

VI TELEFILTER**Filter specification****TFS 846****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 846 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.

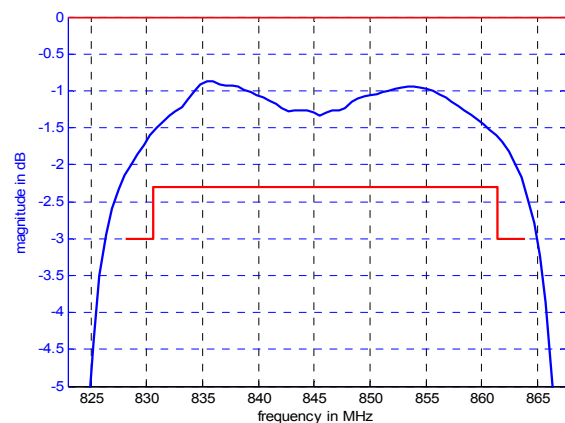
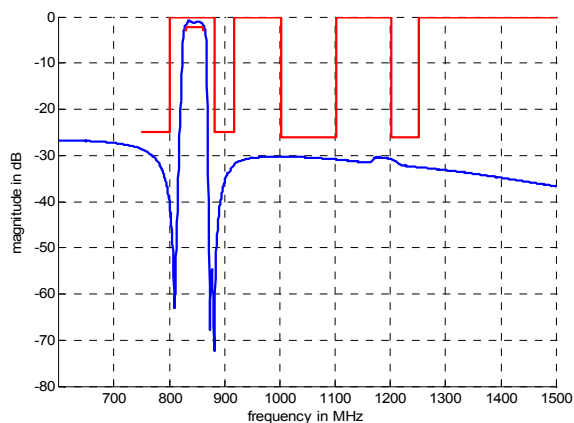
D a t a					typ. value		tolerance / limit				
Insertion loss in PB1					a _e	1,6	dB	max.	2,3	dB	
Insertion loss in PB2					a _{e₂}	2,2	dB	max.	3,0	dB	
Nominal frequency					f _N	-			846	MHz	
Centre frequency					f _C	846	MHz		-		
Passband 1					PB1	-		f _N	±	13,5	MHz
Pass band ripple						0,9	dB	max.	1,5	dB	
Passband 2					PB2	-		f _N	±	16,0	MHz
Absolute attenuation					a _{abs}						
750	MHz	...	800	MHZ		28	dB	min.	25	dB	
880	MHz	...	915	MHZ		32	dB	min.	25	dB	
1000	MHz	...	1100	MHZ		31	dB	min.	26	dB	
1200	MHz	...	1250	MHZ		31	dB	min.	26	dB	
1550	MHz	...	1600	MHZ		38	dB	min.	20	dB	
VSWR within PB1						2,1 : 1		max.	2,2 : 1		
Input power level						-		max.	15	dBm	
Operating temperature range					OTR	-		- 30 °C ... + 70 °C			
Storage temperature range						-		- 40 °C ... + 85 °C			
Temperature coefficient of frequency					TC _f *	- 46	ppm/K				

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

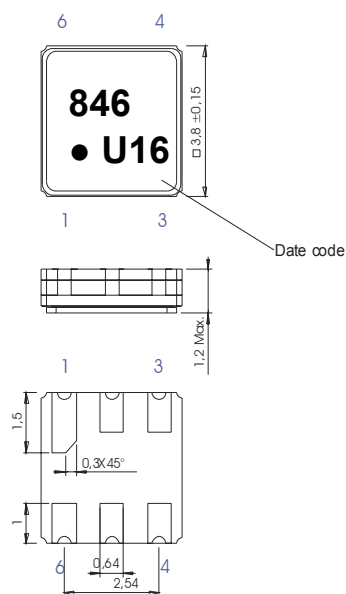
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VI TELEFILTER**Filter specification****TFS 846****2/5****Filter characteristic****Construction and pin connection**

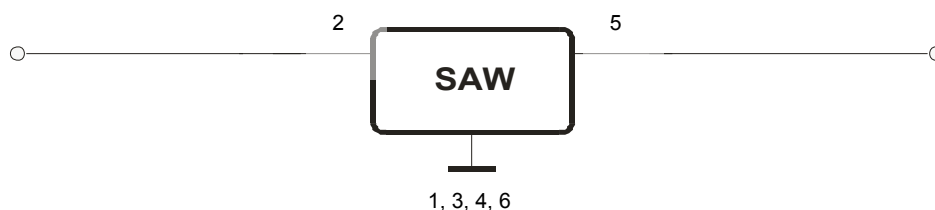
(All dimensions in mm)



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

Date code: Year + week
 U 2006
 V 2007
 W 2008
 ...

