VI TELEFILTER — Filter specification — TFS 150Y - 1/2

1. Measurement condition **Package, pin connection and 50 Ω matching network** (see sheet 2.)

Ambient temperature T_A: 23 °C
Input power level: 0 dBm
Typical terminating impedances in f_N: for input: 233 Ω | -10 pF. (see sheet 2.§**4**.)
for output: 1260 Ω | -3 pF. (see sheet 2.§**4**.)

2. Characteristics

Remark:
Reference level for the relative attenuation a_{rel} of the **TFS 150Y** 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 nominal frequence f_N is fixed at **150,0 MHz** without tolerance or limit. The reference frequence f_C is the arithmetic mean value of the upper and lower frequencies at the **32 dB** filter attenuation level relative to the insertion loss a_e. The temperature coefficient of frequency Tc_f is valid both for the reference frequency f_C and the frequency response of the filter in the operating temperature range.

Data		typ. value		tolerance / limit	
Insertion loss (Reference level)	a_e	34,3	dB	max 35	dB
Nominal frequency	f_N	-		150,0	MHz
Pass band				f_N-6,05 MHz ... f_N+6,05...MHz	
Amplitude ripple (p-p): f_N ... f_N ± 6,05 MHz		0,6	dB	max 0,8	dB
1 dB - band width		12,48	MHz		
1,5 dB - band width		12,53	MHz		
2 dB - band width		12,57	MHz	min 12,5	MHz
3 dB - band width		12,64	MHz		
10 dB - band width		12,90	MHz		
32 dB - band width		13,23	MHz	max 13,3	MHz
Relative attenuation a_{rel}					
f_N	f_N ± 6,05 MHz		-	max 0,8	dB
f_N ± 6,05 MHz	f_N ± 6,25 MHz		-	max 2	dB
f_N ± 6,65 MHz	f_N ± 10,0 MHz	35....48	dB	min 32...45	dB
In the frequency range f_C ± 6,65 MHz ... f_C ± 10,0 MHz the type of the LIMIT LINE is a SLOPING LINE (SL).					
f_N ± 10 MHz	f_N ± 25 MHz	48	dB	min 45	dB
f_N ± 25 MHz	f_N ± 50 MHz	55 ... 60	dB	min 35	dB
f_N ± 50 MHz	f_N ± 100 MHz	60	dB		
Group delay		2,89	µs	max 5	µs
Group delay ripple in pass band (p-p):		± 40	ns	± max 100	ns
Deviation from linear phase (p-p) f_N ... f_N ± 6,25 MHz		3,3°			
Triple transit attenuation compared to main signal		60	dB		
Input/Output return loss with matching network (S11/S22):		min(2,5/3,5)	dB		
Crosstalk		55	dB		
Substrate material		Quartz			
Frequency inversion temperature (T_o)		10	°C		
Temperature coefficient of frequency (Tc_f)		-0,044	ppm/K²	-	
Frequency deviation of f_C over temperature T : *)		Δf_C(Hz) = Tc_f(ppm/K) x (T - T_o)² x f_{To}(MHz)			
Operating temperature range		-20 °C ... + 75 °C			
Storage temperature range		- 40 °C ... + 85 °C			
Input power level		-		max. + 10	dBm
Permissible DC voltage	V_{DC}			12	V
Permissible DC voltage	V_{pp}			10	V

***)** f_{To} is reference frequence f_C at frequency inversion temperature (T_o)

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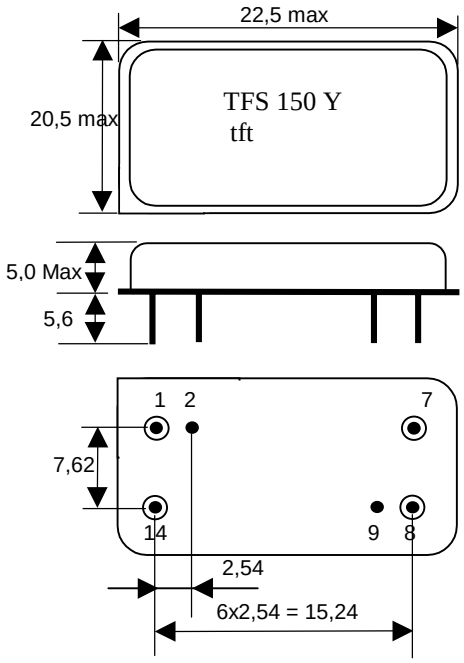
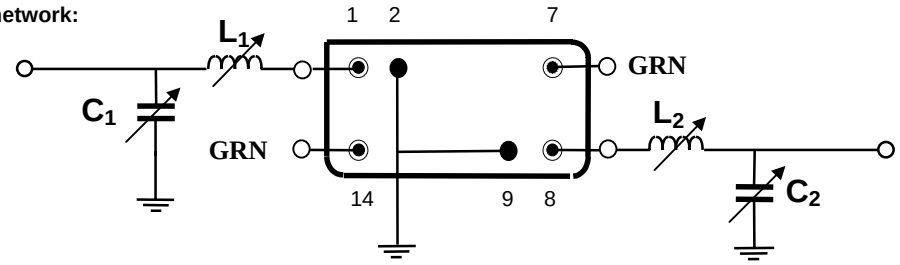
3. Package



