

Microchip**Filter specification****TFS 1584A****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 passband is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1584 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 within PB	a_e	2.4	dB	max.	4.0	dB
Nominal frequency	f_N	-			1584.0	MHz
Passband	PB	-		$f_N \pm$	24.0	MHz
Passband variation		1.0	dB	max.	2.5	dB
Absolute attenuation	a_{abs}					
1495 MHz ... 1511 MHz		33	dB	min.	10	dB
1626 MHz ... 1675 MHz		32	dB	min.	20	dB
Group delay ripple within PB		20	ns	max.	60	ns
Return loss within PB		9.5	dB	min.	8	dB
Operating temperature range	OTR	-			- 40 °C ... + 85 °C	
Storage temperature range		-			- 40 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f *)	-42	ppm/K			

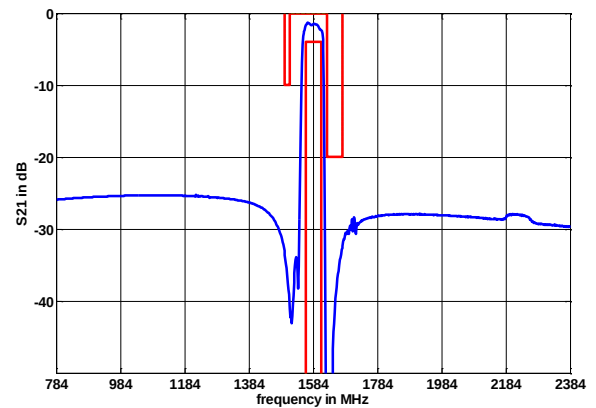
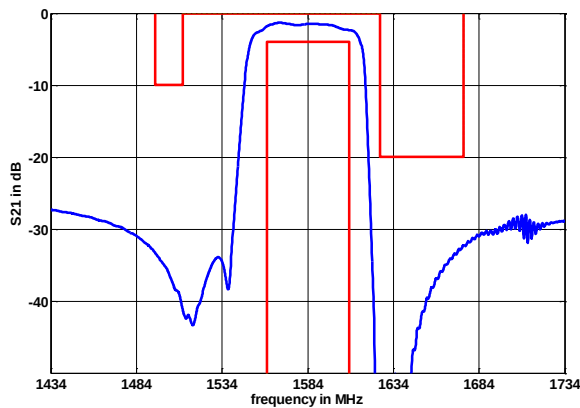
*) $\Delta f(\text{Hz}) = TC_f (\text{ppm/K}) \times (T - T_0) \times f_{T0} (\text{MHz})$

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

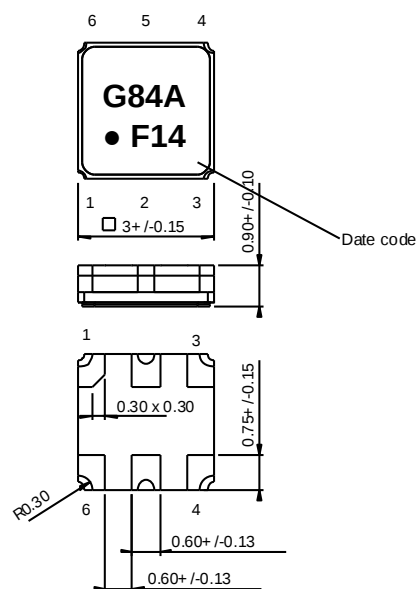
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Filter characteristic



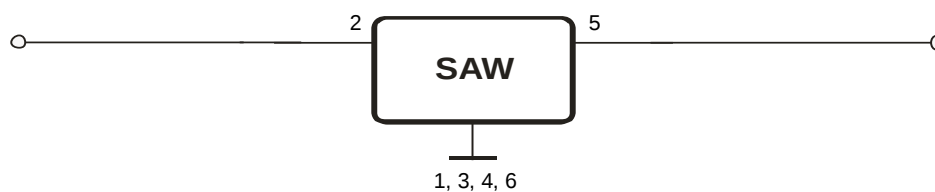
Construction and pin connection

(All dimensions in mm)



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

Date code: Year + week
 F 2015
 G 2016
 H 2017
 ...

