

SF39C

Features:

Vestigial sideband filter with sound

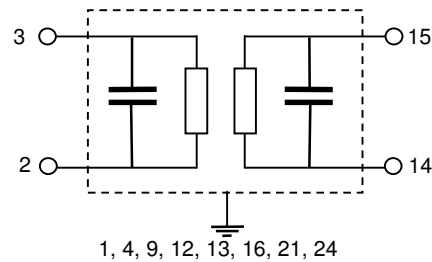
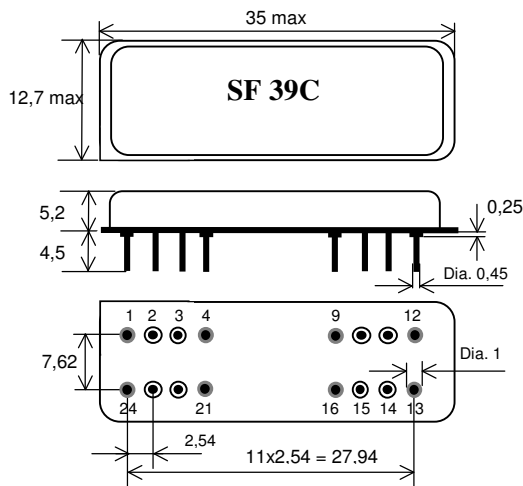
Constant group delay, Standard metal package DIP24

1. Measurement Conditions:

RF power	10 dBm
Reference Temperature	45 (23) °C
Operating Temperature (T_n)	45 °C
Ambient Temperature (T_A)	23 °C
Terminating source impedance in f_c (Z_S):	50 0 Ω pF
Terminating load impedance in f_c (Z_L):	50 0 Ω pF

2. Package and pin configuration

pin grid 2,54 mm (All dimensions in mm)



Pin 3 **Input**
Pin 2 Input RF Return
Pin 15 **Output**
Pin 14 Output RF Return
Pin 1, 4, 9, 12, 13, 16, 21, 24 –
Package Ground
Pin 10, 11, 22, 23 – Dummy

3. Commentary:

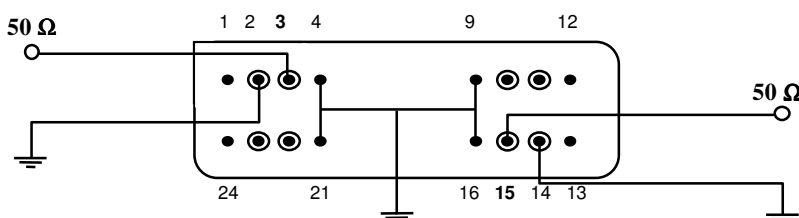
Reference level for the relative attenuation a_{rel} of the **SC39C** is the minimum of the pass band attenuation a_{min} . The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e . The reference frequency f_c is the arithmetic mean value of the upper and lower frequencies at the **10 dB** filter attenuation level relative to the insertion loss a_e . The bandwidth shift of the filter in the operating temperature (T_O) is included in the production tolerance scheme.

