

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 44A** 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 T_C 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) :		$f_C \dots f_C \pm 2,5$ 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}		
$f_N \dots f_N \pm 2,50$ MHz	0,35 dB	max. 0,55 dB
$f_N \pm 2,50$ MHz ... $f_N \pm 3,0$ MHz	< 2,7 dB	max. 3 dB
$f_N \pm 3,835$ MHz ... $f_N \pm 20$ MHz	43...50 dB	min. 42 dB
Group delay (mean value in PB)	2,1 μ s	max. 3 μ s
Group delay ripple in $f_N \dots f_N \pm 2,1$ MHz (p-p) *)	55 ns	max. 75 ns
Deviation from linear phase in $f_N \dots f_N \pm 2,1$ 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 (T_C)	- 75 ppm/K	
Frequency deviation of f_N over temperature :	$\Delta f_C(\text{Hz}) = T_C(\text{ppm/K}) \times (T - T_A) \times f_N (\text{MHz})$	
Operating temperature range		25 °C
Storage temperature range		- 25 °C ... + 85 °C

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

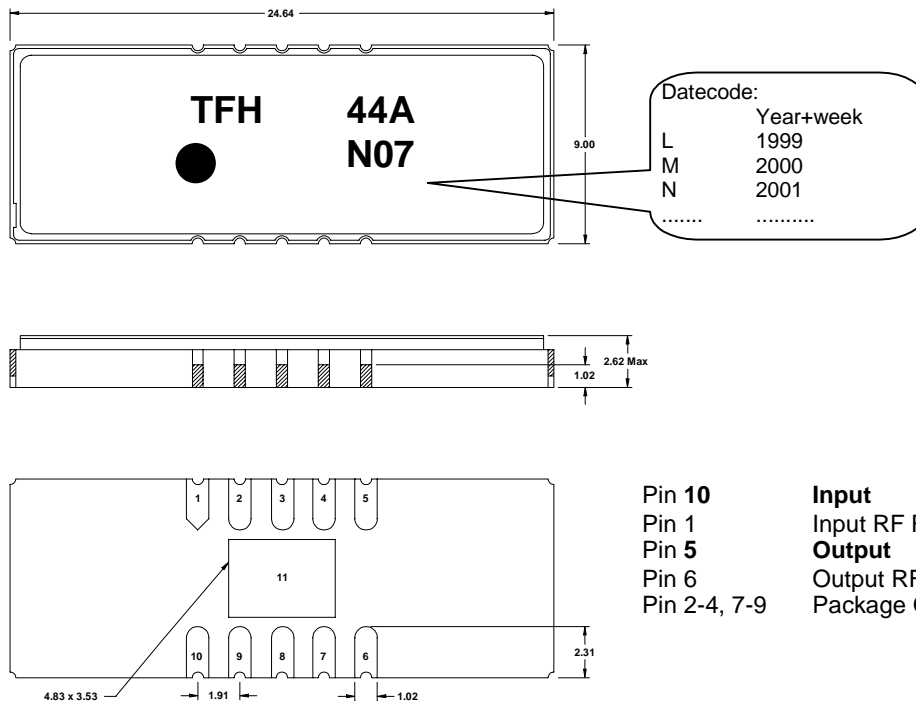
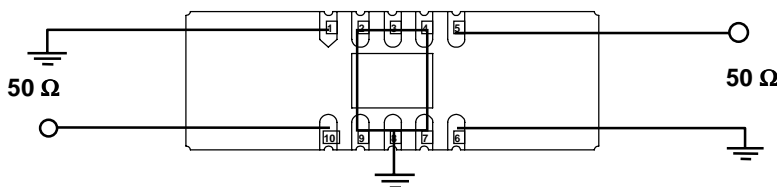
Generated: _____ **Dunzow W.P.**

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

VI TELEFILTER
 Potsdamer Straße 18
 D 14 513 TELTOW / Germany
 Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
 E-Mail: tft@telefilter.com

Vectron International, Inc.
 267 Lowell Road
 Hudson, NH 03051 / USA
 Tel: (603) 598-0070 Fax: (603) 598-0075
 Email: vti@vtinh.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

3. Package, pin grid 2,54 mm (All dimensions in mm)**4. 50 Ω matching networks :**

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: 25 °C to 55°C / 95% r.H. / 10 cycles
(cycle) 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;

