

VI TELEFILTER**Resonator Specification****TFR 433 G****1/5****Measurement condition**

Ambient temperature: 25 °C
 Input power level: 0 dBm
 Terminating impedance
 for input: 50Ω || 0pF
 for output: 50Ω || 0pF

Characteristics**Remark:**

The minimum of the pass band attenuation a_{\min} is defined as the insertion loss a_e . The centre frequency f_C is the frequency of the minimum of the passband attenuation a_{\min} . The tolerance for the centre frequency also includes a frequency shift due to the temperature coefficient of frequency TC_f in the operating temperature range and a production tolerance for the centre frequency f_C .

D a t a		typ. value	tolerance/limit
Insertion loss (Reference level)	$a_e = a_{\min}$	1,2 dB	max. 1,8 dB
Centre frequency	f_C	433,870 MHz	± 75 kHz
Ageing of centre frequency	f_C		max. ± 50 ppm
Parallel capacitance	C_0	2,5 pF	
Motional resistance	R_1	14,5 Ω	
Motional inductance	L_1	94,8 μ H	
Motional capacitance	C_1	1,4 fF	
Operating temperature range			- 10..... + 70 °C
Storage temperature range			- 30..... + 85 °C
Frequency change with temperature between -10 °C...+ 70 °C		95 ppm/K	
Phase	φ		-20 + 20 °

Generated:**Checked / approved:**

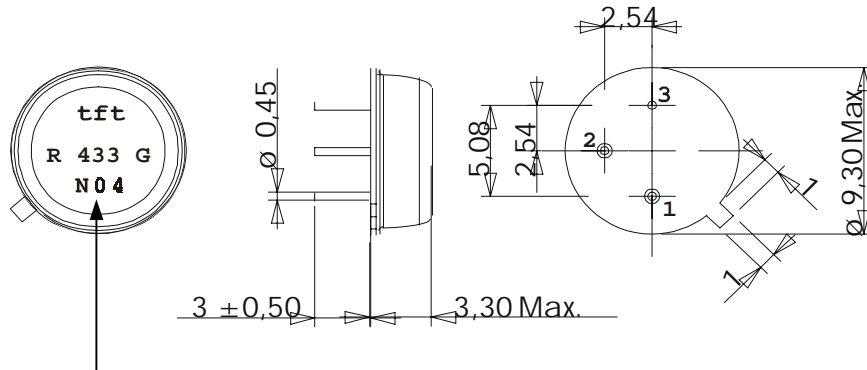
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Construction, pin configuration and 50 Ω - matching network

(All dimensions in mm)

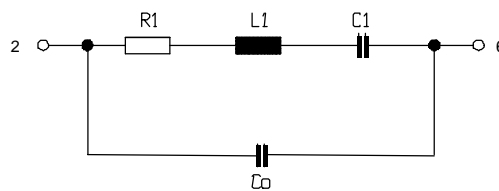
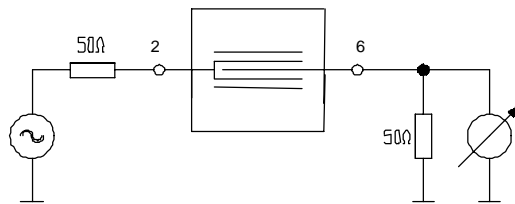


date code: year + week

L	1999
M	2000
N	2001
.....	

Pin 1	Input
Pin 2	Output
Pin 3	Package Ground

50 Ohm Test circuit



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Stability Characteristics

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

1. Shock: 500g, 18 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
3. Damp heat:
(cycle) 25 °C to 55°C / 95% r.H. / 10 cycles
DIN IEC 68 - 2 – 30 Db
4. Resistance to
solder heat (reflow): max. 2 times reflow process;
for temperature conditions refer to the attached "Air reflow temperature conditions"

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

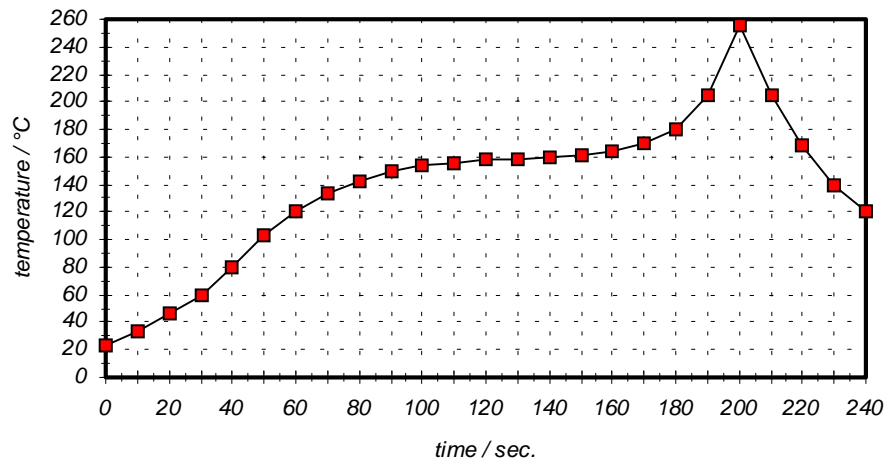


Table for temperature vs. time during the air reflow process

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

History

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VI TELEFILTER**Resonator Specification****TFR 433 G****5/5**

Version	Reason of Changes	Name	Date
1.0	Generate specification	Strehl	14.09.2000
1.1	change of electrical data from OEM product to VI production	Pfeiffer	24.01.2001
2.0	- new definition of centre frequency (maximum at the real part of the admittance) - additional parameter: ageing of centre frequency - correction : motional capacitance pF → fF	Pfeiffer	16.02.2001
3.0	- new definition of centre frequency (minimum of the passband attenuation) - $f_c = 433,870 \text{ MHz} \pm 75 \text{ kHz}$	Pfeiffer	28.02.2001

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