4. Electrical Characteristics:

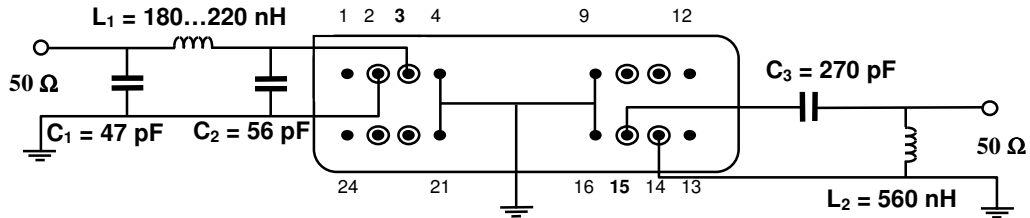
Data		minimum	typical	maximum	unit
Insertion loss at operating temperature	a_e		24,3	26	dB
Centre frequency at ambient temperature	f_c	-0,02	36,320	+ 0,02	MHz
Centre frequency at operating temperature	f_o	-0,02	36,275	+ 0,02	MHz
Pass band at ambient temperature	PB	$f_c - 3,125$		$f_c + 3,125$	MHz
Amplitude ripple in PB (p-p)			0,4...0,5	max. 1,0	dB
Bandwidth at operating temperature:					
1 dB - band width	B_{1dB}	6,250	6,460	7,750	MHz
3 dB - band width	B_{3dB}	6,450	6,690		MHz
10 dB - band width			7,055		MHz
20 dB - band width			7,320		MHz
30 dB - band width			7,490		MHz
36 dB - band width	B_{36dB}		7,600		MHz
40 dB - band width			7,700	MHz	
Relative attenuation at operating (ambient) temperature in :	a_{rel}				
$f_o - 3,125$ MHz ... $f_o + 3,125$ MHz			0,4...0,5	1	dB
$f_o - 3,225$ MHz ... $f_o + 3,225$ MHz			1,6...2,0	3	dB
$f_o - 3,875$ MHz		36	45		dB
$f_o + 3,875$ MHz		36	38		dB
Lower sidelobe					
1,000 ... 26,000 (1,045 ... 26,045) MHz		46	55...52		dB
26,000 ... 28,275 (26,045 ... 28,320) MHz		45	47...52		dB
28,275 ... 31,900 (28,320 ... 31,945) MHz		40	42		dB
31,900 ... 32,100 (31,945 ... 32,145) MHz		50	55...60		dB
32,100 ... 32,400 (32,145 ... 32,445) MHz		40	47		dB
Upper sidelobe					
40,150 ... 40,300 (40,195 ... 40,345) MHz		36	39...47		dB
40,300 ... 40,500 (40,345 ... 40,545) MHz		45	48...60		dB
40,500 ... 45,800 (40,545 ... 45,845) MHz		40	43...44		dB
45,800 ... 66,000 (45,845 ... 66,045) MHz		46	52...47		dB
Group delay , mean value in 38,11 ... 39,71 (38,12 ... 39,72) MHz	τ		2,61		μs
Group delay ripple (p-p) in: 33,15 ... 39,40 (33,195 ... 39,445) MHz 32,95 ... 39,60 (32,995 ... 39,645) MHz	$\Delta\tau$		65...75 80	90 100	ns ns
Deviation from linear phase (p-p) in: 32,95 ... 39,60 (32,995 ... 39,645) MHz	$\Delta\phi$		3,5°...4°		deg
Triple transit attenuation compared to main signal:	TTS		54		dB
Crosstalk:	Cr		45		dB
Reflected wave signal suppression 1,50 ms ... 4,90 ms after main pulse	Refl		60		dB
Temperature coefficient of frequency	Tc_f		-18...-20		ppm/K
Operable temperature range	OTR	-40		+ 85	°C
Storage temperature range	STR	-40		+ 85	°C

5. Matching Network

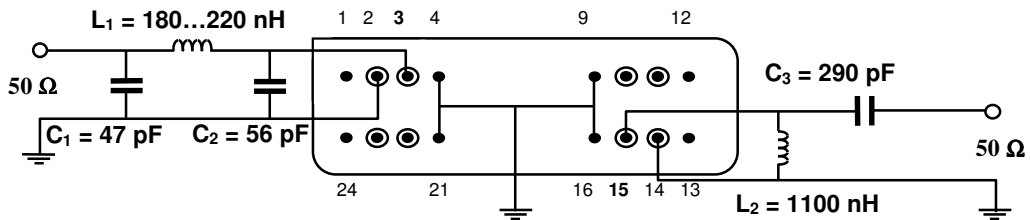
5.1. 50 x 50 Ω - Matching network (scheme 1):