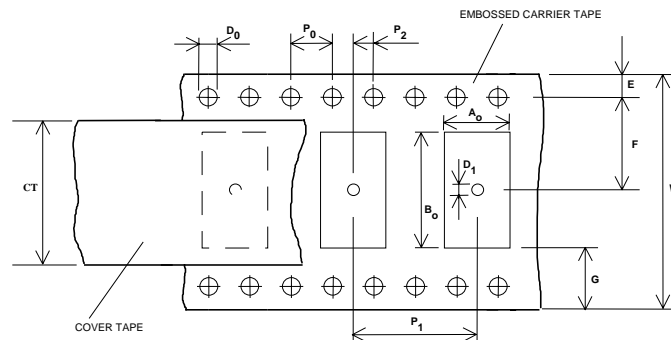
6. Packing :

Tape & Reel: DIN IEC 286 - 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

max. pieces of filters per reel:	1000
reel of empty components at start:	min 300 mm
reel of empty components at start including leader:	min 500 mm
trailer	min 300 mm

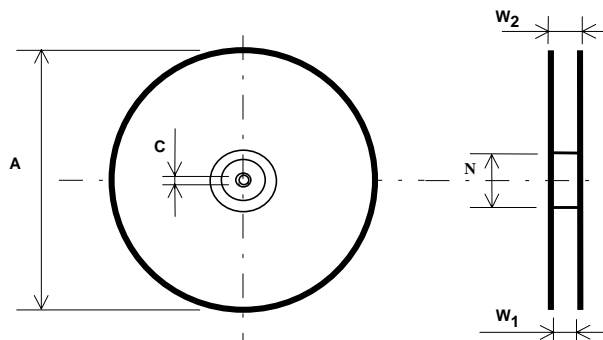
Tape (all dimensions in mm)

W	: 44	± 0,3
Po	: 4	± 0,1
Do	: 1,5	+ 0,1
E	: 1,75	± 0,1
F	: 20,25	± 0,05
G (min)	: 0,75	
P2	: 2	± 0,05
P1	: 16	± 0,1
D1(min)	: 2,0	
Ao	: 9,3	± 0,1
Bo	: 24,9	± 0,1
CT	: 38	± 0,2



Reel (all dimensions in mm):

A	: 330
W1	: 46
W2 (max)	: 50
N (min)	: 100
C	: 13 ± 0,2



VI TELEFILTER
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

Vectron International, Inc.
267 Lowell Road
Hudson, NH 03051 / USA
Tel: (603) 598-0070 Fax: (603) 598-0075
Email: vti@vtinh.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

7. 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

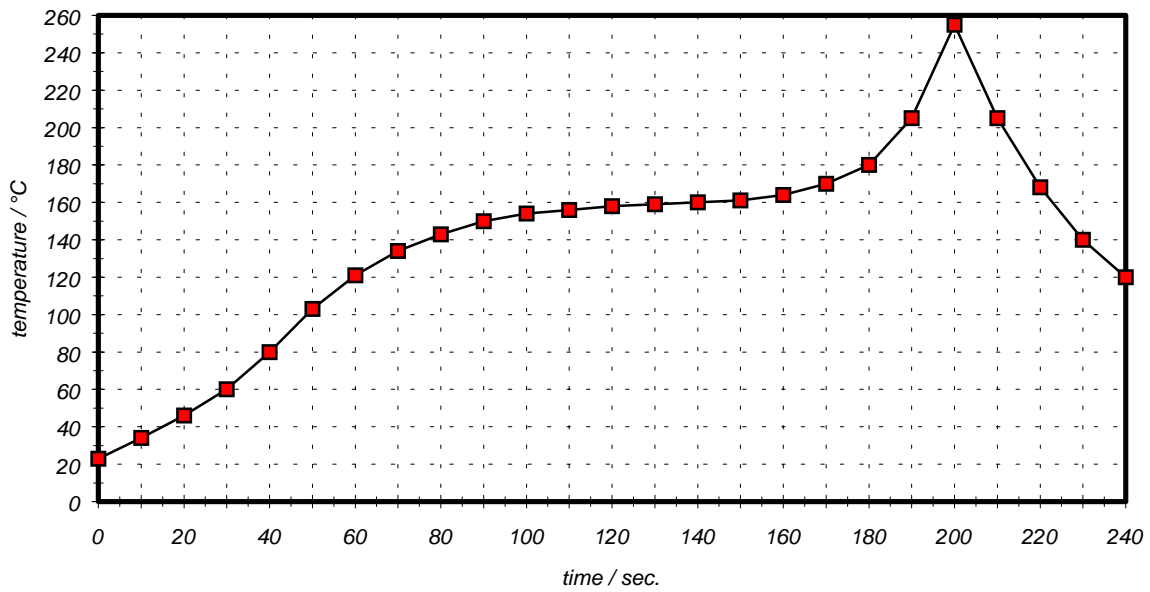


Table for temperature vs. time during the air reflow process

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

8. History :

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