

VI TELEFILTER**Filter Specification****TFS 141 C****1/5****Measurement condition**

Ambient Temperature: 23 °C
 Input Power Level: 0 dBm
 Terminating Impedance at f_c^* :
 input: 1,25 k Ω // -9,4 pF
 output: 1,36 k Ω // -9,9 pF

Characteristics

Remark:

The nominal frequency f_N is fixed at 141,0 MHz. The insertion loss a_e is defined as loss value determined at f_N . Reference level for the relative attenuation a_{rel} of the TFS 141C is the insertion loss a_e . All specified data are met within the operating temperature range.

D a t a		typ. Value	Limit
Insertion Loss (Reference Level)	$a_e = a_{min}$	11 dB	max. 14 dB
Nominal Frequency	f_N	-	141,0 MHz
Centre Frequency	f_C	141,0 MHz	-
Pass Band	PB	-	$f_N \pm 525$ kHz
Relative Attenuation	a_{rel}		
$f_N \pm 525$ kHz		-	max. 1 dB
$f_N \pm 590$ kHz		-	max. 3,75 dB
$f_N \pm 1,25$ MHz ... $f_N \pm 4,5$ MHz		35 dB	min. 22,5 dB
$f_N - 91$ MHz ... $f_N - 4,5$ MHz		55 dB	min. 45 dB
$f_N + 4,5$ MHz ... $f_N + 359$ MHz		55 dB	min. 45 dB
Average Group Delay within $f_N \pm 630$ kHz		1,92 μ s	max. 2,54 μ s
Group Delay Variation within PB		125 ns	max. 300 ns p-p
Phase Variation within $f_N \pm 630$ kHz		0,5 deg rms	max. 2 deg rms
Return Loss within PB		13 dB	min. 10 dB
Operating Temperature Range °C		-	0 +85
Storage Temperature Range		-	-10.... +100 °C
Frequency inversion temperature T_0		30 °C	-
Temperature Coefficient of frequency TC_f **		- 0,036 ppm / K ²	-
Intermodulation IP_3 modulation signals: $f_N + 2$ MHz and $f_N + 4$ MHz, each of 10 dBm		> 40 dB	min. 35 dB
Permissible DC voltage V_{DC}		-	max. 10 V

*) The terminating impedances depend on parasitics and q-values of matching elements and the board used, and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.

**) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}^2) \times (T - T_0)^2 \times f_{T0}(\text{MHz})$

generated: _____

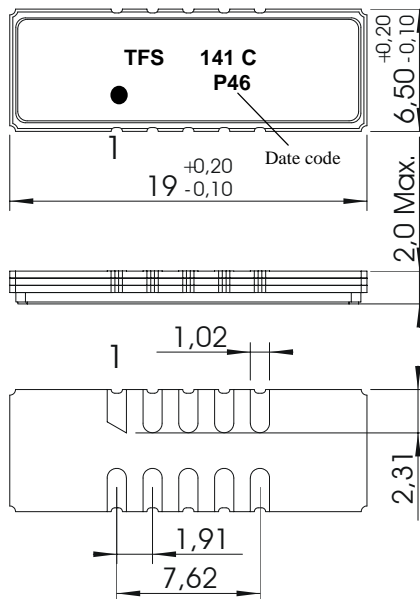
checked / approved: _____

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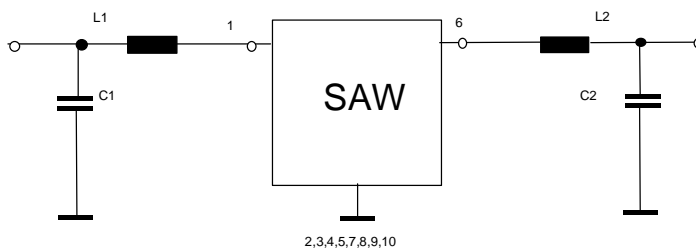
Construction and pin connection

(All dimensions in mm)



1	Input
2	Ground
3	Ground
4	Ground
5	Output RF-return
6	Output
7	Ground
8	Ground
9	Ground
10	Input RF-return

Date code	year + week
M	2000
N	2001
P	2002
...	

