Measurement condition

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

Input : 143 Ω || -0.4 pF
Output : 143 Ω || -0.4 pF

Characteristics

Reference level for the relative attenuation a_{rel} is the minimum of the pass band attenuation a_{min}. The minimum of the pass band attenuation a_{min} is defined as the insertion loss a_e. The centre frequency f_C is the arithmetic mean value of the upper and lower frequencies at the -3 dB filter attenuation level relative to the insertion loss a_e. The nominal frequency f_N is fixed at 780 MHz without tolerance. The values of relative attenuation a_{rel} 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	$a_e = a_{min}$	3.9	dB	max.	5.5	dB
Nominal frequency	f_N				780.0	MHz
Centre frequency	f_C	780.0	MHz			
Passband	PB			f_N ±	20.0	MHz
Pass band variation **		0.7	dB	max.	2.0	dB
Relative attenuation	a_{rel}					
f_N - 680 MHz … f_N - 160 MHz		46	dB	min.	40	dB
f_N + 120 MHz … f_N + 260 MHz		53	dB	min.	30	dB
f_N + 260 MHz … f_N + 300 MHz		54	dB	min.	45	dB
f_N + 300 MHz … f_N + 720 MHz		51	dB	min.	40	dB
Operating temperature range	OTR	-		-25 °C ... + 75°C		
Storage temperature range		-		-55 °C ... +125°C		
Temperature coefficient of frequency	TC_f *	-74	ppm/K			

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

Generated:

Checked / Approved:

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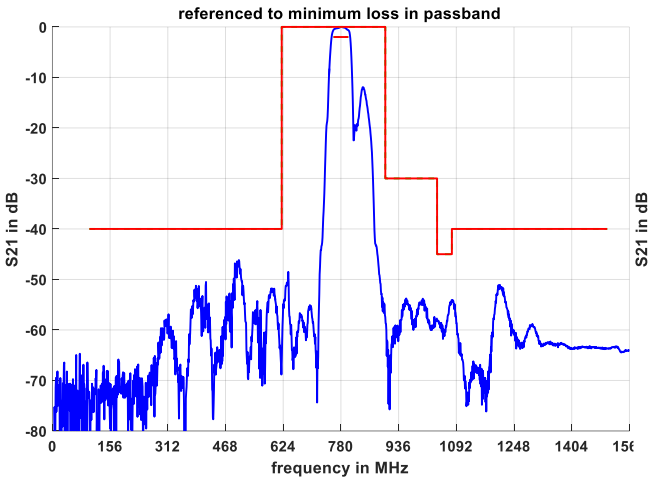
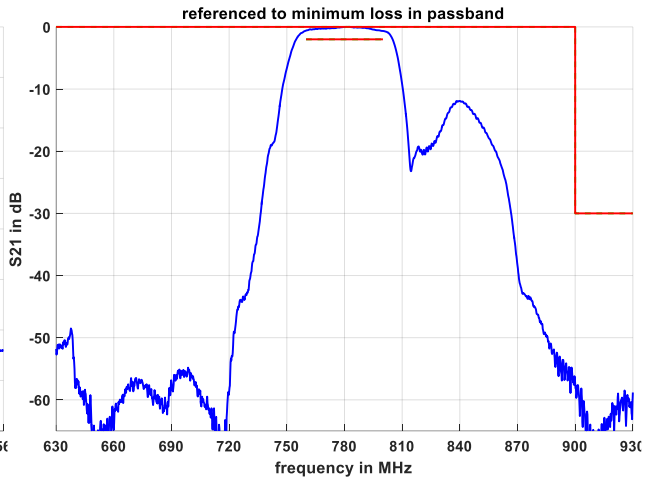
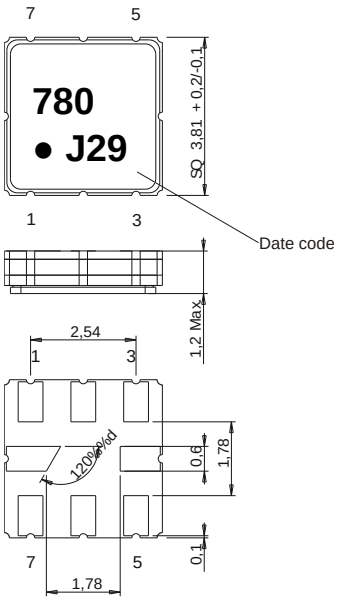
Filter characteristic





Construction and pin connection

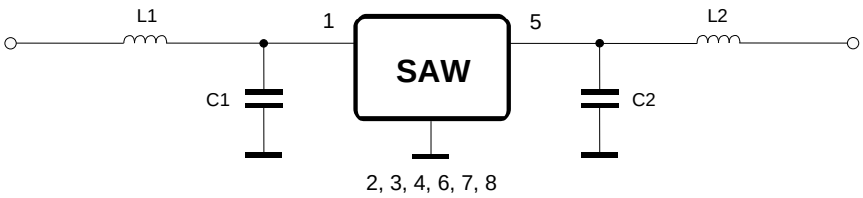
(All dimensions in mm)



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

Date code:	Year + week
H	2016
J	2017
K	2018
...	