Pin **1**	**Input**
Pin 14	Input RF Return
Pin **8**	**Output**
Pin 7	Output RF Return
Pin 2,9	Pakage Ground

4. 50 Ω matching network:



L_1 ≈ 100 nH	C_1 ≈ 18 pF.
L_2 ≈ 400 nH	C_2 ≈ 18 pF.

These values will be influenced by your board design.

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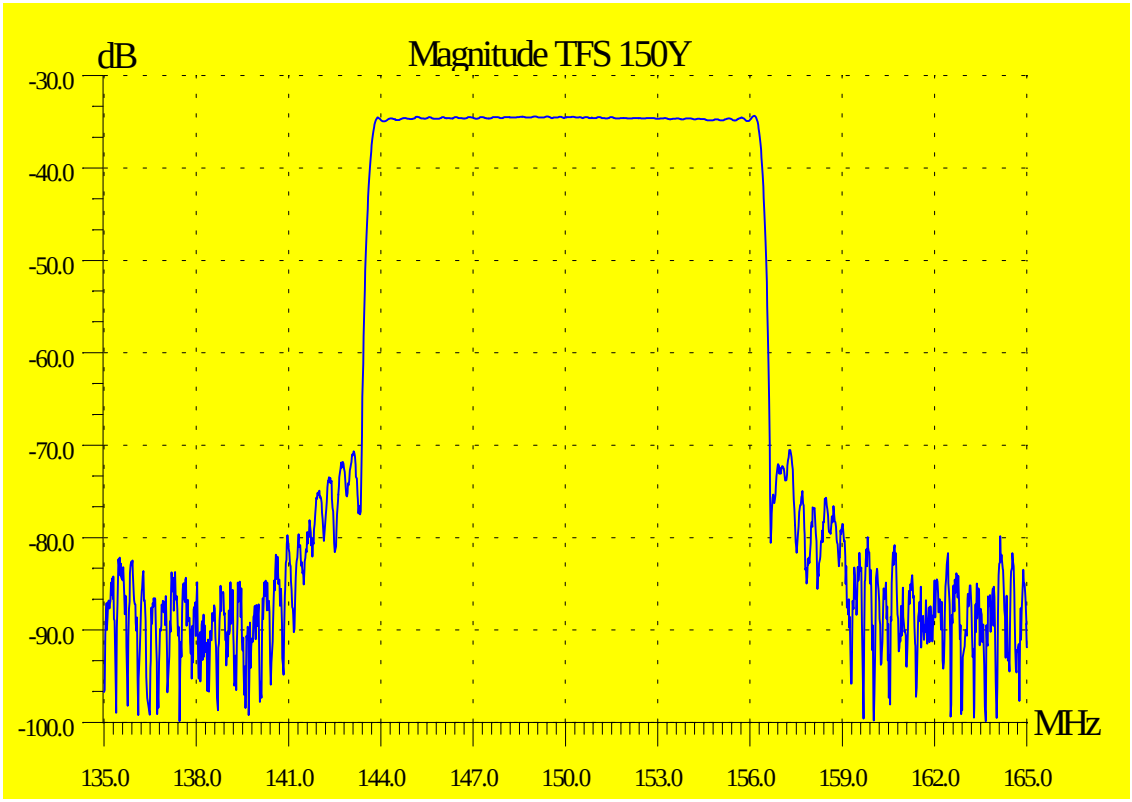

