

VI TELEFILTER**Resonator Specification****TFR 804****1/5****Measurement condition**

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

Characteristics

Remark:

The minimum of the attenuation a_{\min} is defined as the insertion loss a_e . The centre frequency 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 a_e .

D a t a		typ. value		tolerance / limit	
Insertion loss	a_e	5,3	dB	8,3	dB
Center frequency (center frequency between 3dB points)	f_c	804,5	MHz	± 250	kHz
Phase at f_c		152	°		
Loaded quality factor	Q_L	4550		min. 3000	
Unloaded quality factor	Q_U	9800		min. 6300	
Ageing of f_c				max. -40/+10	ppm
Equivalent circuit elements					
Motional capacitance	C_1	0,27	fF	-	
Motional inductance	L_1	144	uH	-	
Motional resistance	R_1	75	Ω	-	
Input / Output capacitance	C_0	1,6	pF	-	
Input power level				max. 0	dBm
Permissible DC voltage				max. 0	V
Operating temperature		-		+ 25	°C
Operable temperature range	OTR	-		- 45 °C ... + 85	°C
Storage temperature range		-		- 45 °C ... + 85	°C
Frequency inversion temperature		- 0,035	ppm/K ²	-	
Temperature coefficient of frequency	TC_f **	ca. 25	°C	max. ± 10	°C

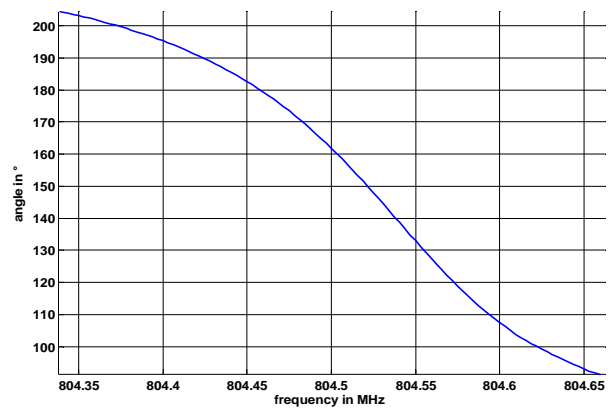
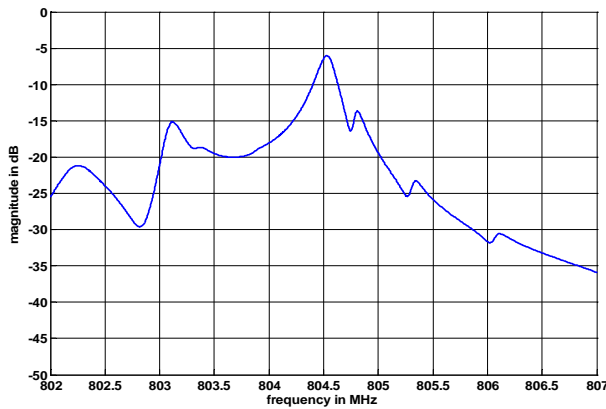
**) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T_0}(\text{MHz})$.

Generated:**Checked / Approved:**

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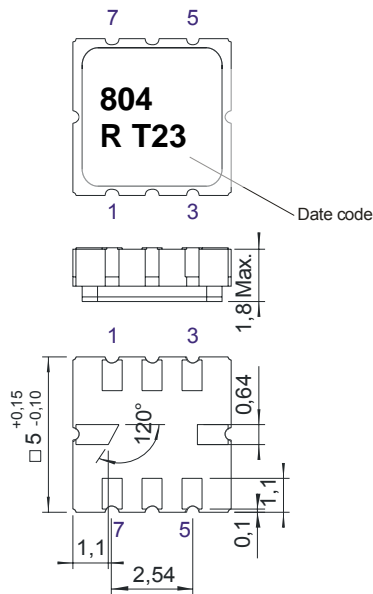
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Filter characteristic



Construction and pin connection

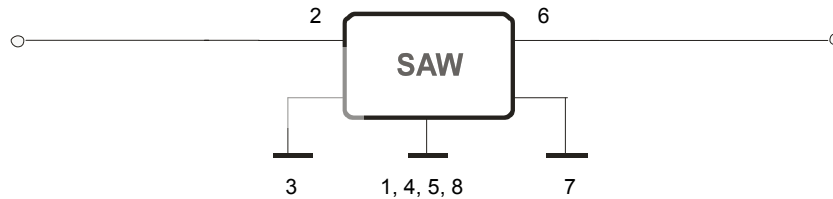
(All dimensions in mm)



