

VI TELEFILTER Filter Specification TFS 125C 1/5

Measurement condition

Ambient temperature T_A : 23 °C
 Input power level: 0 dBm
 Terminating impedances at f_c :
 input: 605 Ω || -11 pF
 output: 620 Ω || -11 pF

Characteristics

Remark:

Reference level for the relative attenuation a_{rel} of the **TFS 125C** is the maximum of the pass band attenuation a_{max} . The maximum of the pass band attenuation a_{max} is defined as the insertion loss a_e . The centre frequency f_c is the arithmetic mean value of the upper and lower frequencies at the 1 dB filter attenuation level relative to the insertion loss a_e . The nominal frequency f_N is fixed on **125 MHz** without tolerance. The given values for the relative attenuation a_{rel} and for the group delay ripple have to be reached at the frequencies given below also if the centre frequency f_c is shifted due to the temperature coefficient of frequency TC_f in the operating temperature range and due to a production tolerance for the centre frequency f_c .

Data	typ. value	tolerance / limit
Insertion loss (Reference level) a_e		max. 8,0 dB min. 5,0 dB
Nominal frequency f_N	-	125,0 MHz
Centre frequency f_c	125,0 MHz	
dB Passband ripple	within $\pm$ 150 kHz	min. 1,25 dB
Relative attenuation a_{rel}		
f_N $f_N \pm 150$ KHz	-	max. 1,25 dB
$f_N \pm 0,4$ MHz... $f_N \pm 0,6$ MHz	-	min. 2,0 dB *)
$f_N \pm 0,6$ MHz... $f_N \pm 1,2$ MHz	-	min. 8,0 dB
$f_N \pm 1,2$ MHz... $f_N \pm 1,8$ MHz	-	min. 20,0 dB
$f_N \pm 1,8$ MHz... $f_N \pm 3,4$ MHz	-	min. 25,0 dB
$f_N \pm 3,4$ MHz... $f_N \pm 9,5$ MHz	-	min. 30,0 dB
$f_N \pm 9,5$ MHz... $f_N \pm 13$ MHz	-	min. 43,0 dB
$f_N \pm 13$ MHz... $f_N + 450$ MHz	-	min. 55,0 dB
Group delay **)		max. 1,7 μ s
Group delay ripple **) within $\pm$ 150 kHz		max. 150,0 ns
VSWR:		max. 2,3: 1
IP3 ***)		min. 60,0 dB
Operating temperature range		- 10 °C ... + 85 °C
Temperature coefficient of frequency (TC_f) ****)	T.B.D	
Frequency inversion temperature T_o	T.B.D	
Input power level:		max. 10,0 dBm

*) The rejection is relative to the point of maximum insertion at centre frequency

**) measured with smoothing; smoothing aperture $\leq$ 30 KHz

***) modulation signals: f_N and $f_N \pm 28$ MHz each of 10 dBm

****) $\Delta f_c(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T_o - T_A)^2 \times f_{CAT}(\text{MHz})$

Generated: Sabah

Checked/Approved:

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

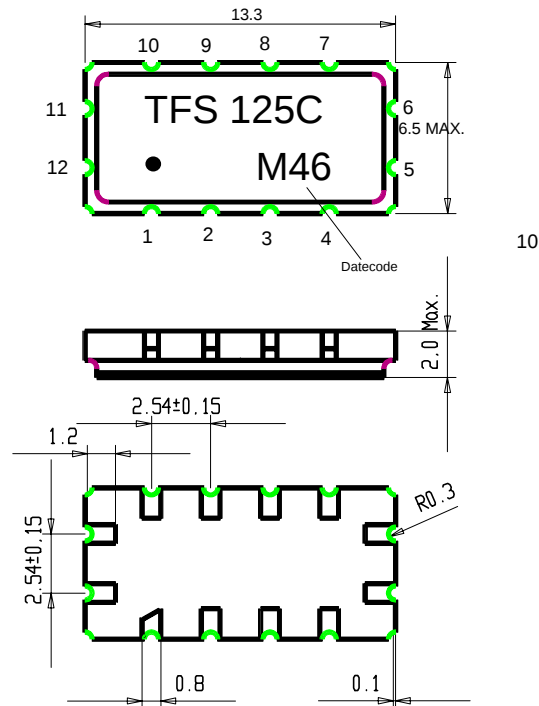
Vectron International, Inc.
 267 Lowell Road
 Hudson, NH 03051 / USA
 Tel: (603) 598-0070 Fax: (603) 598-0075
 E-Mail: vti@vtinh.com

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VI TELEFILTER**Filter Specification****TFS 125C****2/5****Construction and pin connection**

(All dimensions in mm)



1	Ground
2	Ground
3	Ground
4	Ground
5	Output RF Return
6	Output
7	Ground
8	Ground
9	Ground
10	Ground
11	Input
12	Input RF Return

Date code: Year+week

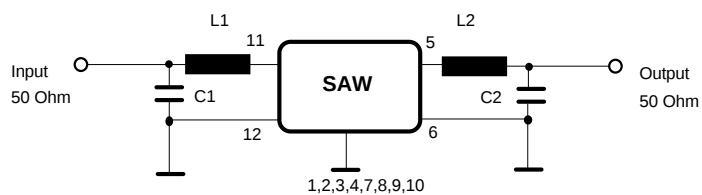
K 1998

L 1999

M 2000

N 2001

.....