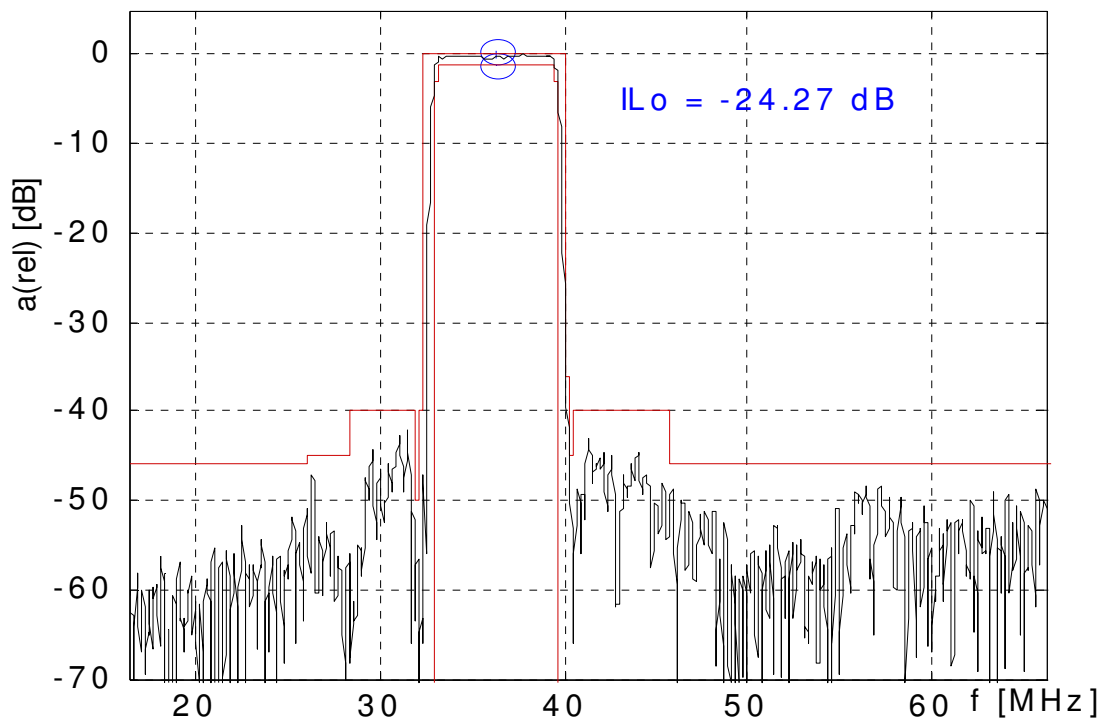
5.2. 50 Ω and matching network (scheme 2):

