Measurement condition

Ambient temperature: 23 °C
Input power level: 0 dBm
Terminating impedance: 450 Ω || -3.4 pF

Construction and pin connection

see page 2

Characteristics

Remark:
Reference level for the relative attenuation a_{rel} of the TFS 246 KC is the minimum of the pass band attenuation a_{min}. The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e. The centre frequency f_0 is the arithmetic mean value of the upper and lower frequencies at the 3 dB filter attenuation level relative to the insertion loss a_e. The nominal frequency f_N is fixed on 246 MHz without tolerance. The given values for the relative attenuation a_{rel} and for the group delay ripple have to be reached at the frequencies given below also if the centre frequency f_0 is shifted due to the temperature coefficient of frequency TC_f in the operating temperature range and due to a production tolerance for the centre frequency f_0.

P r e l i m i n a r y D a t a		**typ. value**		**limit**	
Insertion loss (Reference level)	$a_e = a_{min}$	6	dB	max 7	dB
Center frequency	f_0	246	MHz	-	
Norminal frequency	f_N	-		246	MHz
Relative attenuation	a_{rel}				
246,0 MHz ± 80 kHz				max 3	dB
246,0 MHz ± 200 kHz ... 246,0 MHz ± 400 kHz		12		min 5	dB
246,0 MHz ± 400 kHz ... 246,0 MHz ± 600 kHz		30		min 25	dB
246,0 MHz ± 600 kHz ... 246,0 MHz ± 1,6 kHz		35		min 31	dB
246,0 MHz ± 1,6 MHz ... 246,0 MHz ± 3 MHz		50		min 41	dB
246,0 MHz ± 3 MHz ... 246,0 MHz ± 25 MHz		55		min 50	dB
Group delay distortion	GDD				
246,0 MHz ± 50 kHz		0,7	µs	max 1,2	µs
246,0 MHz ± 75 kHz		1,1	µs	max 2,5	µs
Operating temperature range		- 20 °C ... + 85 °C			
Temperature coefficient of frequency	TC	ca. - 0,036 ppm/K²			
Frequency inversion temperature		+ 20 ... + 30 °C			

generated:

checked / approved:

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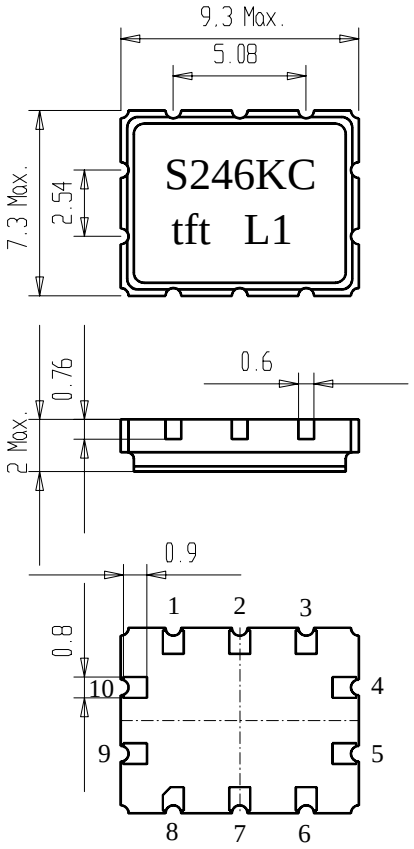
Construction, pin connection and 50 Ω matching network



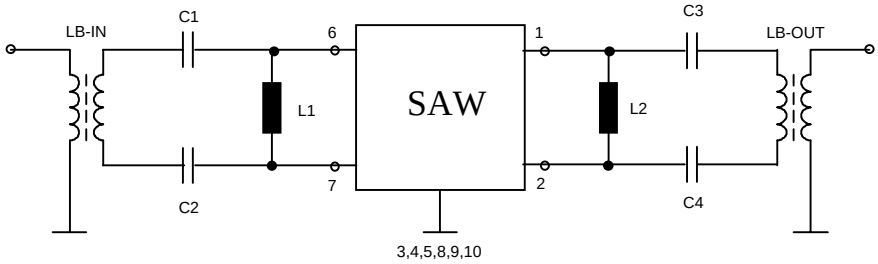
Pinning - balanced

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

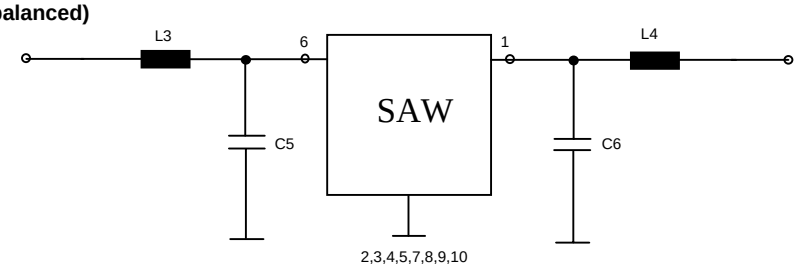
Pinning - unbalanced

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

50 Ω test circuit (balanced)