50 Ω matching network:**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****E-Mail: vti@vtinh.com**

VI TELEFILTER**Filter Specification****TFS 125C****3/5****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;

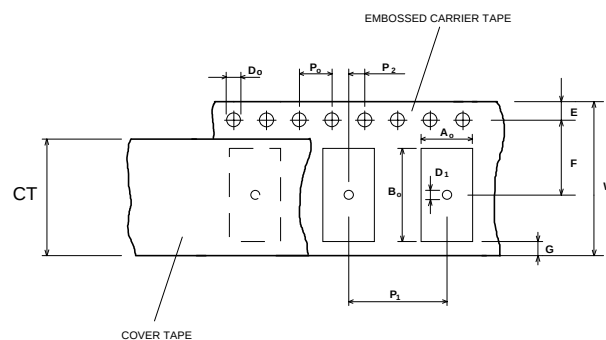
Packing

Tape & Reel: 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:
Reel of empty components at start:
Reel of empty components at start including leader:
Trailer

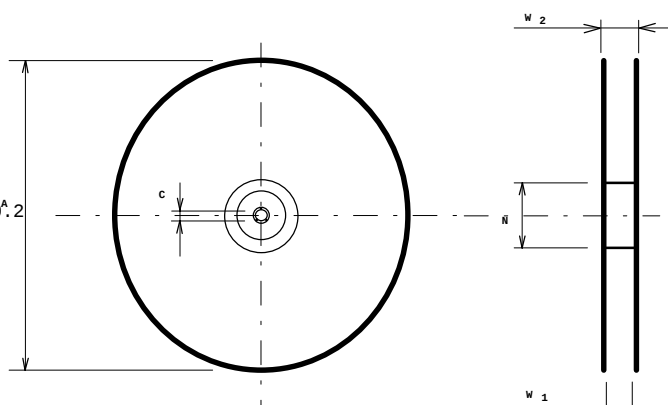
1700
min 300 mm
min 500 mm
min 300 mm

Tape (all dimensions in mm)

W : 24 ± 0,3
Po : 4 ± 0,1
Do : 1,5 ± 0,1
E : 1,75 ± 0,1
F : 11,5 ± 0,1
G (min) : 0,60
P2 : 2 ± 0,1
P1 : 12 ± 0,1
D1(min) : 1,5
Ao : 7,1 ± 0,2
Bo : 13,9 ± 0,2
CT : 21,5 ± 0,1

**Reel (all dimensions in mm):**

A : 330
W1 : 24,40 +2,0
W2 (max) : 30,4
N (min) : 60
C : 13 ± 0,5 / -0,2



The minimum bending radius is 45 mm. The mounting surface of the filters faces the bottom side of the embossed carrier tape. The marking of the filters is able to read if the view is directed on the upper side of the carrier tape with the sprocket holes on the left side of the tape.

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VI TELEFILTER**Filter Specification****TFS 125C****4/5****Air reflow temperature conditions**

1st and 2nd air reflow profile

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

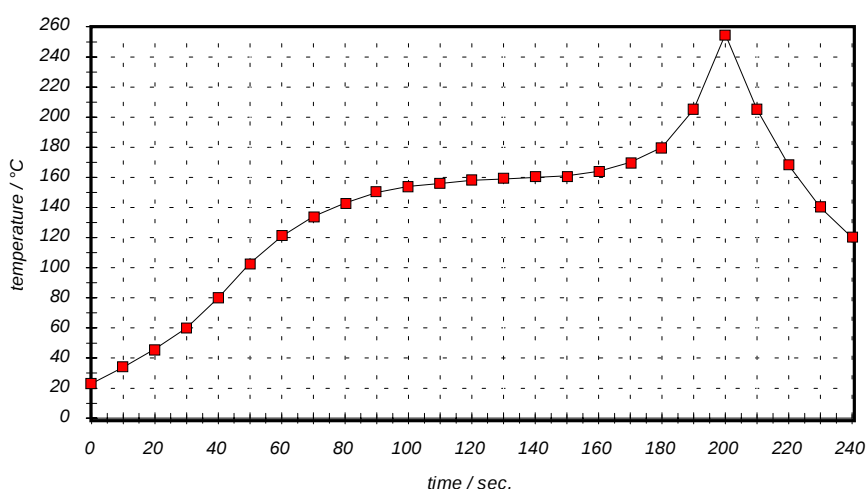
Chip-mount air reflow profile

Table for temperature vs. time during the air reflow process

Tolerance of temperatures: ± 5 °C

<u>time / sec.</u>	<u>temperature / °C</u>	<u>time / sec.</u>	<u>temperature / °C</u>
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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VI TELEFILTER**Filter Specification****TFS 125C****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- generation of specification according to hudson specification	Sabah	07.10.1999
1.1	- correction according to customer specification (Nokia) - IP3: instead of 'No statement' is ≥ 60 dBm - VSWR (max): instead of $\leq 2.0:1$ is $\leq 2.3:1$ - Rejection ($f \geq f_N \pm 13000$ KHz): instead of min. 60 dB is min. 55 dB - Operational temperature range changed from $-10 \dots 80$ °C to $-10 \dots 85$ °C	Sabah	27.03.2000
1.2	- The sprocket holes: instead of the right side of the tape is on the left side of the tape (according to customer requirement, e mail from: 7. Juli.00)	Sabah	12.07.2000

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