

VI TELEFILTER**Filter specification****TFS 916****1/5****Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50 Ω	
Output:	50 Ω	

Characteristics**Remark:**

The maximum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 916,0 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

D a t a		typ. value		tolerance / limit		
Insertion loss	a_e	2,1	dB	max.	3,0	dB
		-			-	
Nominal frequency	f_N	-			916,0	
Passband		-		f_N	± 1,75	MHz
Absolute attenuation	a_{abs}					
0,3 MHz ... 890 MHz		39	dB	min.	35	dB
930 MHz		50	dB	min.	40	dB
930 MHz		51	dB	min.	45 **	dB
930 MHz ... 1500 MHz		44	dB	min.	38	dB
Input power level		-		max.	10	dBm
Operating temperature range	OTR	-		- 20 °C ... + 70 °C		
Reduced operating temperature range		-		+ 20 °C ... + 70 °C		
Storage temperature range		-		- 40 °C ... + 85 °C		
Temperature coefficient of frequency	TC_f *	- 35	ppm/K		-	

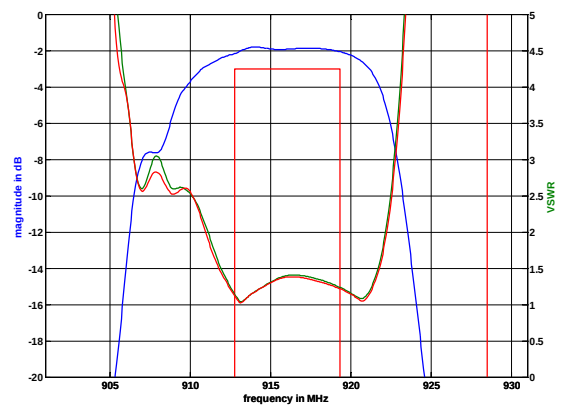
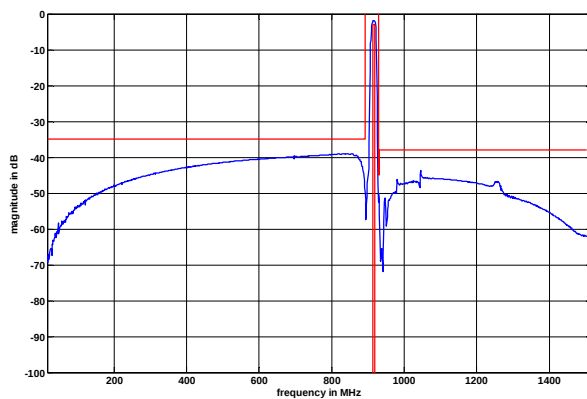
*) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$.

**) within reduced operating temperature range

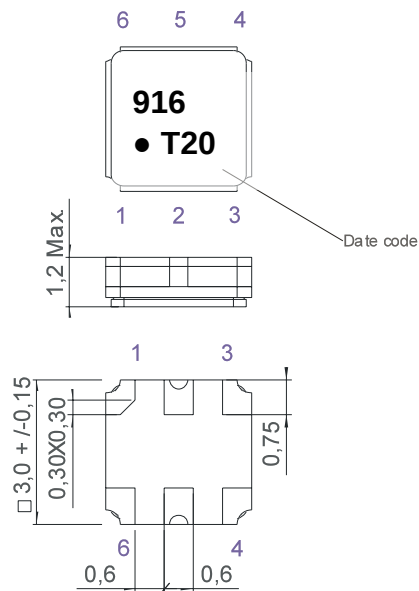
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Tele Filter GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

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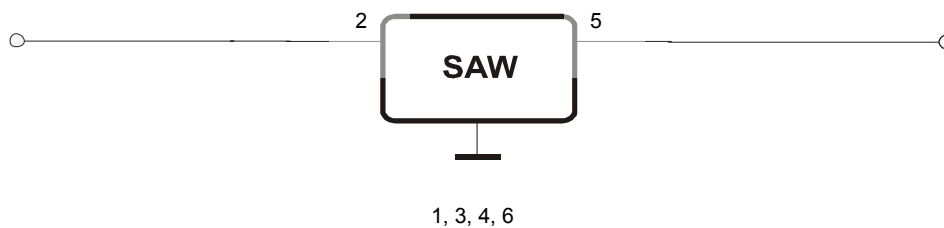
VI TELEFILTER**Filter specification****TFS 916****2/5****Filter characteristic****Construction and pin connection**

(All dimensions in mm)



1	Ground
2	Input
3	Ground
4	Ground
5	Output
6	Ground

Date code: Year + week
 T 2005
 U 2006
 V 2007
 ...

