

Microchip**Filter specification****TFS 460F****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 460 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed over the whole operating temperature range. The frequency shift of the filter within the operating temperature range is included in the production tolerance scheme.

D a t a		typ. value	tolerance / limit		
Insertion loss (reference level)		a_e	1.7	max.	5.0 dB
Nominal frequency		f_N	-	460	MHz
Passband		PB	-	$f_N \pm$	12.5 MHz
Pass band variation			0.7	max.	2.0 dB
Absolute attenuation		a_{abs}			
360 MHz ... 390 MHz		70	min.	50	dB
405 MHz ... 425 MHz		40	min.	20	dB
530 MHz ... 560 MHz		55	min.	45	dB
Input power level			-	max.	10 dBm
Operating temperature range		OTR	-	- 40 °C ... + 85 °C	
Storage temperature range			-	- 55 °C ... + 85 °C	
Temperature coefficient of frequency		TC_f *	-76	ppm/K	-

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

Generated: _____

Checked / Approved: _____

Microchip Frequency Technology GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30

Microchip Frequency Technology GmbH 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.

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)

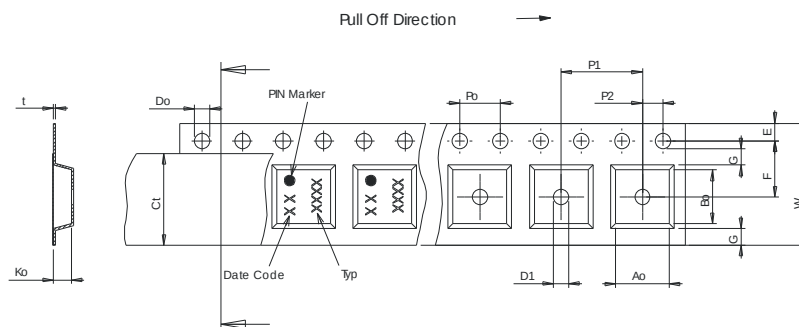
Packing

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

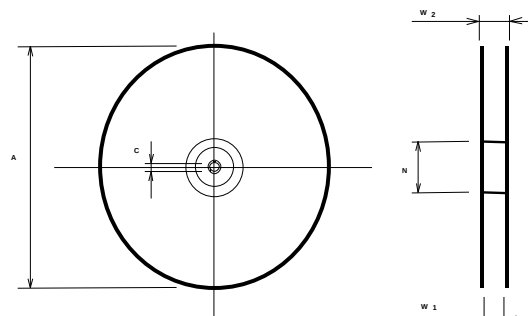
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

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

Microchip Frequency Technology GmbH

Potsdamer Straße 18

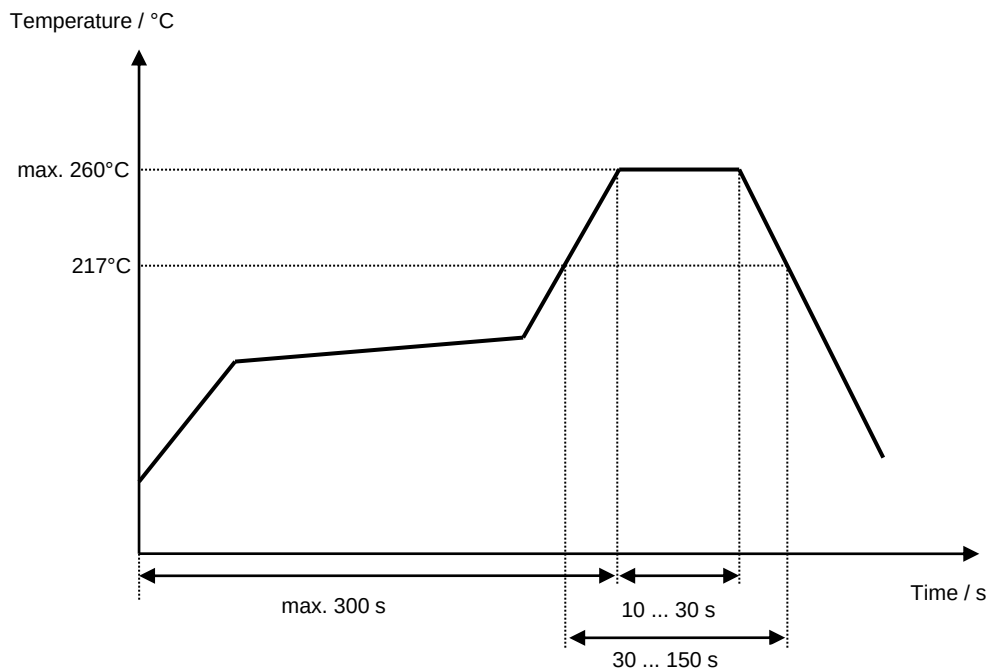
D 14 513 TELTOW / Germany

Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30

Microchip Frequency Technology GmbH 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.

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

Microchip**Filter specification****TFS 460F****5/5****History**

Version	Reason of Changes	Name	Date
1.0	Generation of development specification.	Noack	02.05.2012
1.1	Changed data table.	Schönbein	04.05.2012
1.2	Changed lower storage temperature to -55 °C.	Schönbein	10.05.2012
1.3	Corrected typo in data table.	Schönbein	09.07.2012
1.4	Generation of filter specification.	Schönbein	17.07.2012

Microchip Frequency Technology GmbH**Potsdamer Straße 18****D 14 513 TELTOW / Germany****Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30**

Microchip Frequency Technology GmbH 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.