

**Microchip****Filter specification****TFS1030G****1/5****Measurement condition**

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

**Characteristics**

## Remark:

The nominal frequency  $f_N$  is fixed at 1030.0 MHz. The insertion loss  $a_e$  is defined as loss value determined at  $f_N$ . Reference level for the relative attenuation  $a_{rel}$  of the TFS1030G is the insertion loss  $a_e$ . All specified data are met within the operating temperature range.

<b>D a t a</b>		<b>typ. value</b>	<b>tolerance / limit</b>
<b>Insertion loss @ <math>f_N</math></b>	$a_e$	2.7 dB	max. 3.5 dB
<b>Nominal frequency</b>	$f_N$	-	1030.0 MHz
<b>Passband 1</b>	PB1	-	$f_N \pm 8.0$ MHz
<b>Passband 2</b>	PB2	-	$f_N \pm 6.5$ MHz
<b>Passband variation within PB1</b>	PBV1	1.0 dB	max. 1.2 dB
<b>Passband variation within PB2</b>	PBV2	0.5 dB	max. 0.75 dB
<b>Relative attenuation</b>	$a_{rel}$		
10 MHz ... 950 MHz		34 dB	min. 30.0 dB
950 MHz ... 1008 MHz		38 dB	min. 31.5 dB
1008 MHz ... 1010 MHz		29 dB	min. 25.0 dB
1010 MHz ... 1013.5 MHz		15 dB	min. 10.0 dB
1046.5 MHz ... 1051 MHz		22 dB	min. 10.0 dB
1051 MHz ... 1500 MHz		40 dB	min. 31.5 dB
1500 MHz ... 3000 MHz		32 dB	min. 25.0 dB
<b>Absolute group delay @ <math>f_N</math></b>	GD	40 ns	max. 50 ns
<b>Group delay ripple within PB1</b>	GDR	26 ns	max. 60 ns
<b>Group delay ripple within <math>f_N \pm 4</math> MHz</b>	GDR	10 ns	max. 25 ns
<b>VSWR within PB1</b>	VSWR	1.5:1	max. 2.3:1
<b>Input power level</b>		-	max. 20 *) dBm
<b>Operating temperature range</b>	OTR	-	-40 °C ... +85 °C
<b>Operable temperature range</b>		-	-40 °C ... +95 °C
<b>Storage temperature range</b>		-	-65 °C ... +125 °C

\*) 20 dBm cw over lifetime. 30 dBm for on-time 30 s / day, duty cycle 10 %.

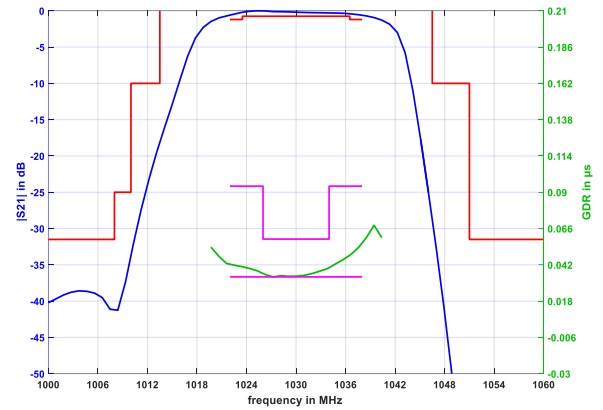
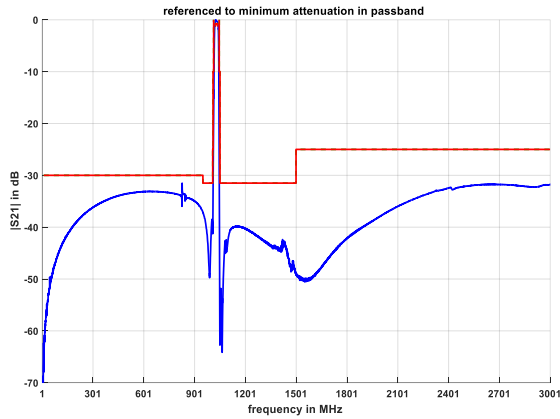
**Generated:** \_\_\_\_\_

**Checked / Approved:** \_\_\_\_\_

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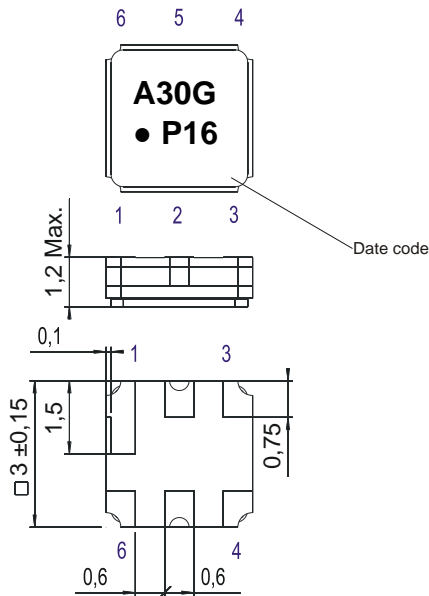
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Filter characteristic



Construction and pin connection

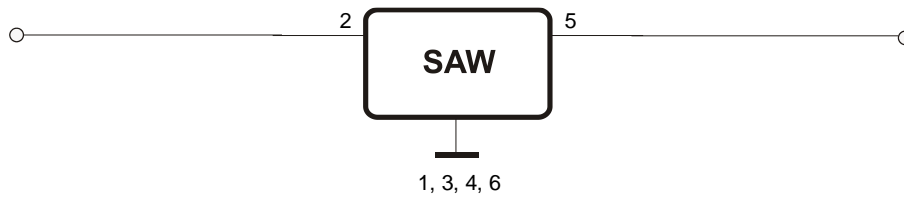
(All dimensions in mm)



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

Date code: Year + week  
 P 2022  
 R 2023  
 S 2024  
 ...

