

Microchip**Filter specification****TFS1575AW****1/5****Measurement condition**

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

Characteristics

Remark:

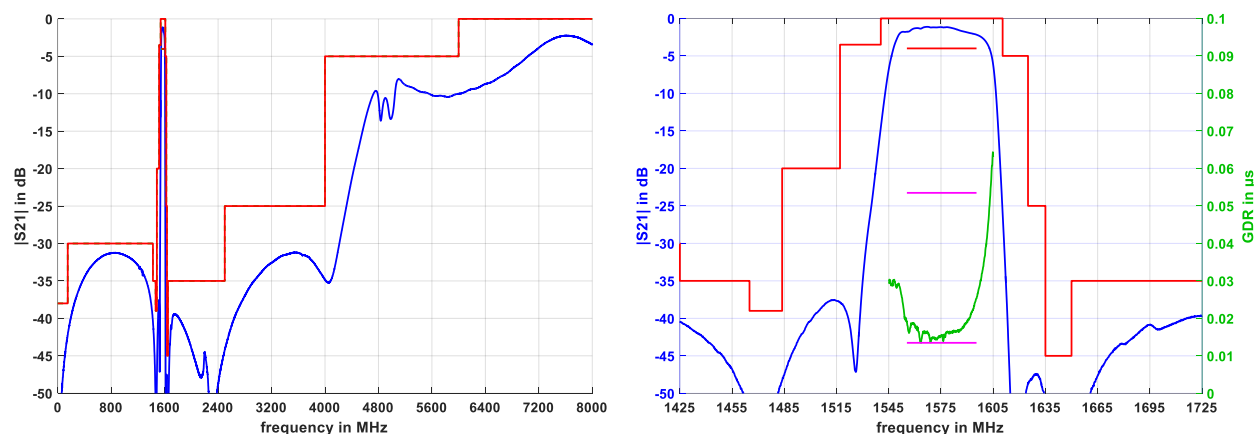
The maximum attenuation in the pass band is defined as the insertion loss a_e . The nominal frequency f_N is fixed at 1575.42 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed over the whole operating temperature range. The frequency shift of the filter within the operating temperature range is included in the production tolerance scheme.

D a t a					typ. value		tolerance / limit			
Insertion loss					a_e	2.2	dB	max.	4.0	dB
Nominal frequency					f_N	-			1575.42	MHz
Passband					PB	-		$f_N \pm$	20.0	MHz
Passband variation						1.1	dB	max.	2.4	dB
Absolute attenuation					a_{rel}					
10.00	MHz	...	150.00	MHz		42	dB	min.	38.0	dB
150.00	MHz	...	1425.00	MHz		31	dB	min.	30.0	dB
1425.00	MHz	...	1465.00	MHz		40	dB	min.	35.0	dB
1465.00	MHz	...	1483.75	MHz		47	dB	min.	39.0	dB
1483.75	MHz	...	1517.00	MHz		37	dB	min.	20.0	dB
1517.00	MHz	...	1540.42	MHz		15	dB	min.	3.5	dB
1610.42	MHz	...	1625.00	MHz		25	dB	min.	5.0	dB
1625.00	MHz	...	1635.00	MHz		47	dB	min.	25.0	dB
1635.00	MHz	...	1650.00	MHz		50	dB	min.	45.0	dB
1650.00	MHz	...	2500.00	MHz		39	dB	min.	35.0	dB
2500.00	MHz	...	4000.00	MHz		31	dB	min.	25.0	dB
4000.00	MHz	...	6000.00	MHz		8	dB	min.	5.0	dB
6000.00	MHz	...	8000.00	MHz		2	dB	min.	0.0	dB
Absolute group delay @ f_N					AGD	16	ns	max.	± 6	ns
Group delay ripple within PB					GDR	12	ns	max.	40	ns
Δ GDR(f_N - 5 MHz, f_N + 5 MHz)						2	ns	max.	3	ns
Δ GDR(f_N - 10 MHz, f_N + 10 MHz)						1	ns	max.	7	ns
Δ GDR(f_N - 15 MHz, f_N + 15 MHz)						5	ns	max.	14	ns
Δ GDR(f_N - 20 MHz, f_N + 20 MHz)						7	ns	max.	26	ns
Return loss within PB					RL	15	dB	min.	12	dB
Input power level						-				
Continuous wave over life time within PB								max.	15	dBm
Continuous wave cumulative over 200 h within PB								max.	25	dBm
Continuous wave cumulative over 200 h out of band **								max.	30	dBm
Operating temperature range					OTR	-			-46 °C ... 105 °C	
Storage temperature range						-			-55 °C ... 125 °C	
Temperature coefficient of frequency					TC_f *)	-42	ppm/K		-	

