1. Measurement condition

Ambient temperature T_A:	25 °C	
Input power level:	0 dBm.	
Terminating impedances at f_C:	for input:	50 Ω | 0 pF.
	for output:	50 Ω | 0 pF.

2. Characteristics

Remark:
The insertion loss a_e is defined as the insertion loss at the nominal frequency f_N . Reference level for the relative attenuation a_{rel} of the **TFS 44B** is the insertion loss. The reference frequency f_C is the arithmetic mean value of the upper and lower frequencies at the **3 dB** filter attenuation level relative to the insertion loss a_e. The temperature coefficient of frequency Tc_f is valid both for the centre frequency f_C and the frequency response of the filter in the operating temperature range.

Data	**typical values**	**tolerance / limit**
Insertion loss (Reference level) a_e	19,8 dB	max. 22 dB
Nominal frequency f_N		44 MHz
Centre frequency f_C	44 MHz	
Pass band (PB) :		f_C ... f_C ± 2,5 MHz
Amplitude ripple in PB (p-p) :	0,35 dB	max. 0,55 dB
Bandwidth at ambient temperature**:**		
0,55 dB - band width	5,52 MHz	min. 5,0 MHz
1 dB - band width	5,72 MHz	
3 dB - band width	6,07 MHz	min. 6,0 MHz
20 dB - band width	6,97 MHz	
42 dB - band width	7,40 MHz	max. 7,67 MHz
Relative attenuation a_{rel}		
f_N ... f_N ± 2,50 MHz	0,35 dB	max. 0,55 dB
f_N ± 2,50 MHz ... f_N ± 3,0 MHz	< 2,7 dB	max. 3 dB
f_N ± 3,835 MHz ... f_N ± 20 MHz	43...50 dB	min. 42 dB
Group delay (mean value in PB)	2,1 µs	max. 3 µs
Group delay ripple in f_N ... f_N ± 2,1 MHz (p-p) *)	55 ns	max. 75 ns
Deviation from linear phase in f_N ... f_N ± 2,1 MHz (p-p)	2° (r.m.s. 0,7°)	max. 3,5°
Triple transit attenuation compared to main signal	47 dB	
Crosstalk	65 dB	
Temperature coefficient of frequency (Tc_f)	- 75 ppm/K	
Frequency deviation of f_N over temperature :	Δf_C(Hz) = Tc_f(ppm/K) x (T - T_A) x f_N (MHz)	
Operating temperature range		25 °C
Storage temperature range		- 25 °C ... + 85 °C

*) measured with smoothing aperture of 78,75 kHz.

Generated: **Dunzow W.P.**

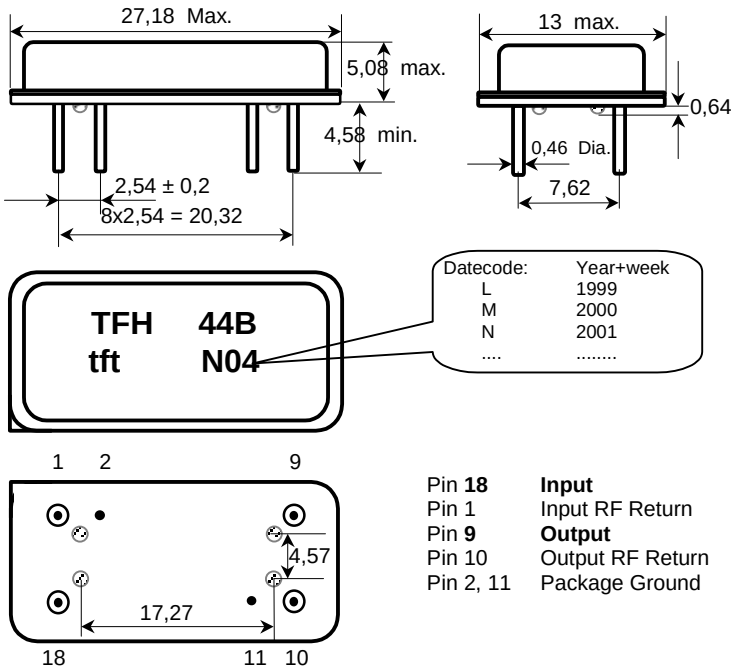
Checked/Approved: **Dr. Bert Wall**

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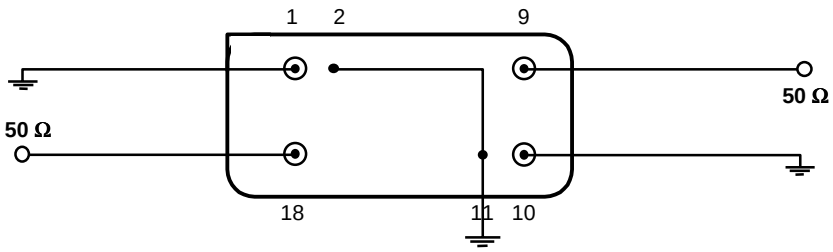
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3. Package : (All dimensions in mm)
pin grid 2,54 mm



