!**
- **For possible damages - irrespective of their nature or sort - in no case will BAUSCH-GALL GmbH be liable.**
- Because of the fact that the application of our products takes place out of our control, their use is exclusively within the liability of the customer. This applies also if the application of our products is made according to our application-specific consulting in spoken word or in writing.
- All information about our products and our application-specific consultation in spoken word, in writing or by experimentation are given according to our best knowledge. This information is only offered by us to the user as non-binding technical application assistance. This applies also to any rights of third parties who may be concerned.
- Our consultation does not free the user from his or her own checking of our application hints and of our products in respect to their suitability for the intended application.
- We reserve the right for improvements and changes during our further technical development of all our products.