

VI TELEFILTER

Filter specification

TFS 140AV

1/5

Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	50 Ω -78 pF	
Output:	95 Ω -52 pF	

Characteristics

Remark:

The nominal frequency f_N is fixed at 140,0 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 140AV is the insertion loss a_e . All specified data are met within the operating temperature range.

D a t a		typ. value		tolerance / limit		
Insertion loss (reference level)		a_e	10,8 dB	max.	13,0	dB
Nominal frequency		f_N	-		140,0	MHz
Passband		PB	-	$f_N \pm$	2,5	MHz
Pass band ripple			0,15 dB	max.	1,0	dB
Relative attenuation		a_{rel}				
f_N	... $f_N \pm 2,5$ MHz		0,2 dB	max.	1	dB
$f_N \pm 7,5$ MHz	... $f_N \pm 22,2$ MHz		50 dB	min.	15	dB
$f_N - 130,0$ MHz	... $f_N - 22,2$ MHz		58 dB	min.	40	dB
$f_N + 22,2$ MHz	... $f_N + 360,0$ MHz		70 dB	min.	40	dB
Absolute group delay within PB			570 ns	max.	825	ns
Group delay ripple within PB		p-p	22 ns	max.	100	ns
Phase linearity within PB		p-p	3 deg	max.	10	deg
Input power level			-	max.	10	dBm
Operating temperature range		OTR	-	- 40 °C ... + 85 °C		
Storage temperature range			-	- 45 °C ... + 85 °C		
Temperature coefficient of frequency		TC_f **	-18 ppm/K			

*) The terminating impedances depend on parasites 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.

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

Generated:

Checked / Approved:

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

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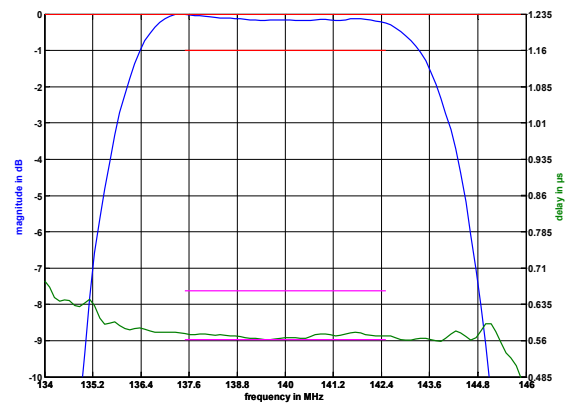
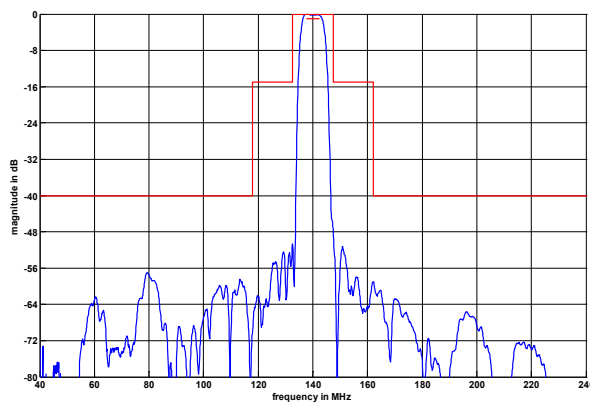
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Filter specification

TFS 140AV

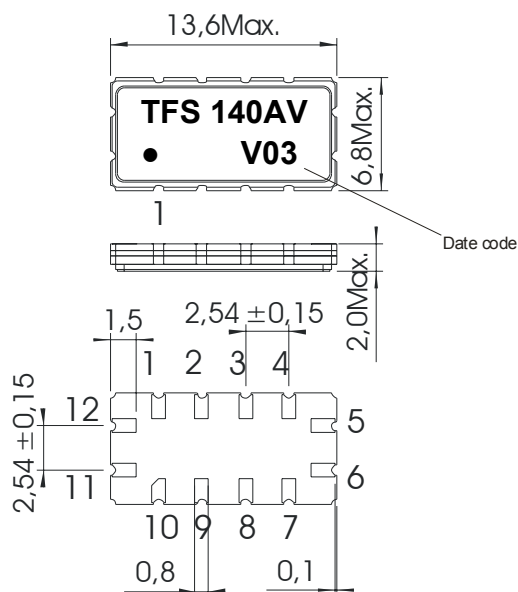
2/5

Filter characteristic



Construction and pin connection

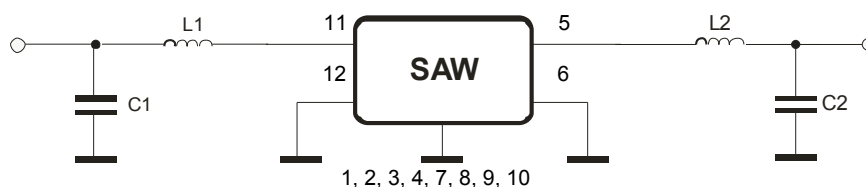
(All dimensions in mm)



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

Date code: Year + week
V 2007
W 2008
X 2009
...

