



AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
SINCE 1975

info@avtechpulse.com
<http://www.avtechpulse.com/>

Tel: 888-670-8729 (USA & Canada)
or +1-613-686-6675 (Worldwide)

BOX 5120, LCD MERIVALE
OTTAWA, CANADA K2C3H5

INSTRUCTIONS

AVX-FILT SERIES
OF RISE TIME FILTERS
FOR USE WITH
AVR-EBF6-B TFR TEST SYSTEMS

SERIAL NUMBER: 14552, 14553

WARRANTY

Avtech Electrosystems Ltd. warrants products of its manufacture to be free from defects in material and workmanship under conditions of normal use. If, within one year after delivery to the original owner, and after prepaid return by the original owner, this Avtech product is found to be defective, Avtech shall at its option repair or replace said defective item. This warranty does not apply to units which have been disassembled, modified or subjected to conditions exceeding the applicable specifications or ratings. This warranty is the extent of the obligation assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

TECHNICAL SUPPORT

Phone: 888-670-8729 (USA & Canada)
or +1-613-686-6675 (Worldwide)

E-mail: info@avtechpulse.com
World Wide Web: <http://www.avtechpulse.com>

TABLE OF CONTENTS

WARRANTY..... 2

TECHNICAL SUPPORT..... 2

TABLE OF CONTENTS..... 3

INTRODUCTION..... 4

BASIC USAGE..... 5

AMPLITUDE ACCURACY..... 6

INCORRECT ORIENTATION..... 6

CABLE LENGTHS..... 6

ACCESSIBLE VOLTAGES..... 6

PERFORMANCE CHECK SHEET..... 7

Manual Reference: /fileserver1/officefiles/instructword/avx-filt/AVX-FILT,sn14552.odt.
Last modified February 14, 2025.
Copyright © 2025 Avtech Electrosystems Ltd, All Rights Reserved.

INTRODUCTION

The AVX-FILT models are rise time filters intended for use with the AVR-EBF6-B forward recovery test system. (The AVX-FILT has not been characterized for use with other systems.) The AVR-EBF6-B mainframe output provides voltage pulses of up to +50V with rise times < 5 ns. The rise time filter, when connected to this output, increases the rise time of the voltage pulse. (One AVX-FILT model is normally included with each AVR-EBF6-B system. Additional AVX-FILT units may be ordered separately.)

