

VI TELEFILTER

Preliminary Specification

TFS 43 A

1/5

Description

IF filter for digital cable TV

Measurement condition

Ambient temperature T_A : 25 °C
 Input power level: 0 dBm
 Terminating impedance: source: 50 Ω
 load: 2 k Ω || 3 pF

Characteristics

Remark:

Reference level for the relative attenuation a_{rel} of the TFS 43A is the insertion loss. The insertion loss a_e is defined as the insertion loss at the nominal frequency f_N . The centre 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 .

D a t a		typ. Value		Limit	
Insertion loss (Reference Level)		15,2	dB	14,8 dB	$\pm 1,5$ dB
Nominal frequency f_N		-		43,75	MHz
Centre frequency f_c at ambient temperature T_A		-		43,75 MHz $\pm$	0,07 MHz
Bandwidth	3 dB	6,0	MHz	-	
	30 dB	7,6	MHz	-	
Group delay ripple p-p in $f_c \pm 3$ MHz		35	ns	-	
Relative attenuation a_{rel}					
@ 41,22 MHz		0,4	dB	-	
@ 46,28 MHz		0,15	dB	0,2	± 1 dB
@ 40,75 MHz		3,0	dB	2,7	$\pm 1,2$ dB
@ 46,75 MHz		3,0	dB	2,7	$\pm 1,2$ dB
@ 39,75 MHz		44	dB	min.	38 dB
@ 47,75 MHz		41,5	dB	min.	37 dB
$f_N - 8,75$ MHz ... $f_N - 4,75$ MHz		46	dB	min.	42 dB
$f_N - 4,75$ MHz ... $f_N - 4,00$ MHz		48	dB	min.	37 dB
$f_N + 4,00$ MHz ... $f_N + 4,25$ MHz		38	dB	min.	36 dB
$f_N + 4,25$ MHz ... $f_N + 5,00$ MHz		36,5	dB	min.	34 dB
$f_N + 5,00$ MHz ... $f_N + 6,25$ MHz		46	dB	min.	36 dB
$f_N + 6,25$ MHz ... $f_N + 11,25$ MHz		44	dB	min.	42 dB
Reflected wave signal suppression 1,2 μ s...6,0 μ s after main pulse		58	dB	min.	42 dB
Feedthrough signal suppression		52	dB	min.	50 dB
Operable temperature range		-		-25 °C	 65 °C
Storage temperature range		-		-40 °C	 85 °C
Temperature coefficient of frequency TC_f^*		-72	ppm / K	-	
DC voltage V_{DC}		-		max.	12 V
AC voltage V_{pp}		-		max.	10 V

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

generated:

checked / approved:

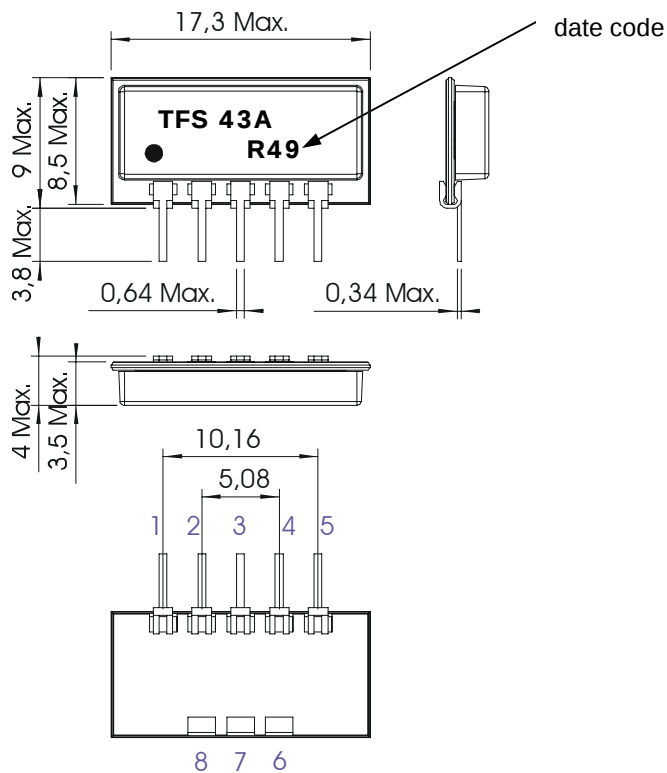
TELEFILTER GmbH
 Potsdamer Straße 18
 D 14 513 TELTOW / Germany
 Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
 E-Mail: tft@telefilter.com

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.



Construction and pin connection

(All dimensions in mm)



- | | |
|-------|-------------------------------|
| 1 | input |
| 2 | input - ground |
| 3 | chip carrier - ground |
| 4 | output |
| 5 | output |
| 6,7,8 | internally connected to pin 3 |

date code: year + week
 N 2001
 P 2002
 R 2003
 ...

VI TELEFILTER**Preliminary Specification****TFS 43 A****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. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): reflow possible: twice max.;
for temperature conditions, please refer to the attached "Air reflow temperature conditions" on page 4;

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:	1700
	reel of empty components at start:	min 300 mm
	reel of empty components at start including leader: trailer	min 500 mm min 300 mm

VI TELEFILTER**Preliminary Specification****TFS 43 A****4/5****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.	

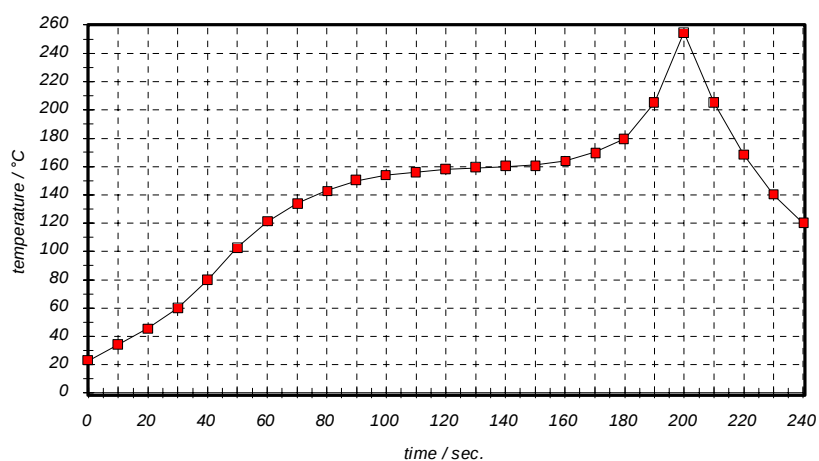
Chip-mount air reflow profile

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

VI TELEFILTER**Preliminary Specification****TFS 43 A****5/5****History**

Version	Reason of Changes	Name	Date
1.0	generate specification	Pfeiffer	01.08.02
1.1	change package	Pfeiffer	28.11.02
1.2	add typical values	Pfeiffer	29.01.03
1.3	add description	Pfeiffer	07.02.03
1.4	typical values and limits in upper stop band changed	Pfeiffer	05.12.03