50 Ω Test circuit



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VI TELEFILTER**Filter specification****TFS 140AV****3/5****Stability characteristics, reliability**

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

1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5 g 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: three times max.;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

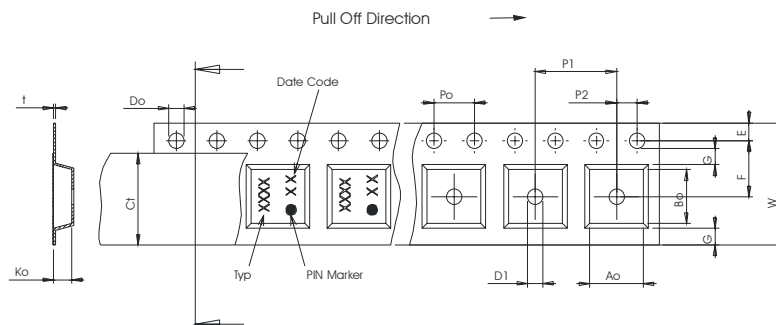
Packing

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;

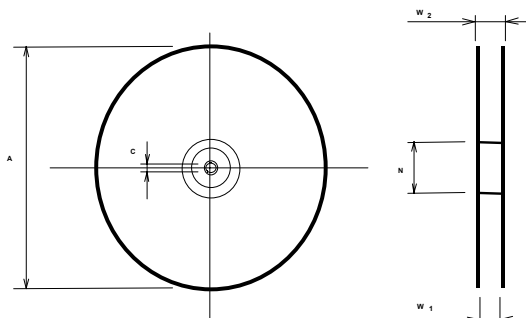
max. pieces of filters per reel:	1700
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 24,00 +0,30/-0,10
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,10
F	: 11,50 ± 0,10
G(min)	: 0,60
P2	: 2,00 ± 0,1
P1	: 12,00 ± 0,1
D1(min)	: 1,50
Ao	: 7,10 ± 0,10
Bo	: 13,90 ± 0,10
Ct	: 21,5 ± 0,1

**Reel (all dimensions in mm)**

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



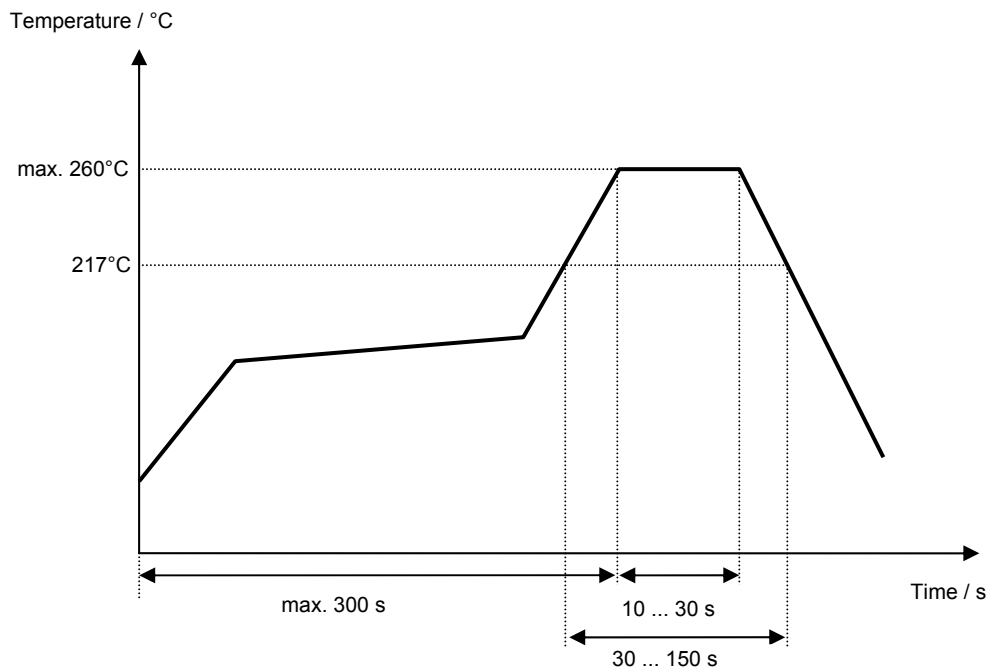
The minimum bending radius is 45 mm.

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Air reflow temperature conditions

Conditions	Exposure
Average ramp-up rate (30°C to 217°C)	less than 3°C/second
> 100°C	between 300 and 600 seconds
> 150°C	between 240 and 500 seconds
> 217°C	between 30 and 150 seconds
Peak temperature	max. 260°C
Time within 5°C of actual peak temperature	between 10 and 30 seconds
Cool-down rate (Peak to 50°C)	less than 6°C/second
Time from 30°C to Peak temperature	no greater than 300 seconds

Chip-mount air reflow profile

VI TELEFILTER**Filter specification****TFS 140AV****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Strehl	25.07.2006
1.1	- package adjusted	Strehl	25.07.2006
1.2	- add of terminating impedances, typical values, filter characteristics and matching configuration - 'remarks' and labelling corrected	Pfeiffer	17.01.2007

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