

Microchip **Preliminary filter specification** **TFS1552C** **1/5**

Measurement condition

Ambient temperature T_A :	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	50	Ω

Characteristics

The maximum attenuation in the passband is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1552.5 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

D a t a		typ. value	tolerance / limit			
Insertion loss in PB		a_e	1.8	max.	4.0	dB
Nominal frequency		f_N	-		1552.5	MHz
Passband		PB	-		$f_N \pm 6.5$	MHz
Passband variation			1.2	max.	2.5	dB
Absolute attenuation		a_{abs}				
1	MHz ... 1240 MHz		36	min.	30	dB
1240	MHz ... 1250 MHz		32	min.	28	dB
1250	MHz ... 1520 MHz		36	min.	30	dB
1520	MHz ... 1536 MHz		18	min.	10	dB
1585	MHz ... 1610 MHz		35	min.	10	dB
1610	MHz ... 3000 MHz		35	min.	30	dB
3000	MHz ... 4500 MHz		28	min.	25	dB
Group delay ripple						
1546	MHz ... 1559 MHz		12	max.	30	ns
Group delay variation (unit to unit)		*)				
1546	MHz ... 1559 MHz		+/-7	max.	+/-10	ns
Return loss within PB			15	min.	10	dB
Input power level in PB			-	max.	20	dBm
Operating temperature range		OTR	-		- 40 °C ... + 105 °C	
Storage temperature range			-		- 55 °C ... + 125 °C	

*) measured at: f_N , $f_N + 6.5$ MHz, $f_N - 6.5$ MHz

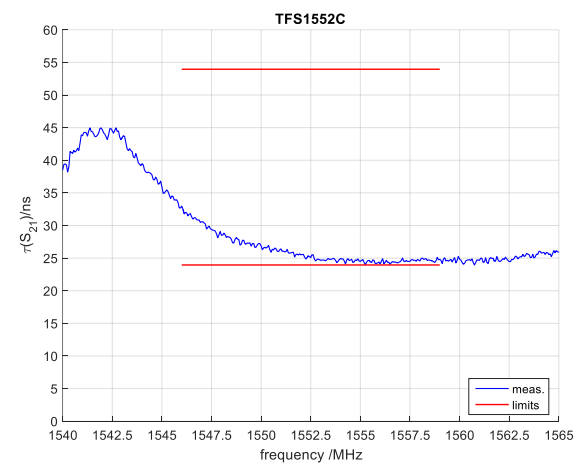
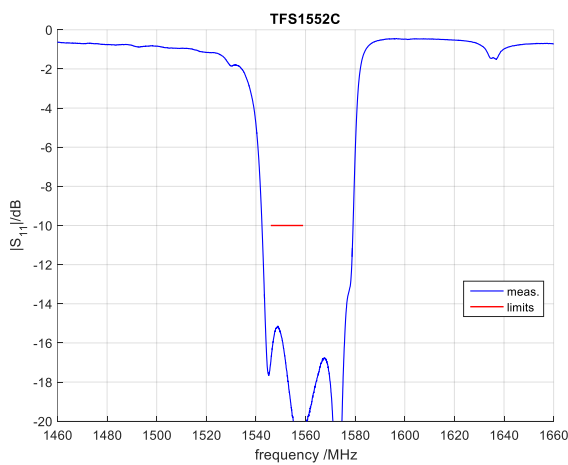
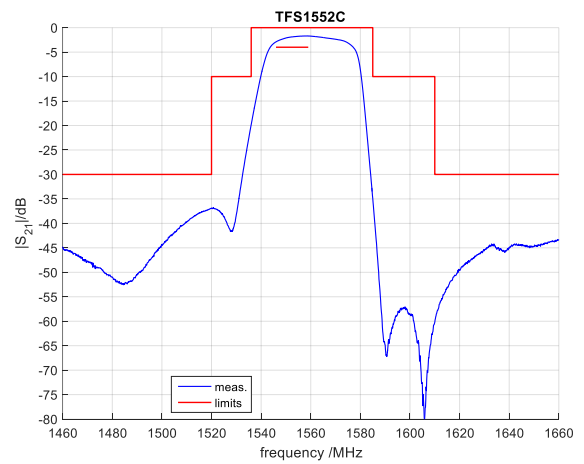
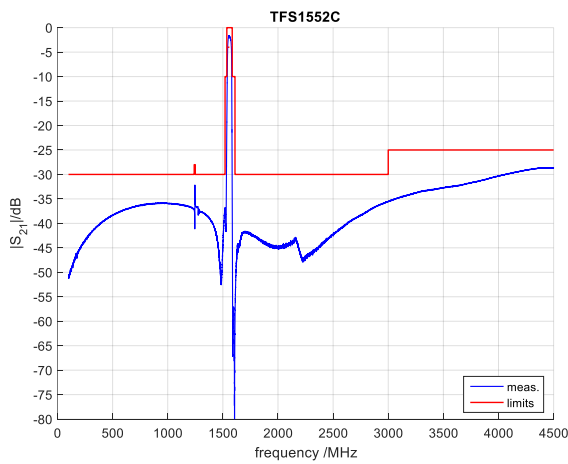
Generated:

Checked / Approved:

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

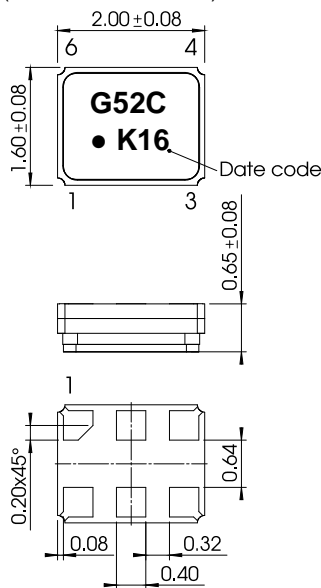
Microchip Frequency Technology GmbH reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Filter characteristic



Construction and pin connection

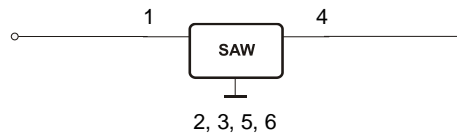
(All dimensions in mm)



- 1 Input
- 2 Ground
- 3 Ground
- 4 Output
- 5 Ground
- 6 Ground

Date code: Year + week
 K 2018
 L 2019
 M 2020
 ...

50 Ω Test circuit



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: 500 g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 60068 T2 - 27
2. Vibration: 10 Hz to 2000 Hz, 0.35 mm or 5 g respectively, 1 octave per min, 10 cycles per plane, 3 planes; DIN IEC 60068 T2 - 6
3. Change of temperature: -55 °C to 125 °C / 15 min. each / 100 cycles
DIN IEC 60068 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;
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

This filter is RoHS compliant (2011/65/EU)

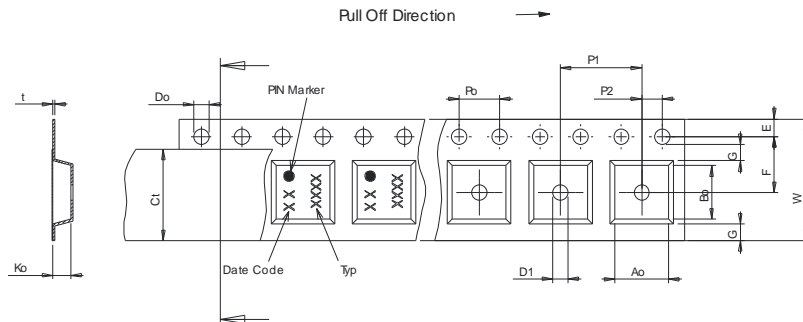
Packing

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;

reel of empty components at start: min. 300 mm
 reel of empty components at start including leader: min. 500 mm
 trailer: min. 300 mm