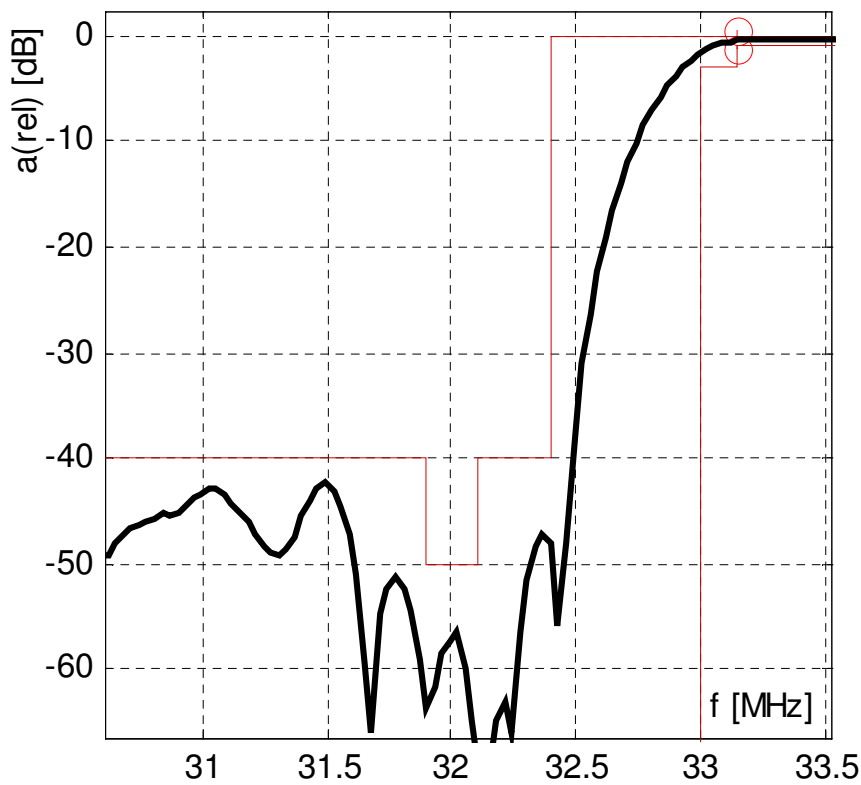
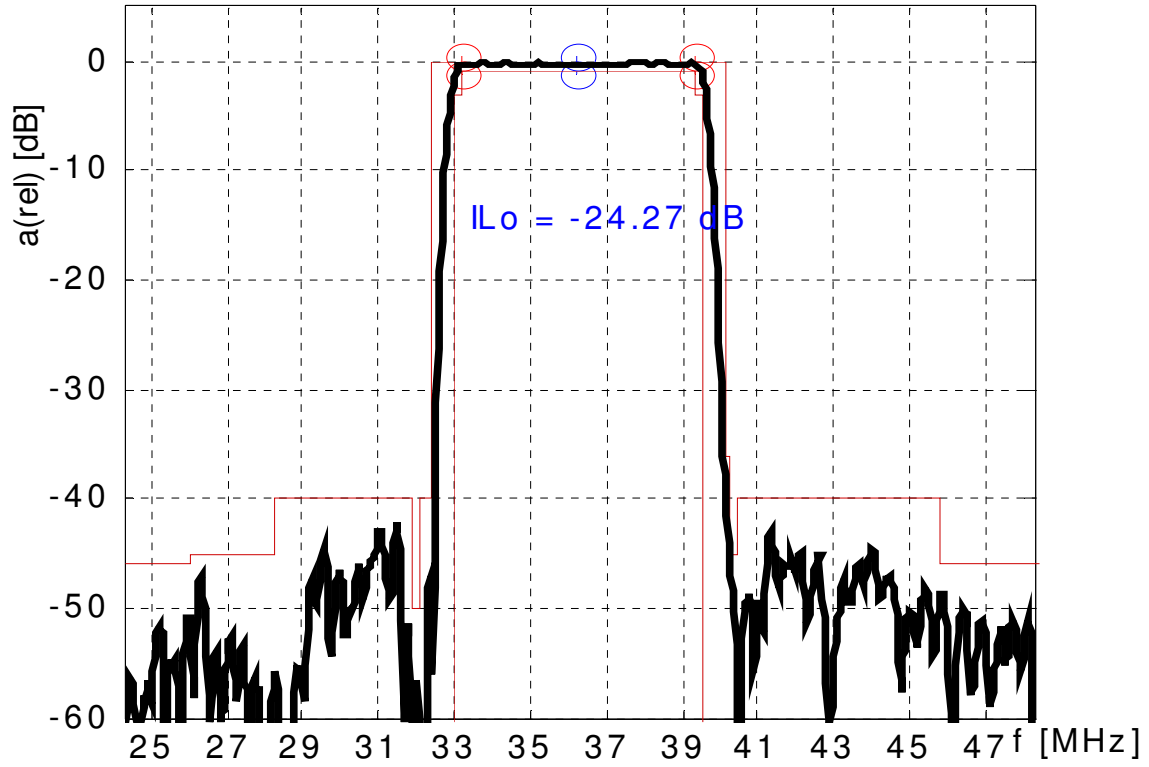


