Measurement condition

Ambient temperature:	25	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	50	Ω

Characteristics

Remark:
The insertion loss $\mathbf{a_e}$ is defined as the insertion loss at the nominal frequency $\mathbf{f_N}$. Reference level for the relative attenuation $\mathbf{a_{rel}}$ of the **TFH 36A** is the insertion loss. The reference frequency $\mathbf{f_C}$ is the arithmetic mean value of the upper and lower frequencies at the **3 dB** filter attenuation level relative to the insertion loss $\mathbf{a_e}$. The frequency shift of the filter over temperature defined by the temperature coefficient of frequency Tc_f is not included in the production tolerance scheme.

D a t a		**typ. value**		**tolerance / limit**		
Insertion loss (reference level)	a_e	26,7	dB	max.	27,5	dB
Nominal frequency	f_N	-			36,125	MHz
Centre frequency	f_C	36,125	MHz		-	
Passband	PB	-		f_C ±	2,8	MHz
Pass band ripple p-p		0,25	dB	max.	0,55	dB
Bandwidth	BW					
0,55 dB		7,45	MHz	min.	5,6	MHz
1 dB		7,63	MHz			
3 dB		8,08	MHz	min.	8,0	MHz
20 dB		9,35	MHz			
35 dB		9,80	MHz	max.	10,0	MHz
Relative attenuation	a_{rel}					
f_N ... f_N ± 2,80 MHz		0,25	dB	max.	0,55	dB
f_N ± 2,80 MHz ... f_N ± 4,0 MHz		< 2,6	dB	max.	3	dB
f_N ± 5,0 MHz ... f_N ± 30 MHz		40...45	dB	min.	35	dB
Group delay mean value in PB		1,45	µs	max.	2	µs
Group delay ripple in f_N ± 2,80 MHz p-p *		26	ns	max.	70	ns
Deviation from linear phase in f_N ± 2,80 MHz p-p		1,6°	(r.m.s. 0,3°)	max.	3 °	
Triple transit attenuation compared to main signal		60	dB		-	
Crosstalk		65	dB		-	
Operating temperature range	OTR	-			+ 25 °C	
Storage temperature range		-			- 25 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f **	- 75	ppm/K		-	

*) measured with smoothing aperture of 120 kHz
**) $\Delta f_C(Hz) = Tc_f(ppm/K) \times (T - T_A) \times f_C(MHz)$

Generated:

Checked / Approved:

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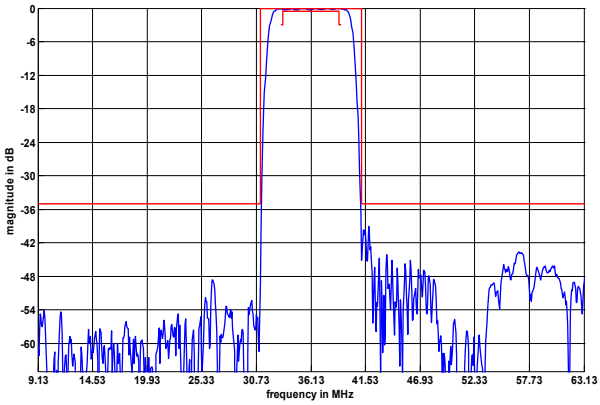
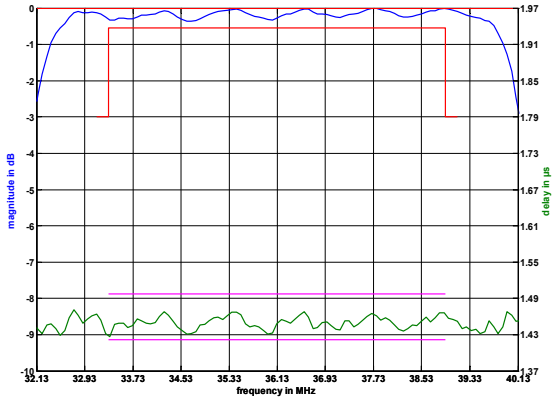
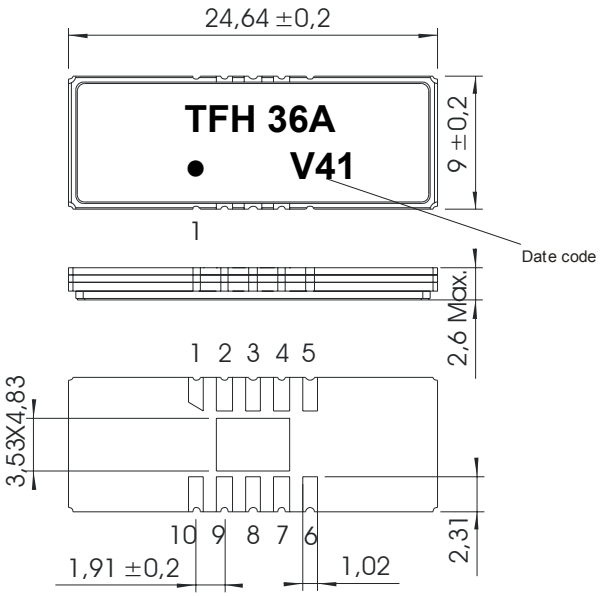
characteristic