50 Ohm Test circuit

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VI TELEFILTER**Filter specification****TFS 916****3/5****Stability characteristics**

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: twice max.;
for temperature conditions refer to the attached "Air reflow temperature conditions" on page 4;

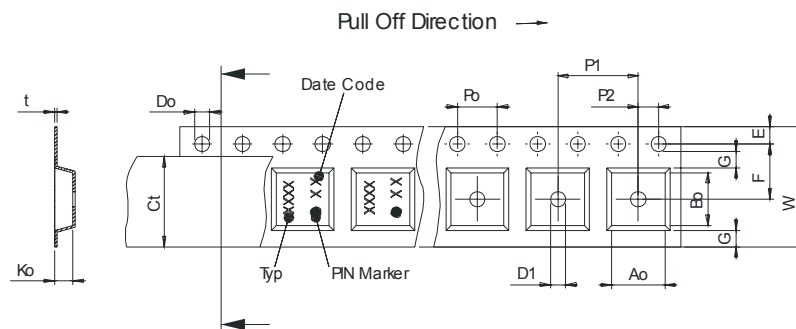
Packing

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

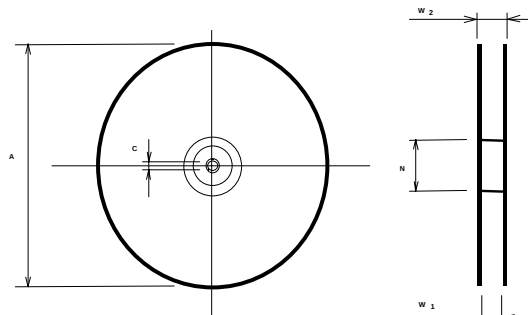
max. pieces of filters peer reel:	9000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 8,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,1
F	: 3,50 ± 0,05
G(min)	: 0,75
P2	: 2,00 ± 0,05
P1	: 4,00 ± 0,1
D1(min)	: 1,50
Ao	: 3,25 ± 0,1
Bo	: 3,25 ± 0,1
Ct	: 5,5 ± 0,1

**Reel (all dimensions in mm)**

A	: 330
W1	: 8,4 +1,5/-0
W2(max)	: 14,4
N(min)	: 50
C	: 13,0 +0,5/-0,2



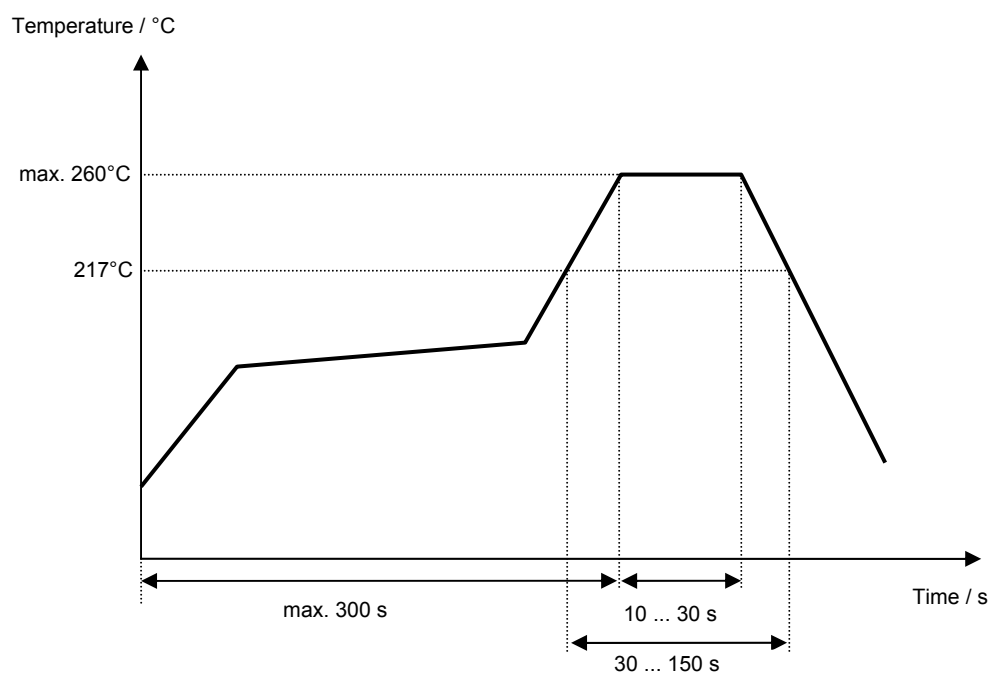
The minimum bending radius is 45 mm.

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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

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VI TELEFILTER**Filter specification****TFS 916****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Noack	10.05.2004
1.1	- Change construction and pin connection, terminating impedance, test circuit and absolute attenuation (930 MHz)	Noack	25.05.2004
1.2	- change ultimate rejection on the low-frequency side from 38 to 35 dB - air reflow temperature conditions and stability characteristics updated	Steiner	10.03.2005
1.3	- add typical values and filter characteristics - generation of filter specification	Noack	09.05.2005

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