50 Ω Test circuit



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**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)

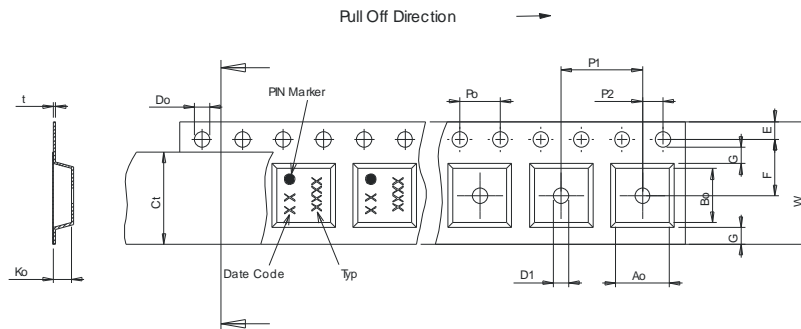
**Packing**

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

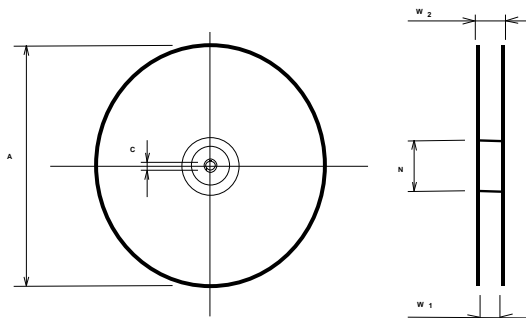
**Tape (all dimensions in mm)**

- W : 8.00 ±0.3
- 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 : 5.30 ±0.1
- Ko : 1.50 ±0.1
- t : 0.25 ±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.

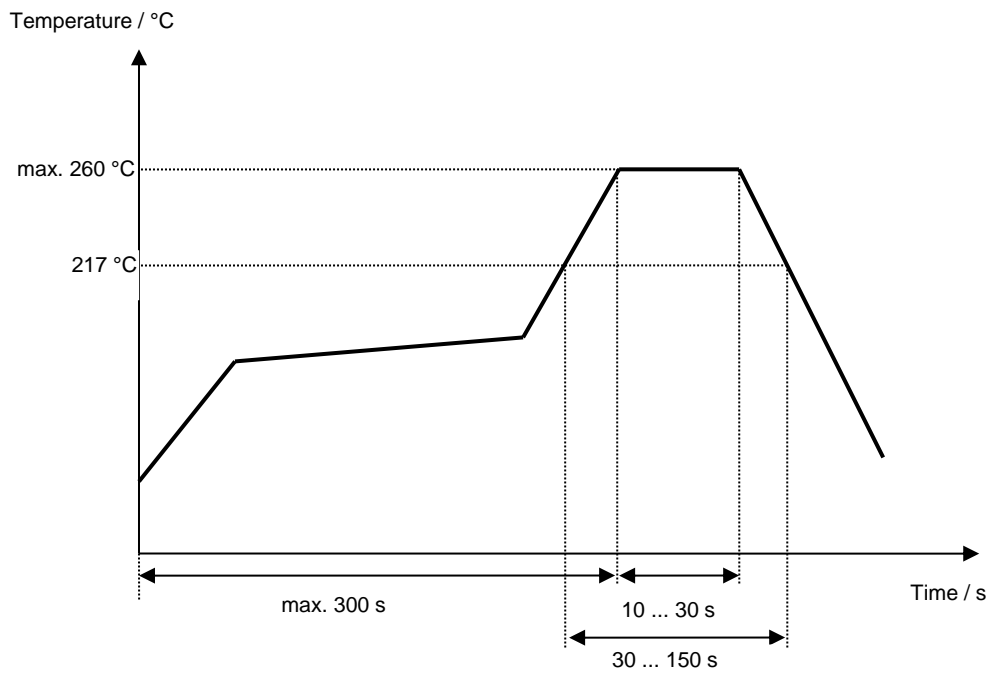
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**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
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**



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**Microchip****Filter specification****TFS1030G****5/5****History**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	Generation of development specification.	Schönbein	09.10.19
2.0	Generation of filter specification.	Schönbein	06.05.20
2.1	Typical values added to data table.	Schönbein	08.05.20
2.2	- Update of data table (reference for insertion loss and storage temperature range) - Update of filter characteristics	Schönbein	25.08.21
3.0	Added group delay ripple within $f_N \pm 4$ MHz	P. Jaster	20.04.22

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