Construction and pin connection

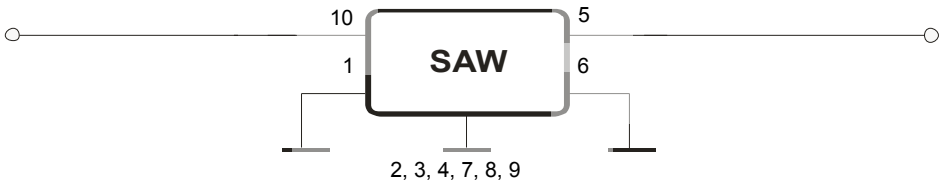
(All dimensions in mm)



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

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

50 Ω Test circuit



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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)

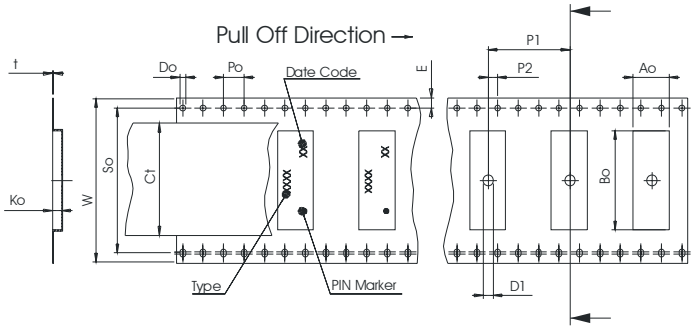
Packing

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:	1000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

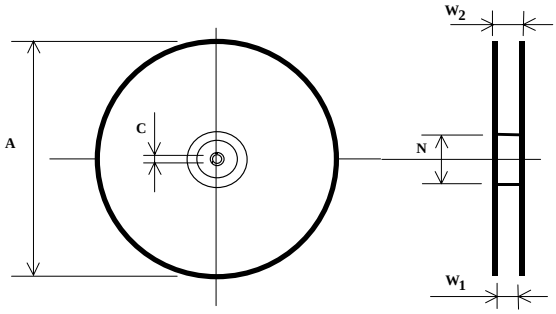
Tape (all dimensions in mm)

W	: 44,00	± 0,3
Po	: 4,00	± 0,1
Do	: 1,50	+0,1/-0
E	: 1,75	± 0,1
F	: 20,20	± 0,15
P2	: 2,00	± 0,15
P1	: 16,00	± 0,1
D1(min)	: 2,00	
Ao	: 9,30	± 0,1
Bo	: 24,90	± 0,1
So	: 40,40	± 0,1
Ct	: 38,0	± 0,1



Reel (all dimensions in mm)

A	:330	
W1	: 44,4	+2/-0
W2(max)	: 50,4	
N(min)	:100	
C	: 13,0	+0,5/-0,2



The minimum bending radius is 45 mm.

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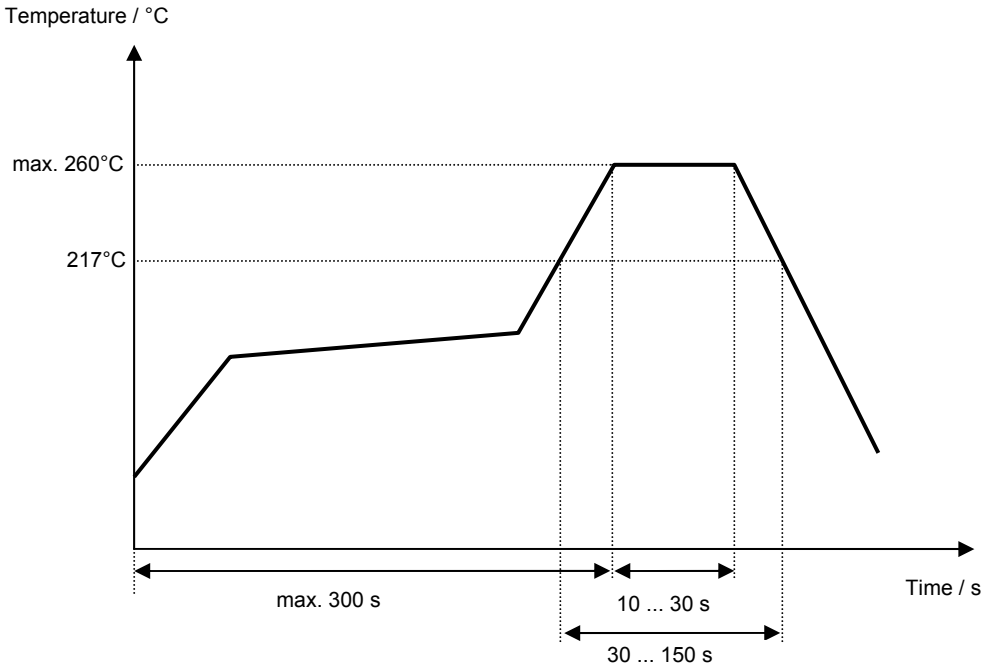
Air reflow temperature conditions

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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History

Version	Reason of Changes	Name	Date
1.0	Generate extended filter specification.	Dunzow W.	09.03.2001
1.1	- correct definition of insertion loss. - correct typical filter data. - reduce max. pass band ripple from 0,6 dB to 0,55 dB.	Dunzow W.	13.03.2001
1.2	- correct ” Packing “.	Dunzow W.	21.06.2001
1.3	- change construction, stability characteristics and packing - add filter characteristic	Strehl	09.10.2007

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