50 Ω Test circuit

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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 plane, 3 planes; DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 15 min. each / 100 cycles
DIN IEC 68 part 2 – 14 Test N
4. Resistance to solder heat (reflow): reflow possible: three times max.;
for temperature conditions, see page 4: "Air reflow temperature conditions"

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

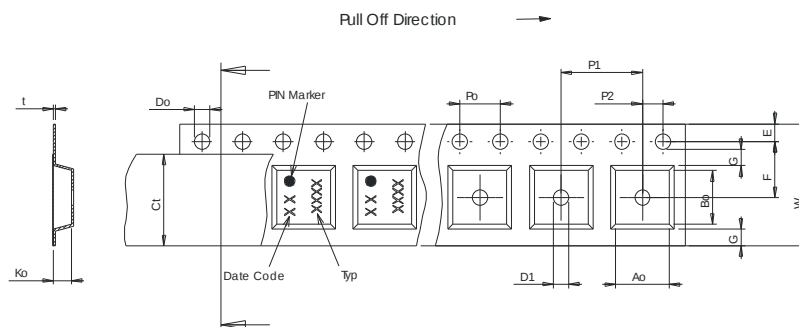
Packing

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;

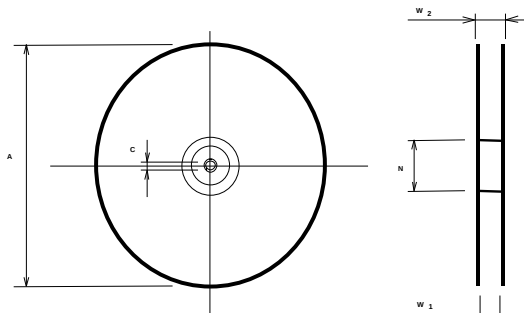
max. pieces of filters per reel:	3000
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

Tape (all dimensions in mm)

W	: 8,00 ± 0,3
Po	: 4,00 ± 0,1
Do	: 1,50 +0,1/-0
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)	: 1,50
Ao	: 3,25 ± 0,1
Bo	: 3,25 ± 0,1
Ct	: 5,3 ± 0,1

**Reel (all dimensions in mm)**

A	: 330 or 180
W1	: 8,4 +1,5/-0
W2(max)	: 14,4
N(min)	: 60
C	: 13,0 ± 0,2



The minimum bending radius is 45 mm.

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Potsdamer Straße 18

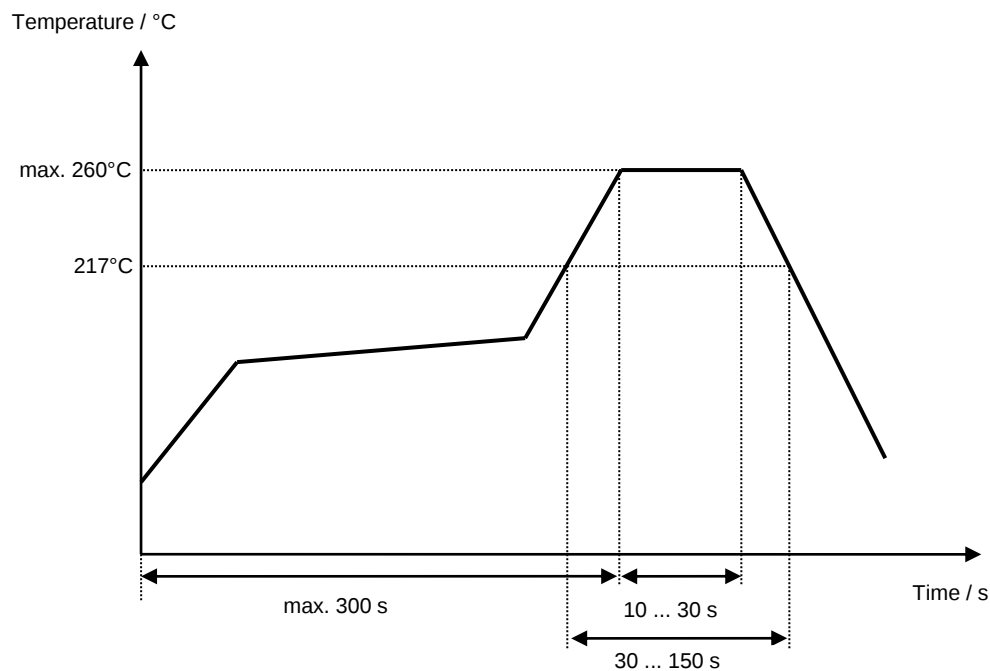
D 14 513 TELTOW / Germany

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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

Microchip**Filter specification****TFS 1584A****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification	A. Molke	05.12.2014
1.1	- Change from development spec to filter spec - Typical values added - Filter characteristic added	A. Molke	02.04.2015