

VI TELEFILTER**Filter Specification****TFS 71C****1/4****1. Measurement condition :**

| | | |
|-----------------------------------|-------------|---------------------------|
| Ambient temperature T_A : | 23 °C | |
| Input power level: | 0 dBm | |
| Terminating impedances at f_C : | for input: | 450 Ω - 13,2 pF. |
| | for output: | 390 Ω - 13,5 pF. |
| Q-value of matching elements: | > 50 | |

2. Characteristics :

Remark:

Reference level for the relative attenuation a_{rel} of the **TFS71C** 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 reference 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 . The temperature coefficient of frequency Tc_f is valid both for the reference frequency f_C and the frequency response of the filter in the operating temperature range. The frequency shift of the filter in the operating temperature range is not included in the production tolerance scheme.

| Data | typ. value | tolerance / limit |
|---|--|----------------------|
| Insertion loss (Reference level) a_e | 6,6 dB | max. 7,6 dB |
| Reference frequency f_C at ambient temperature (f_{CTA}) | 71,0 MHz | 71,0 \pm 0,015 MHz |
| Bandwidth at ambient temperature: | | |
| 1 dB - band width | 170 kHz | min. 130 kHz |
| 1,5 dB - band width | 215 kHz | min. 165 kHz |
| 3 dB - band width | 300 kHz | |
| 4 dB - band width | 350 kHz | max. 400 kHz |
| 20 dB - band width | 700 kHz | max. 800 kHz |
| 25 dB - band width | 740 kHz | max. 1200 kHz |
| 35 dB - band width | 2000 kHz | max. 3200 kHz |
| Relative attenuation a_{rel} | | |
| $f_C \pm 65$ kHz ... $f_C \pm 65$ kHz | 0,7 dB | max. 1,0 dB |
| $f_C \pm 82,5$ kHz ... $f_C \pm 82,5$ kHz | 1 dB | max. 1,5 dB |
| $f_C \pm 200$ kHz ... $f_C \pm 400$ kHz | 5 dB | min. 4 dB |
| $f_C \pm 400$ kHz ... $f_C \pm 800$ kHz | 25 dB | min. 20 dB |
| $f_C \pm 800$ kHz ... $f_C \pm 1200$ kHz | 28...35 dB | min. 25 dB |
| $f_C \pm 1200$ kHz ... $f_C \pm 10$ MHz | 40...50 dB | min. 35 dB |
| Group delay (mean value in : $f_C \dots f_C \pm 80$ kHz | 2,05 μ s | max. 2,5 μ s |
| Group delay ripple in : $f_C \dots f_C \pm 80$ kHz | 150 ns | max. 300 ns |
| Deviation from linear phase in : $f_C \dots f_C \pm 80$ kHz | 2° p-p..(0,5 ° r.m.s.) | |
| Triple transit attenuation compared to main signal | 35...40 dB | |
| Crosstalk | > 40 dB | |
| Frequency inversion temperature (T_o) | T. B. M. | |
| Temperature coefficient of frequency (Tc_f) | -0,045 ppm/K ² | |
| Frequency deviation of f_C over temperature: * | $\Delta f_C(\text{Hz}) = Tc_f(\text{ppm/K}) \times (T - T_o)^2 \times f_{fo} (\text{MHz})$ | |
| Operating temperature range | | - 25 °C ... + 80 °C |
| Storage temperature range | | - 40 °C ... + 85 °C |
| Input power level | - | max. 10 dBm |
| Permissible DC voltage Vdc | - | 12 V |
| Permissible AC voltage Vac | - | 10 V |

Generated:

Dunzow W.P.

Checked/Approved:

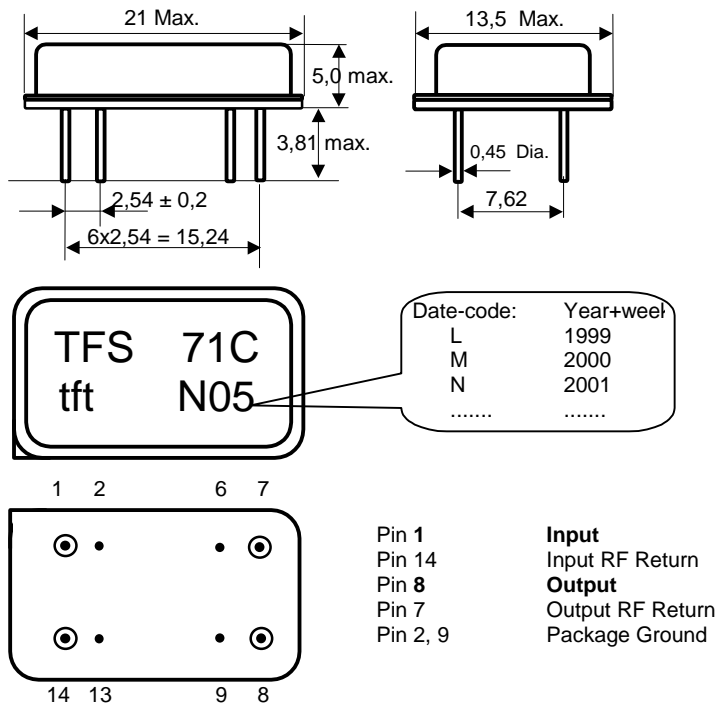
Dr. Bert Wall

VI TELEFILTER
 Potsdamer Straße 18
 D 14 513 TELTOW / Germany
 Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
 E-Mail: tft@telefilter.com

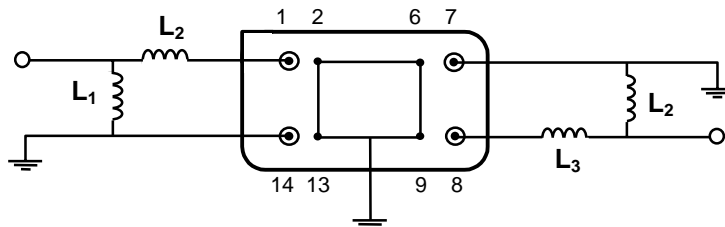
Vectron International, Inc.
 267 Lowell Road
 Hudson, NH 03051 / USA
 Tel: (603) 598-0070 Fax: (603) 598-0075
 E-Mail: vti@vtinh.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

3. Package and pin connection : (All dimensions in mm)



4. 50 Ω - Matching network :



5. 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. | |

Air reflow profile

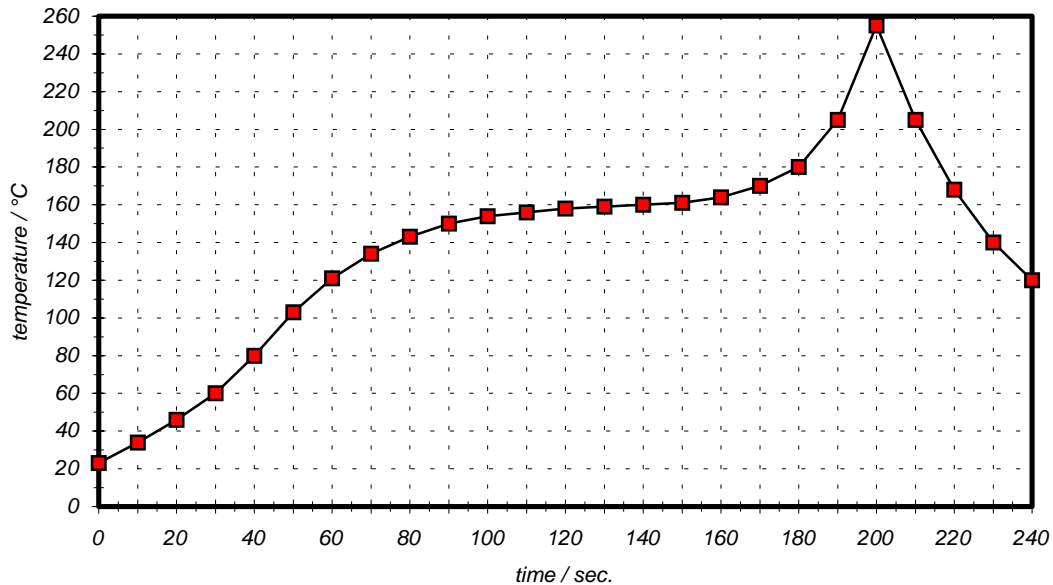


Table for temperature vs. time during the air reflow process

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 |

VI TELEFILTER**Filter Specification****TFS 71C****4/4**

History :

| Version | Reason of Changes | Name | Date |
|----------------|--|-------------|-------------|
| 1.1 | Generate filter specification in actual format. - add termination impedances. | Dunzow W. | 27.02.2001 |

VI TELEFILTER
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30
E-Mail: tft@telefilter.com

Vectron International, Inc.
267 Lowell Road
Hudson, NH 03051 / USA
Tel: (603) 598-0070 Fax: (603) 598-0075
E-Mail: vti@vtinh.com

VI TELEFILTER reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.