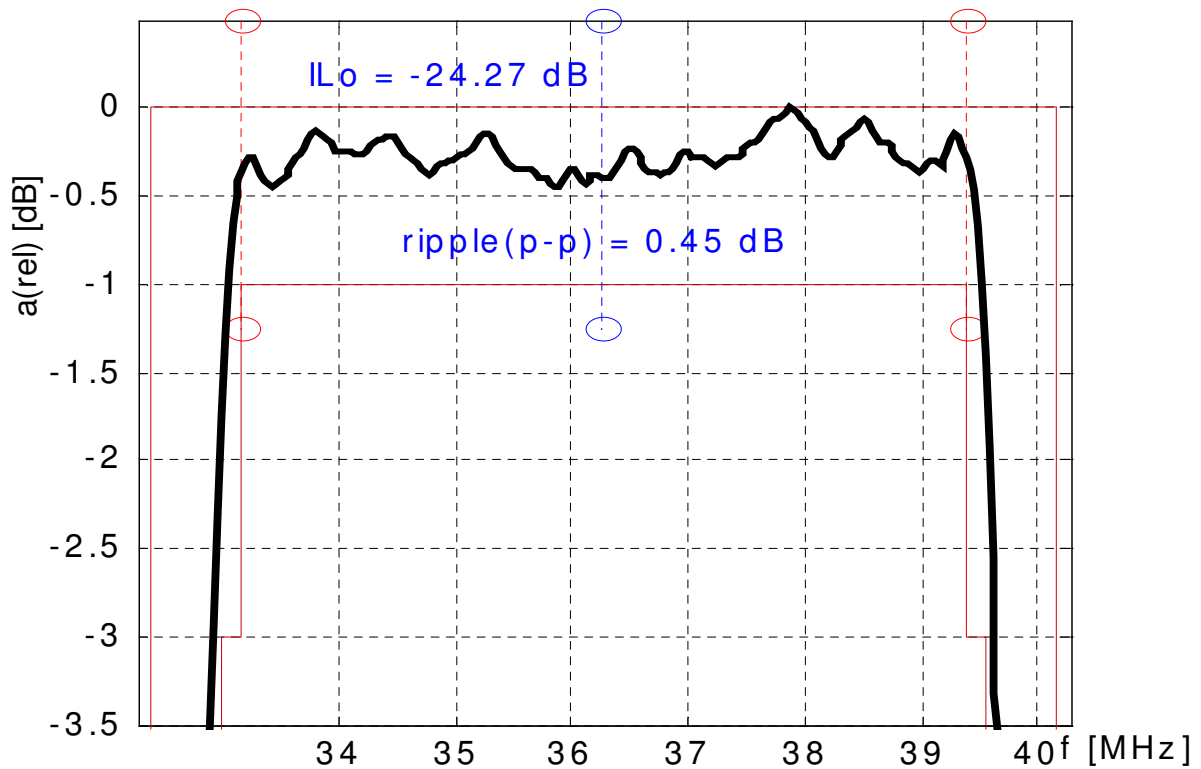
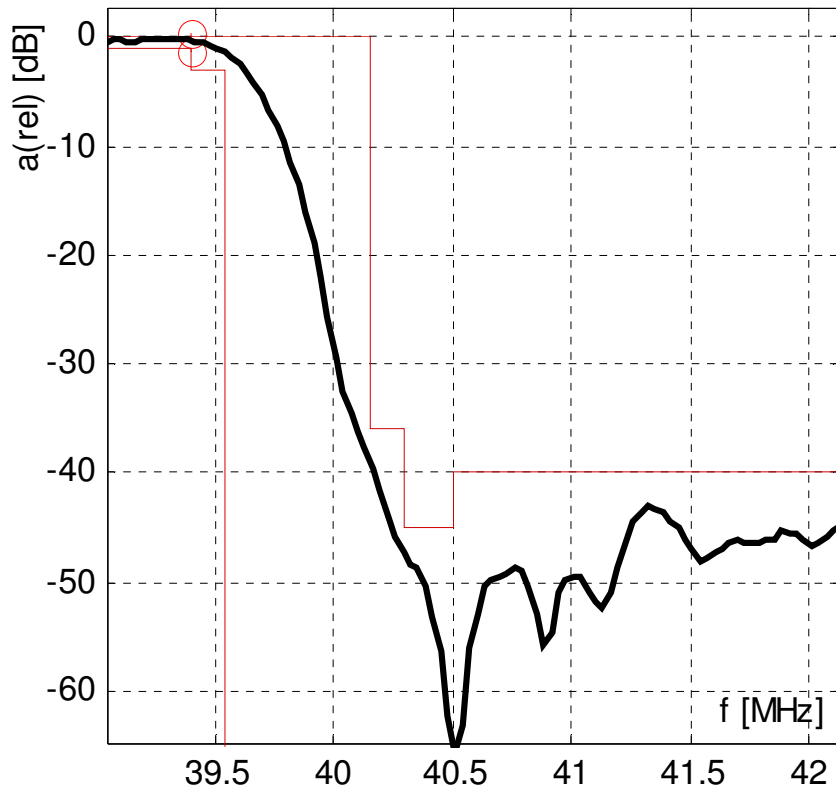
5.3. 50 Ω and matching network (scheme 3):