*) $\Delta f = TC_f (T - T_A) f_N$ **) out of band < $f_N - 75$ MHz and > $f_N + 75$ 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**

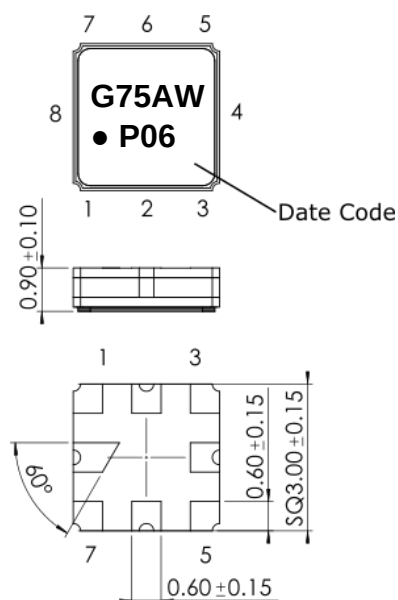
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Filter characteristic



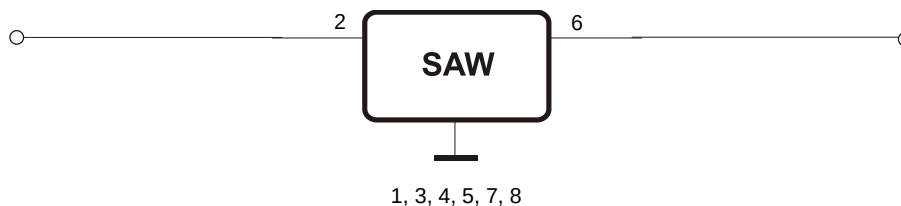
Construction and pin connection

(All dimensions in mm)



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

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

50 Ω Test circuit

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Stability characteristics, reliability

1. Shock: 1500 g, 0.5 ms, half sine wave, 5 Shocks each of the orientations acc. to MIL-STD-883, Method 2002, Cond. B
2. Vibration: 10 Hz to 2000 Hz, 20 g acc. to MIL-STD-883, Method 2007, Cond. A
3. Temperature cycling: 100 cycles, -55 °C to 125 °C / 15 min. dwell time acc. to MIL-STD-883, Method 1010, Cond. B
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+2015/863/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;