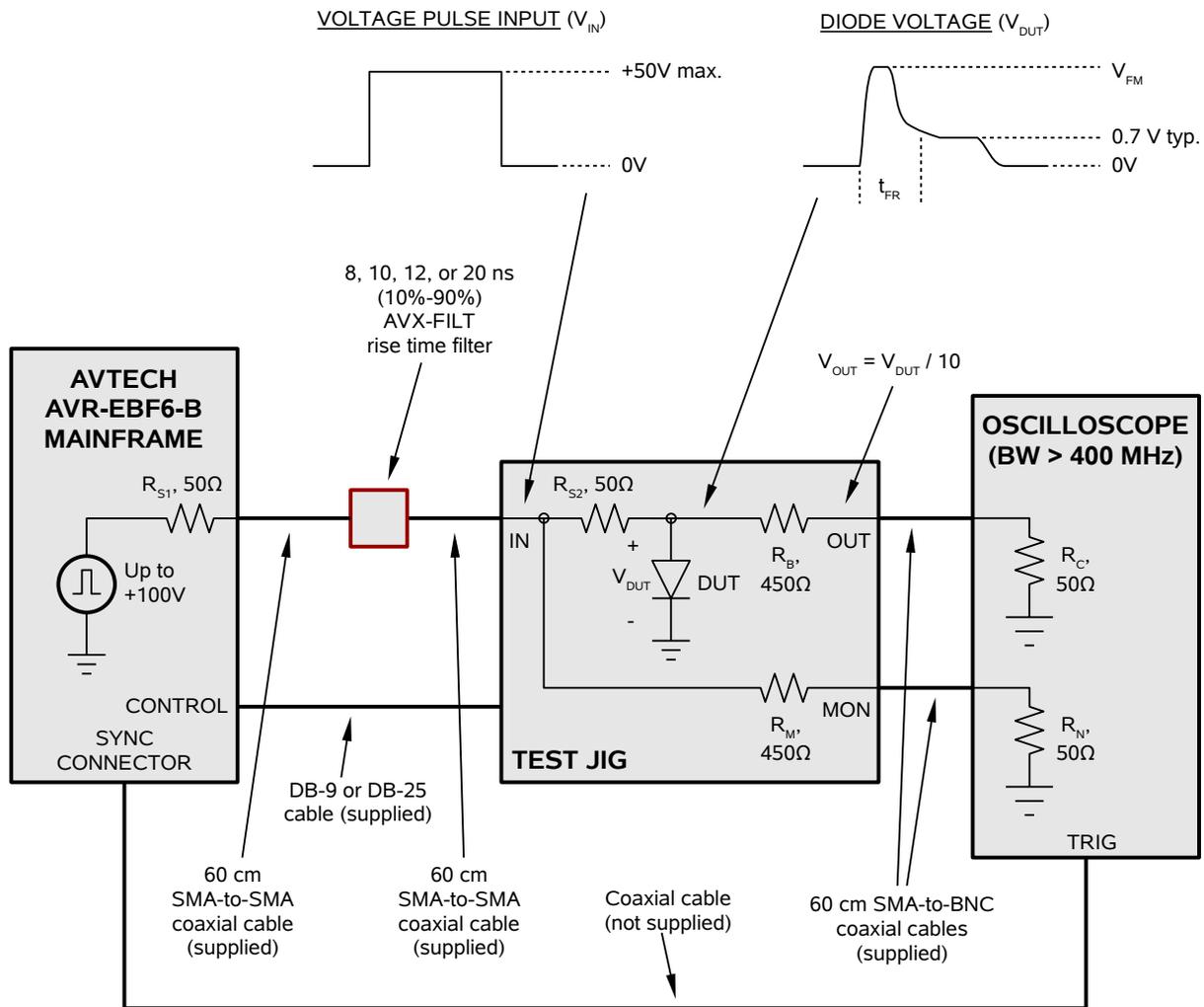
The output rise time (measured 10%-90%, $\pm 20\%$ accuracy) is:

- 8 ns for AVX-FILT-8NS units
- 10 ns for AVX-FILT-10NS units
- 12 ns for AVX-FILT-12NS units
- 20 ns for AVX-FILT-20NS units

BASIC USAGE

The AVX-FILT models are rise time filters intended for use with the AVR-EBF6-B forward recovery test system. Please see the AVR-EBF6-B manual for full details.

The basic test arrangement for the AVR-EBF6-B and AVX-FILT filter is shown in the figure below:



The AVR-EBF6-B mainframe connects to the rise time filter using a 60 cm length of SMA-to-SMA coaxial cable.

The output of the filter connects to the test jig using another 60 cm length of SMA-to-SMA coaxial cable.

AMPLITUDE ACCURACY

 Due to the variations in V_F as a function of operating conditions, the amplitude settings *should not be relied upon for any degree of accuracy*. Instead the voltage at the OUT terminal on the test jig should be monitored with a calibrated oscilloscope.

R_B can be measured directly on the test jig (with the test jig disconnected) to determine calibrated relationships, if desired. R_C is provided by the user, and can be calibrated as required.

INCORRECT ORIENTATION

The instrument and the DUT will not be damaged if the diode is installed with the incorrect orientation (i.e., with the anode and cathode reversed). However, incorrect waveforms will be generated,

CABLE LENGTHS

The cable lengths are not critical. They may be increased or decreased as desired.

The cables connecting the OUT and MON signals to the oscilloscope should have identical lengths, to avoid introducing timing skews.

ACCESSIBLE VOLTAGES

The AVR-EBF6-B mainframe provides pulsed voltages of up to 100V to the test jig. For this reason, the output is automatically disabled when the test jig lid is open. The lid must be closed to obtain measurements.

 Shielded cabling should be used for all connections to the "IN" and "OUT" terminals on the test jig, and the "OUT" connector on the AVR-EBF6-B mainframe.

 When used properly (with $R_C = 50$ Ohms), the maximum voltage on the OUT terminal will be $< 1V$, approximately. However, if R_C is not connected and the DUT is not installed, the maximum voltage will at the OUT terminal may be as high as 100V. You may need to consider whether this scenario would damage your oscilloscope, and take appropriate precautions.

PERFORMANCE CHECK SHEET