50 Ω matching (example)**VI TELEFILTER**

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VI TELEFILTER**Filter Specification****TFS 141 C****3/5****Stability Characteristics**

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;

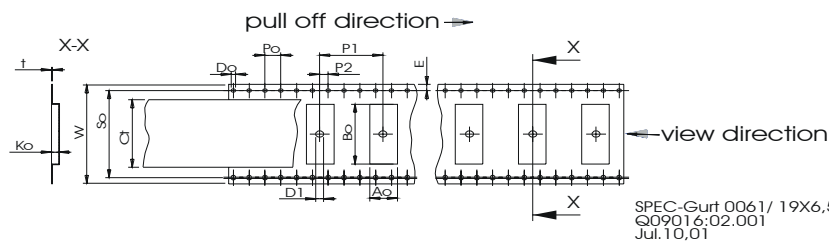
Packing

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;

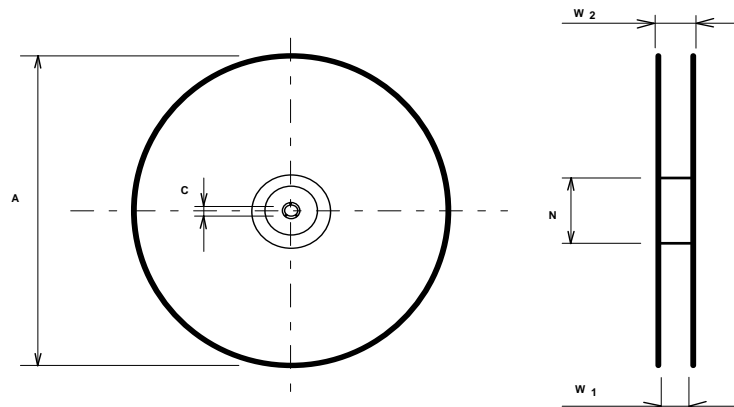
max. pieces of filters per reel: 2000
reel of empty components at start: min 300 mm
reel of empty components at start including leader: min 500 mm
trailer: min 300 mm

Tape (all dimensions in mm)

W	: 32 ± 0,3
Po	: 4 ± 0,1
Do	: 1,5 + 0,5
E	: 1,75 ± 0,1
So	: 28,4 ± 0,1
P2	: 2 ± 0,1
P1	: 12 ± 0,1
D1 (min)	: 1,5
Ao	: 7,1 ± 0,1
Bo	: 19,6 ± 0,1
Ko	: 2,0 ± 0,1
t	: 0,35 ± 0,05
Ct	: 25,5 ± 0,1

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

A	: 330
W1	: 32,4 +2
W2 (max)	: 38,4
N (min)	: 100
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 in the above shown direction.

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Air reflow temperature conditions1st 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.	

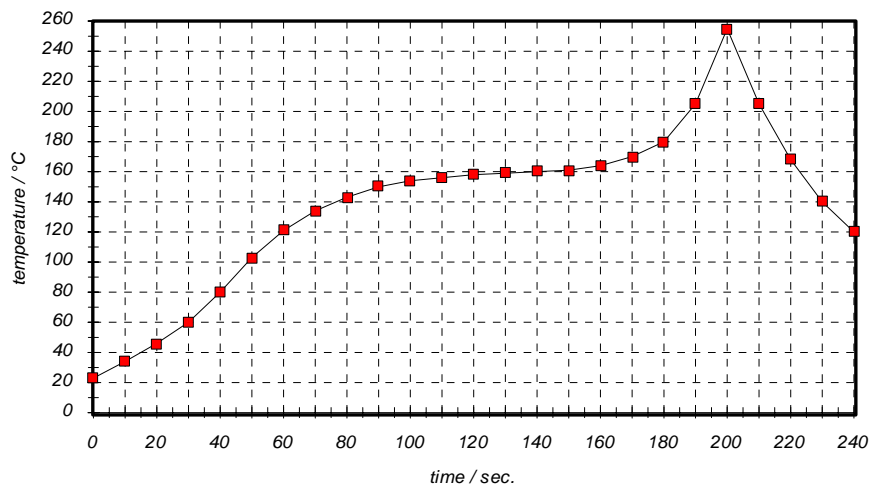
Chip-mount air reflow profile

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

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VI TELEFILTER**Filter Specification****TFS 141 C****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- generation of specification according to customer requirements	Pfeiffer	02.08.2002
1.1	- changing from development specification to filter specification - terminating impedance and typical values of relative attenuation, group delay and phase ripple deviation added	Pfeiffer	11.11.2002

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