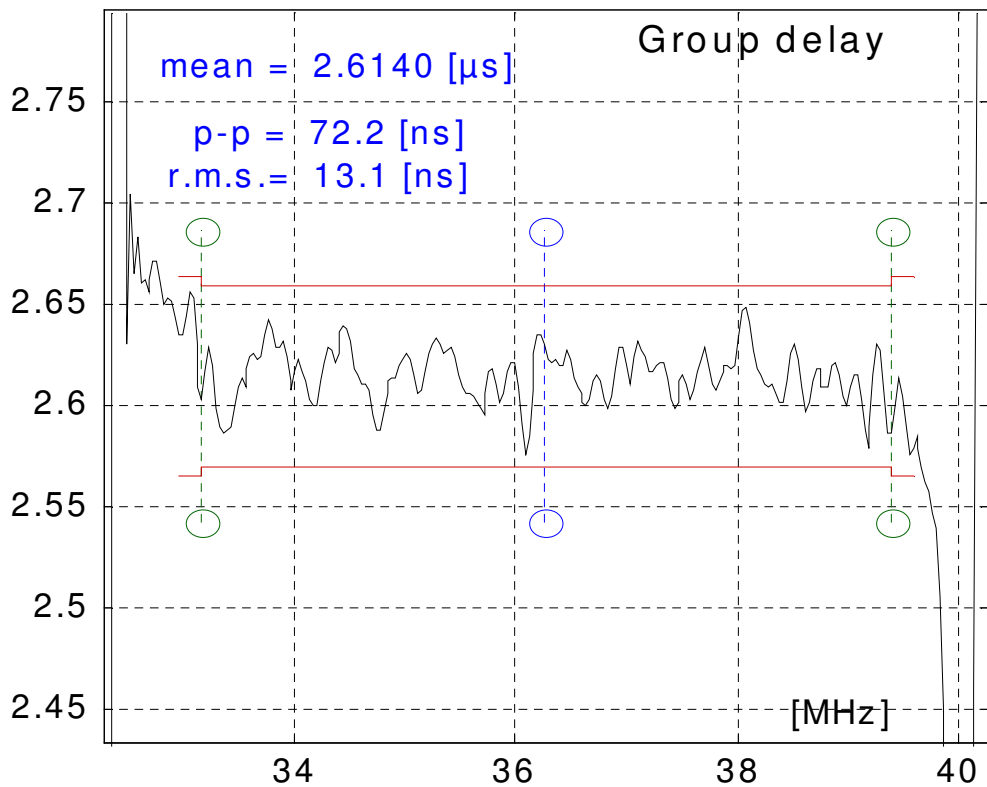
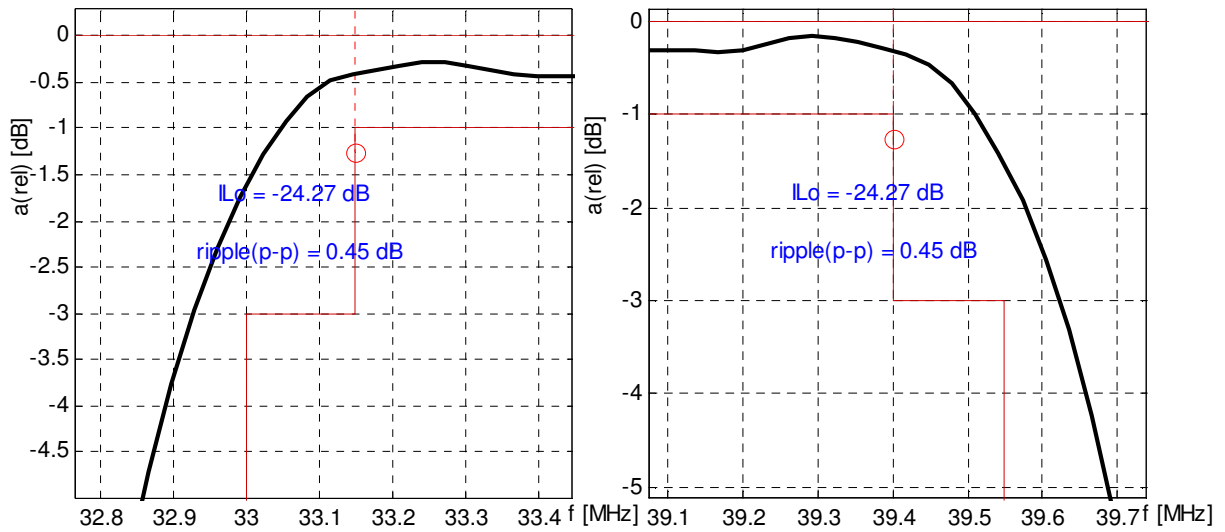