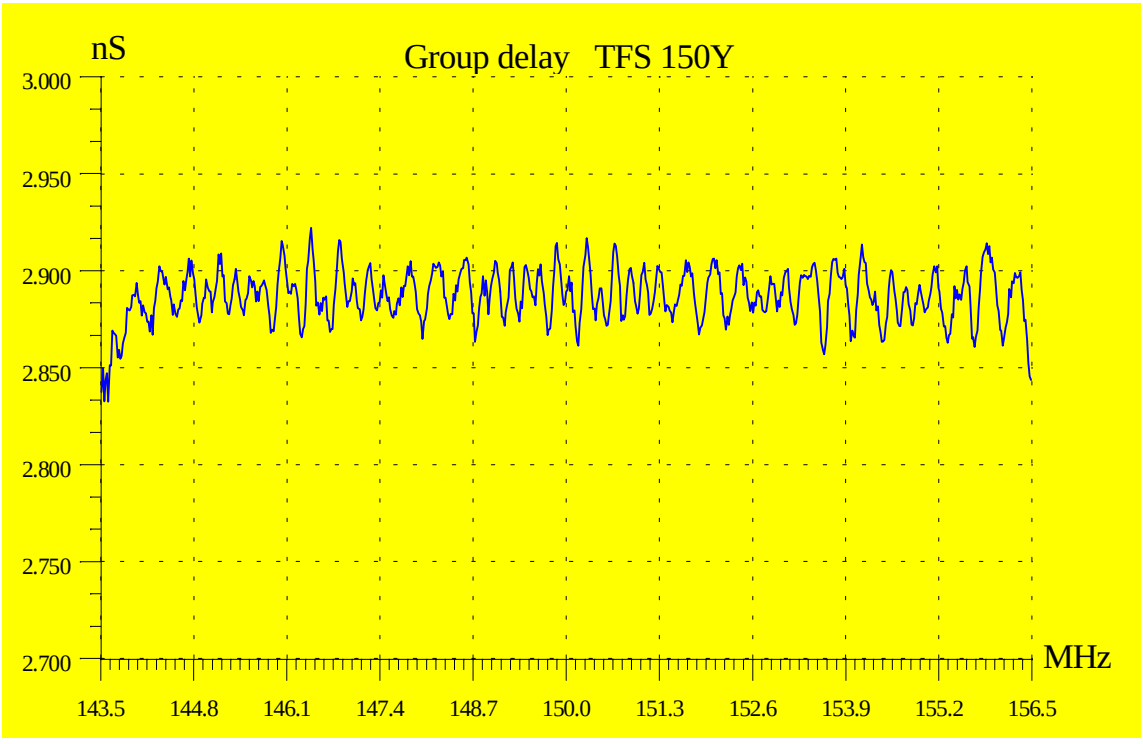

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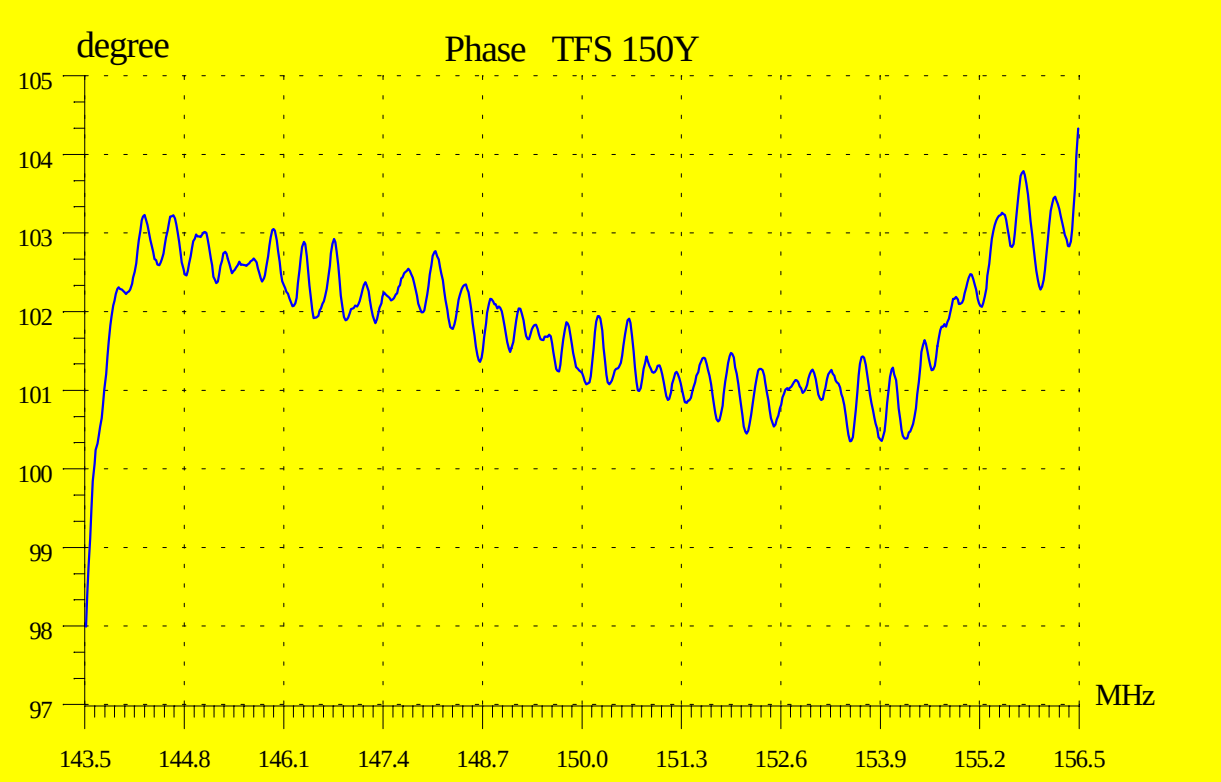

