GSI / SD
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Fast Beam Current Transformer T-DS 114

transimpedance in 50 Ohm:	.23 A/V
pulse droop loss:	< 5 %/ms
L/R time constant:	ca. 80 ms
lower corner frequency/-3dB:	ca. 2 kHz
rise time 10...90 %:	< 1.5 ns
upper corner frequency/-3dB:	> 300 MHz
dependency to beam steering error:	~ .2 %/mm deviation
max. current-time-product:	10 mA*s
prescribed burden resistance:	50 Ohm, BW 1 GHz
resolution with suitable amplifier, BW = 500 MHz, F < 2 dB, S/N = 1:	ca. 35 uApp

Fig. 1: short pulse response, 2 ns/div; TOP: output, BOTTOM: input

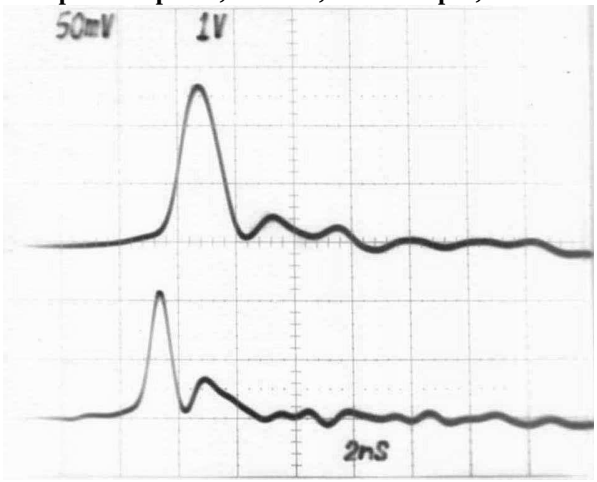
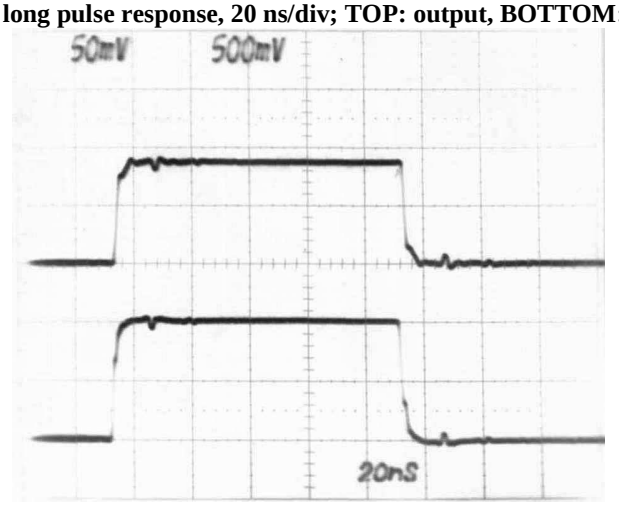


Fig. 2: long pulse response, 20 ns/div; TOP: output, BOTTOM: input



remarks:

- secondary electrons passing the toroid's orifice can introduce measuring errors

- the fotos were taken with the following equipment (upper trace = input, lower trace = output signal):

pulse generators Avtech AVMH-C (tr ~ 300ps) and Tektronix PG2012 (t_r ~ 800 ps)
oszillocope Tektronix 7904 with 2 x vertical amp. 7A29
coupling into the transformer via 2x DN 100 with BNC-jacks and
central inner conductor
coax attenuators Suhner -6 dB/1 GHz on input and output connector
to dampen signal reflections at the impedance transitions