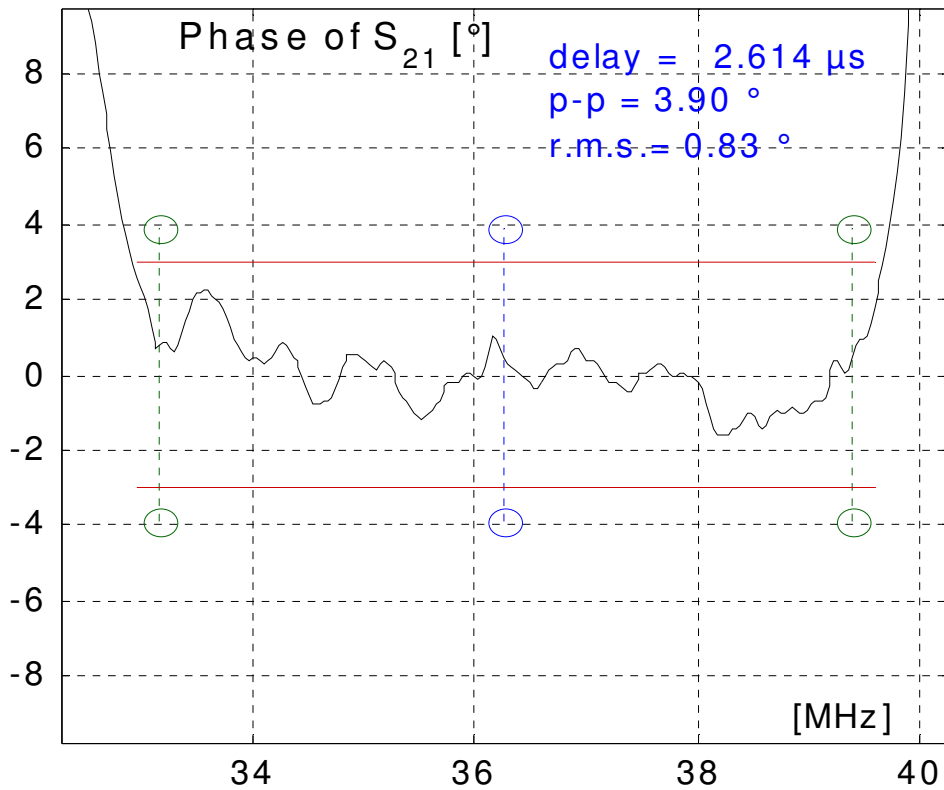
6. Frequency response











Time domain response