Gold thickness on pads is max 0,1 µm

50 Ω Test circuit

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VI TELEFILTER**Filter specification****TFS 846****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)

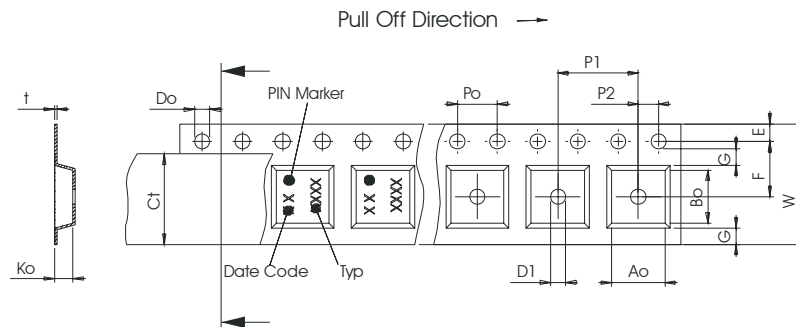
Packing

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

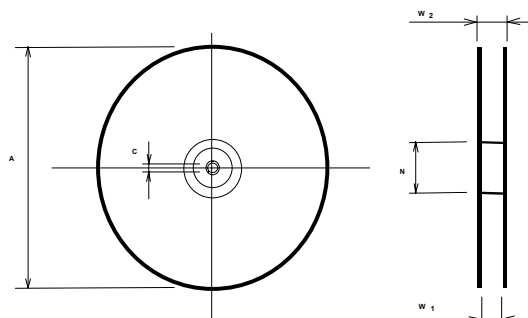
max. pieces of filters peer reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 12,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
E	: 1,75 ± 0,1
F	: 5,50 ± 0,05
G(min)	: 0,75
P2	: 2,00 ± 0,05
P1	: 8,00 ± 0,1
D1(min)	: 1,50
Ao	: 4,30 ± 0,1
Bo	: 4,30 ± 0,1
Ct	: 9,5 ± 0,1

**Reel (all dimensions in mm)**

A	: 330
W1	: 12,4 +2/-0
W2(max)	: 18,4
N(min)	: 50
C	: 13,0 +0,5/-0,2



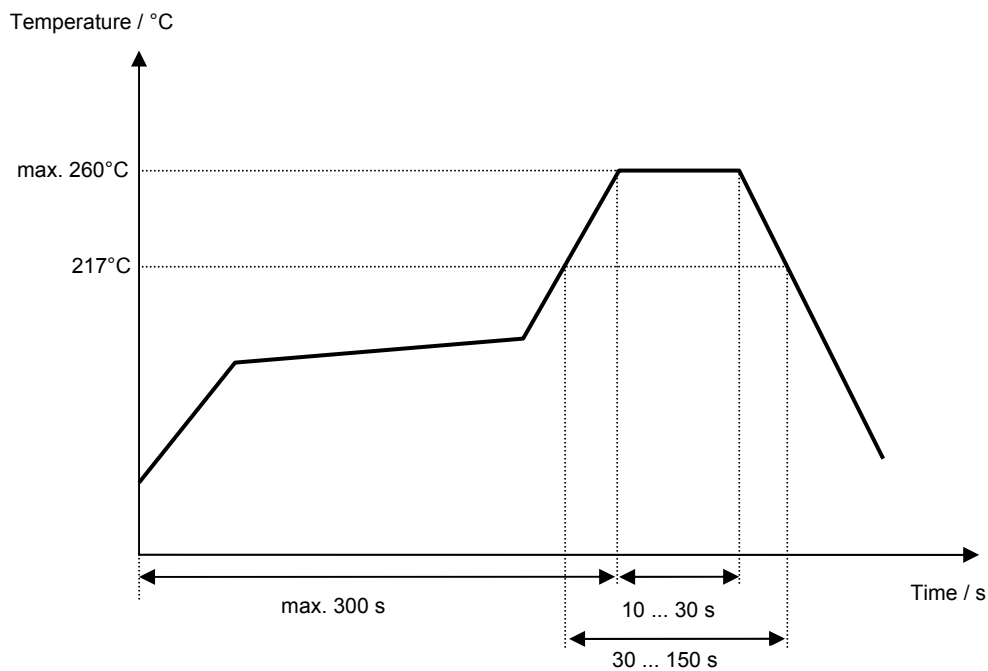
The minimum bending radius is 45 mm.

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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

VI TELEFILTER**Filter specification****TFS 846****5/5****History**

Version	Reason of Changes	Name	Date
1.0	Generation of development specification	Strehl	10.02.2005
1.1	Add typical values and filter characteristic Generation of filter specification	Strehl	14.10.2005
1.2	Change construction and stability characteristics	Strehl	19.04.2006