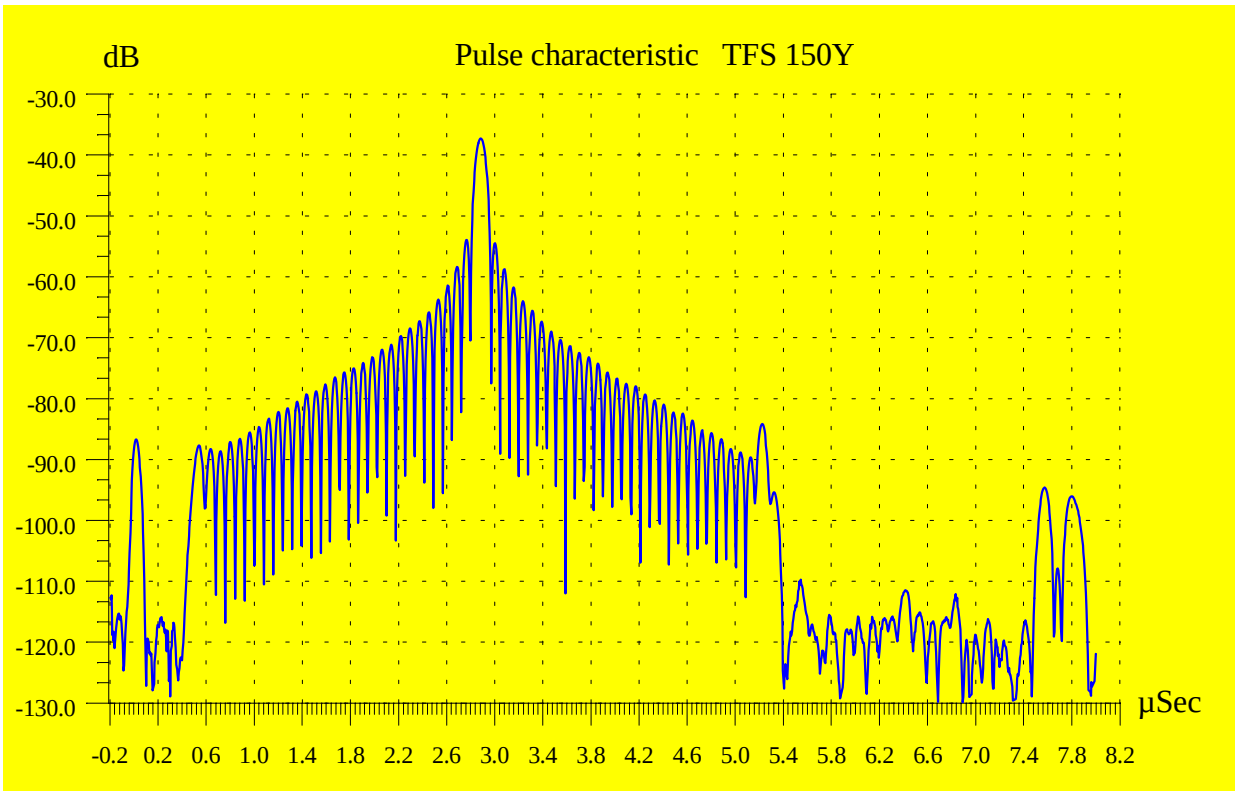

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