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;

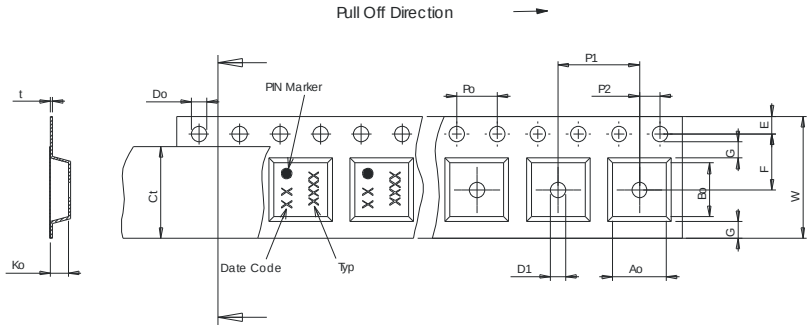
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

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

Packing

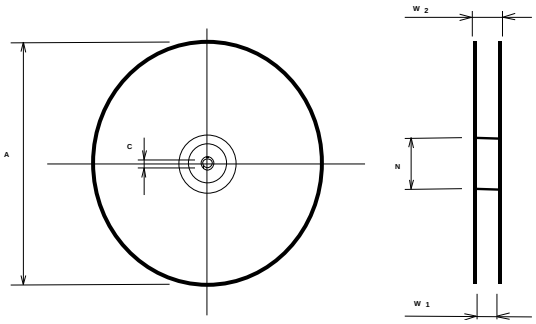
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

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



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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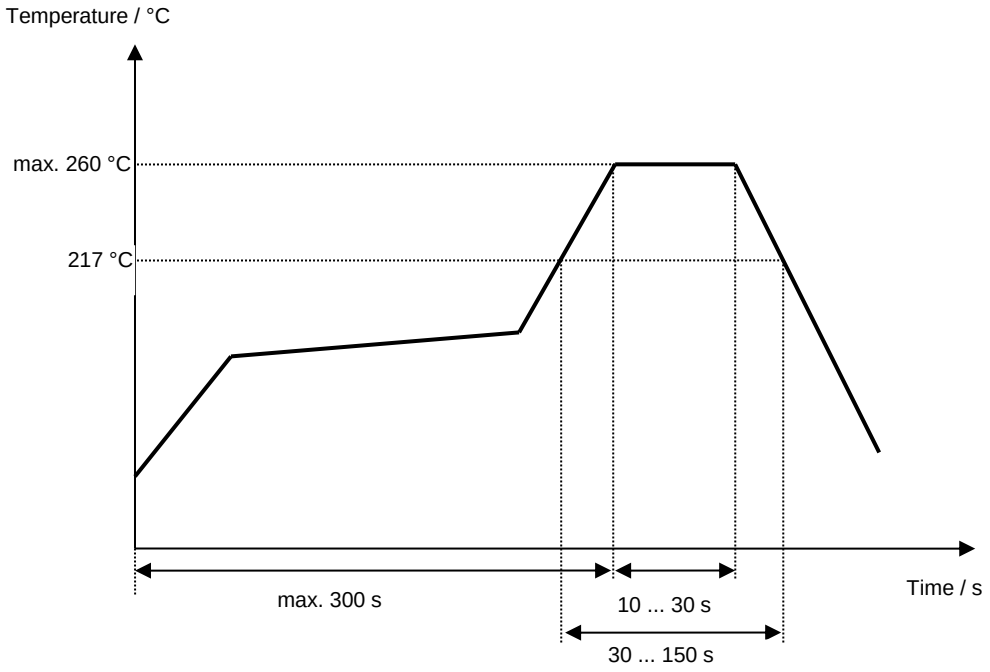
Air reflow temperature conditions

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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History

Version	Reason of Changes	Name	Date
1.0	- Generation of development specification according to customer specification	Dr. Sabah	29.08.2001
1.1	- Change of relative attenuation	Dr. Sabah	13.09.2001
1.2	- Filter specification, add of typical values and terminating impedance		
	- Clarify parameter of relative attenuation in pass band, and pass band ripple		
	- Package height max. 1,2mm	Dr. Sabah	21.02.2003
1.3	- Add filter characteristic, add reliability	S. Channaa	10.05.2007
2.0	- Change format		
	- Change tape and reel direction	S. Springfeldt	29.09.2016
2.1	- Adjusting of terminating impedance according to application note	S. Springfeldt	19.07.2017

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