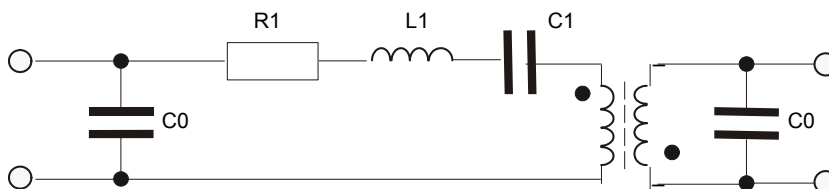
- 1 Ground
- 2 Input
- 3 Input RF Return
- 4 Ground
- 5 Ground
- 6 Output
- 7 Output RF Return
- 8 Ground

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

50 Ohm Test circuit



Equivalent Circuit



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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;

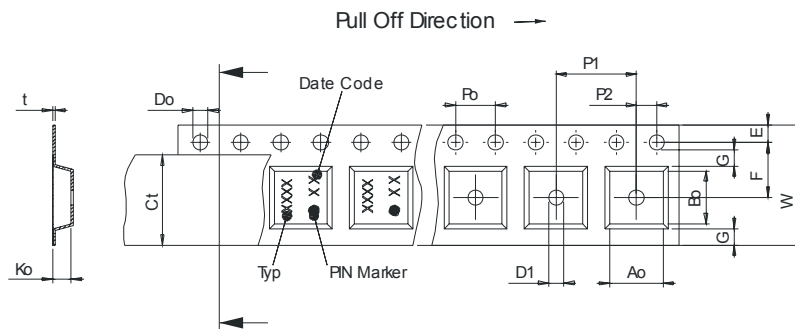
Packing

Tape & Reel: IEC 286 – 3, with 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 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

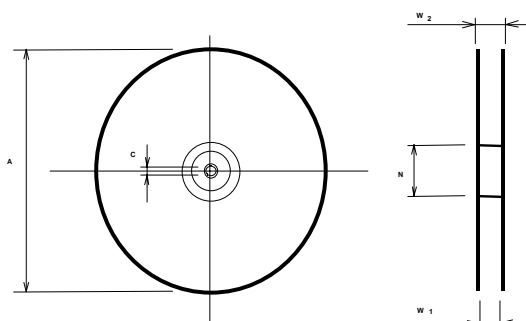
Tape (all dimensions in mm)

- 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 : 5,30 ± 0,1
- Bo : 5,30 ± 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.

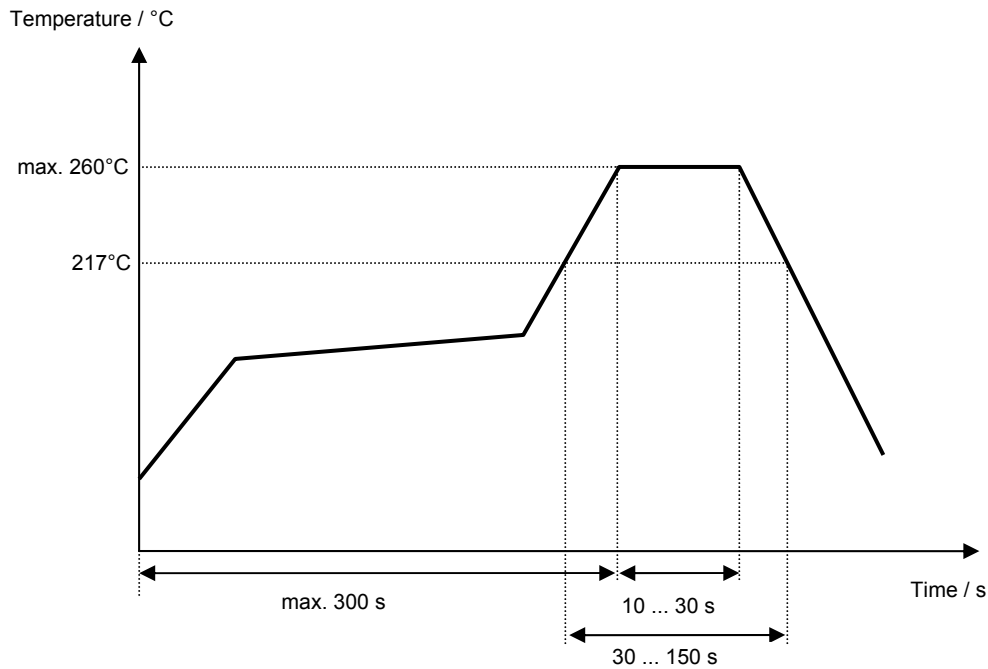
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Air reflow temperature conditions

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



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VI TELEFILTER**Resonator Specification****TFR 804****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	Martens	23.11.2004
2.0	- Generation of filter specification	Steiner	31.05.2005

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