Pin **18** **Input**
Pin 1 Input RF Return
Pin **9** **Output**
Pin 10 Output RF Return
Pin 2, 11 Package Ground

4. 50 Ω matching networks :



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5. Stability characteristics :

After the following tests the filter shall meet the whole specification:

1. Shock:	500g, 18 ms, half sine wave, 3 shocks each plane; DIN IEC 68 T2 - 27
2. Vibration:	10 Hz to 500 Hz, 0,35 mm or 5g respectively, 1 octave per min, 10 cycles per plan, 3 plans; DIN IEC 68 T2 - 6
3. Damp heat: (cycle)	25 °C to 55°C / 95% r.H. / 10 cycles DIN IEC 68 - 2 – 30 Db
4. Resistance to solder heat (reflow):	max. 2 times reflow process; for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

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6. Air reflow temperature conditions :

1st and 2nd air reflow profile

Name:	pre-heating periods	main-heating periods	peak temperature
Temperature:	150 °C - 170 °C	over 200 °C	255 °C ± 5 °C
Time:	60 sec. - 90 sec.	20 sec. - 25 sec.	

Air reflow profile

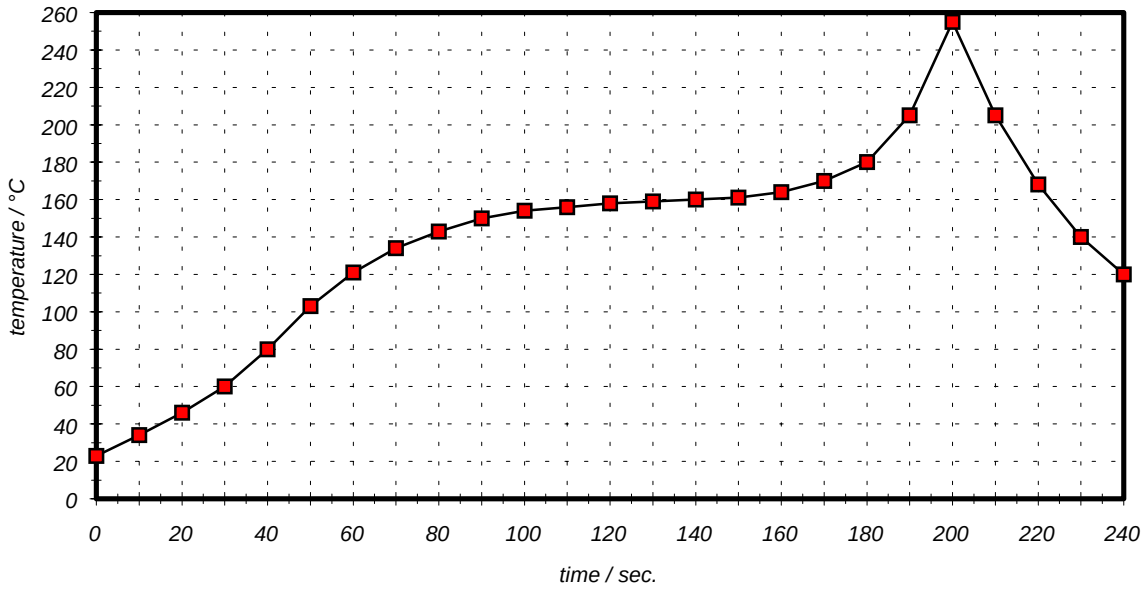


Table for temperature vs. time during the air reflow process

Tolerance of temperatures: ± 5 °C

time / sec.	temperature / °C	time / sec.	temperature / °C
0	23	140	160
10	34	150	161
20	46	160	164
30	60	170	170
40	80	180	180
50	103	190	205
60	121	195	230
70	134	200	255
80	143	205	230
90	150	210	205
100	154	215	180
110	156	220	165
120	158	230	140
130	159	240	120

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7. History :

Version	Reason of Changes	Name	Date
1.0	Generate extended filter specification.	Dunzow W.	13.03.2001

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