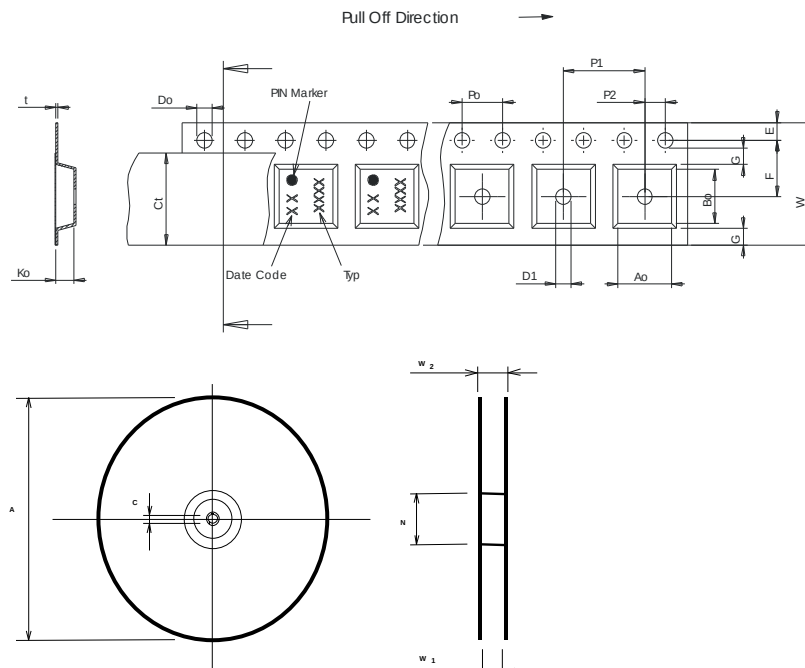
reel of empty components at start: min. 300 mm
reel of empty components at start including leader: min. 500 mm
trailer: min. 300 mm

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)

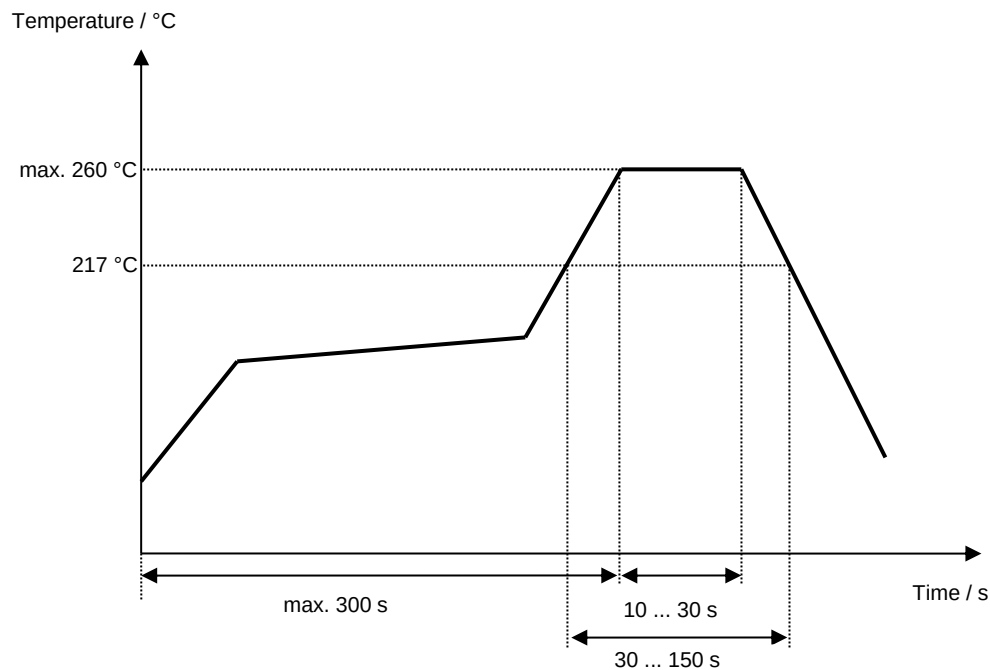
A	: 330 or 180
W1	: 8.40 +1.5/-0
W2(max)	: 14.40
N(min)	: 60.00
C	: 13.0 ±0.2



The minimum bending radius is 45 mm.

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****TFS1575AW****5/5****History**

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification based on 1575_RFQ32_11ic	P. Jaster	30.06.2020
2.0	- Updated data table	P. Jaster	14.07.2020
3.0	- Generating filter specification with change of data table (customer requirements)	S. Springfeldt	04.12.2020
4.0	- Updating data table due to customer request (group delay)	S. Springfeldt	07.02.2022

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