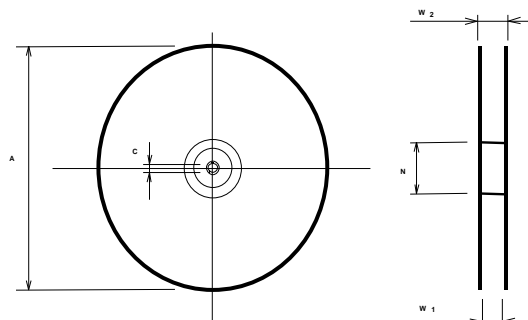
Tape (all dimensions in mm)

- W : 8.00 +0.3/-0.1
- Po : 4.00 ±0.1
- Do : 1.55 ±0.05
- E : 1.75 ±0.1
- F : 3.50 ±0.05
- G(min) : 0.75 .
- P2 : 2.00 ±0.05
- P1 : 4.00 ±0.1
- D1(min) : 1.00
- Ao : 1.80 ±0.05
- Bo : 2.25 ±0.05
- Ct : 5.30 ±0.1
- Ko : 0.90 ±0.05
- t : 0.30 ±0.05



Reel (all dimensions in mm)

- A : 330 or 180
- W1 : 8.40 +1.5/-0
- W2(max) : 14.40
- N(min) : 60.00
- C : 13.0 ±0.2



The minimum bending radius is 45 mm.

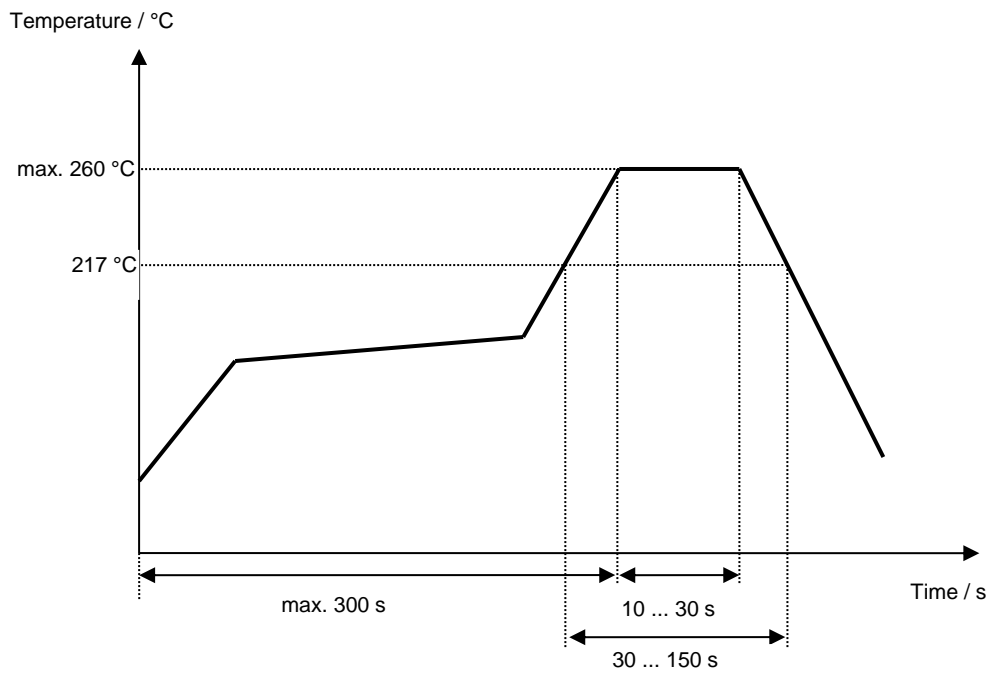
Microchip Frequency Technology GmbH
Potsdamer Straße 18
D 14 513 TELTOW / Germany
Tel: (+49) 3328 4784-0 / Fax: (+49) 3328 4784-30

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 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.

Microchip**Preliminary filter specification****TFS1552C****5/5**

History

Version	Reason of Change	Name	Date
1.0	- Generation of preliminary filter specification	Buchleitner	20.04.2018

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.