

Microchip	Filter specification	TFS1429A	1/5
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Measurement condition

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

Characteristics

Remark:

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The maximum attenuation in the pass band 1 is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1429.5 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 at PB1	a_e	3.7	dB	max.	6.0	dB
Insertion loss at PB2		4.1	dB	max.	7.5	dB
Nominal frequency	f_N	-			1429.5	MHz
Passband 1	PB1			f_N	- 4.0 /+ 4.5	MHz
Pass band ripple		0.5	dB	max.	2.5	dB
Passband 2	PB2			f_N	\pm 6.0	MHz
Pass band ripple 2		1.0	dB	max.	3.5	dB
Absolute attenuation	a_{abs}					
0.3 MHz ... 1371 MHz		55	dB	min.	50	dB
1488 MHz ... 2000 MHz		54	dB	min.	45	dB
VSWR at PB1		1.4 : 1		max.	3 : 1	
Input power level		-		max.	10	dBm
Operating temperature range	OTR	-			- 40 °C ... + 70°C	
Storage temperature range		-			- 40 °C ... + 85°C	
Temperature coefficient of frequency	TC_f *	-37	ppm/K		-	

*) $\Delta f = TC_f(T - T_A)f_N$

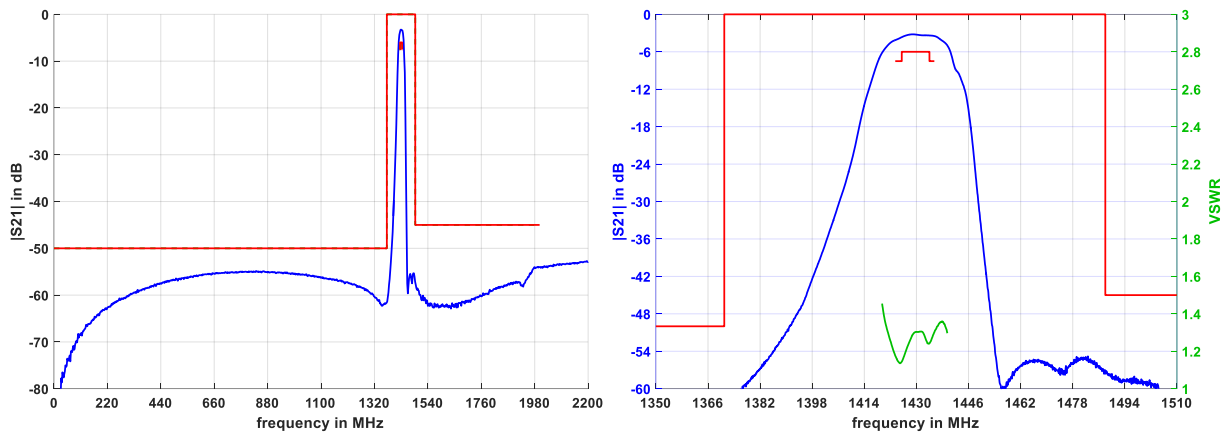
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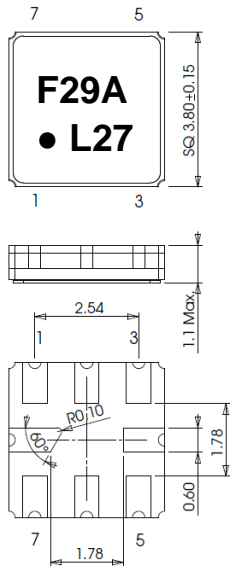
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Filter characteristic



Construction and pin connection

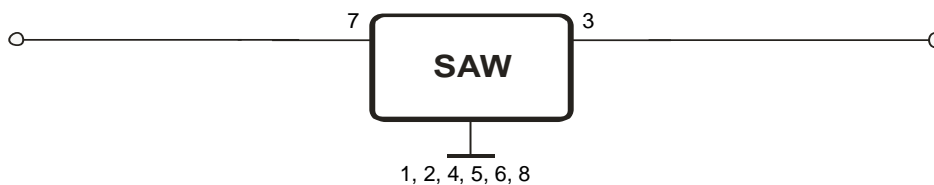
(All dimensions in mm)



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

Date code: Year + week
 L 2019
 M 2020
 N 2021
 ...

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.