50 Ω test circuit (unbalanced)



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Stability characteristics

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

1. Shock:	30g, 18 ms, half sine wave, 3 shocks each plane; DIN IEC 68 T2 - 27
2. Vibration:	10 Hz to 150 Hz, 0.35 mm amplitude, 5g; 2 hours for 3 planes; DIN IEC 68 T2 - 6
3. Damp heat:	90 % to 95 % rel. humidity, 40 °C, 10 days; IEC Pub. 68 - 2 - 3
4. Resistance to solder heat (Reflow):	260 °C for 10 sec;

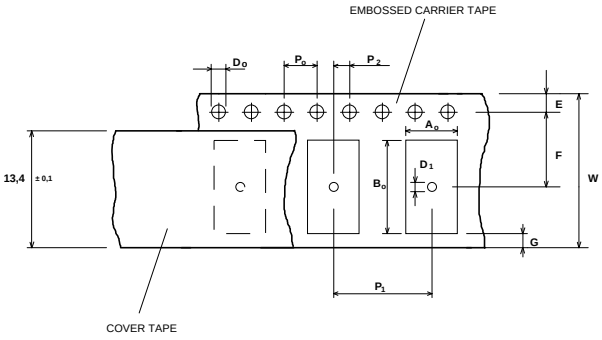
Packing

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;

pcs per reel: 2000

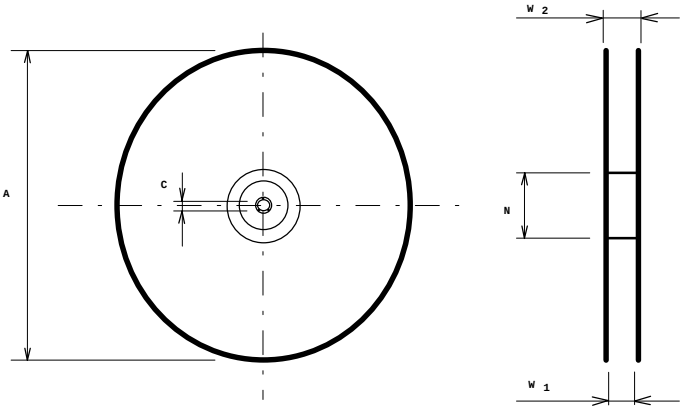
Tape (all dimensions in mm)

W	:	16	± 0,3
Po	:	4	± 0,1
Do	:	1,5	+ 0,5
D1	:	1,5	+ 0,5
E	:	1,75	± 0,1
F	:	7,5	± 0,1
G (min)	:	0,75	
P2	:	2	± 0,1
P1	:	12	± 0,1
D1(min)	:	1,5	
Ao	:	7,6	± 0,1
Bo	:	9,6	± 0,1



Reel (all dimensions in mm):

A	:	330	
W1	:	16,4 +2	
W2 (max)	:	22,4	
N (min)	:	>= 90	
C	:	13	± 0,25



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 with the sprocket holes on the right side of the tape.

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Air reflow temperature conditions

1st 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

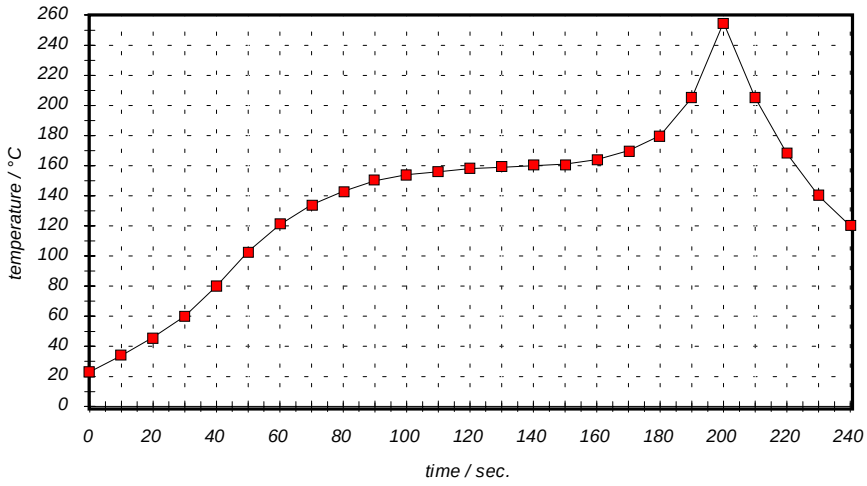

Table for temperature vs. time during the air reflow process

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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