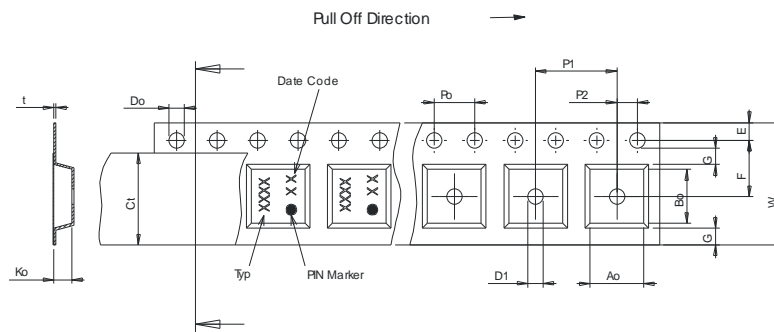
This filter is RoHS compliant (2011/65/EU)

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 |

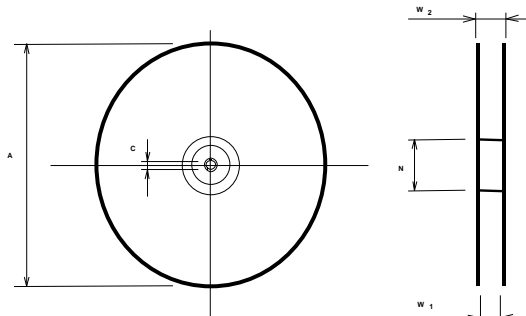
Tape (all dimensions in mm)

- W : 12.00 ±0.3
- Po : 4.00 ±0.1
- Do : 1.50 +0.1/-0
- E : 1.75 ±0.1
- F : 5.50 ±0.05
- G(min) : 0.75
- P2 : 2.00 ±0.05
- P1 : 8.00 ±0.1
- D1(min) : 1.50
- Ao : 4.30 ±0.1
- Bo : 4.30 ±0.1
- Ct : 9.2 ±0.1
- Ko : 1.80 ±0.1
- t : 0.30 ±0.05



Reel (all dimensions in mm)

- A : 330 or 180
- W1 : 12.4 +2/-0
- W2(max) : 18.40
- N(min) : 50.00
- C : 13.0 +0.5/-0.2



The minimum bending radius is 45 mm.

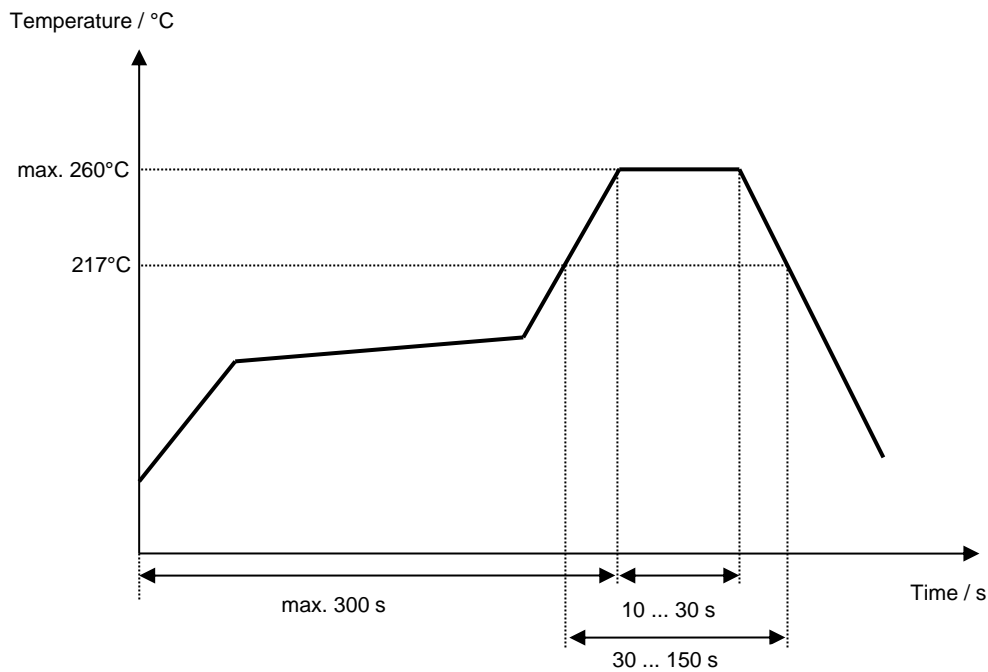
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Air reflow temperature conditions

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



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Microchip**Filter specification****TFS1429A****5/5**

History

1.0	- Generation of development specification	Strehl	10.08.2007
1.1	- Add typ. value and filter characteristic - Generation of filter characteristic	Strehl	01.04.2008
1.2	- Changed typical values to meet temperature requirement	Noack	14.05.2008
1.3	- Update format changes in data table, header and footer	S. Springfeldt	20.03.2017
1.4	- Update images and typical values	S. Springfeldt	02.07.2019

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