rangeMeasurement condition

Ambient temperature T_A: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 86 Ω || -34 pF
Output: 86 Ω || -34 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS44Y is the minimum of the pass band attenuation. This value is defined as the insertion loss a_e. The nominal frequency f_N is fixed at 44.85 MHz without any 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	8.5	dB	max.	9.5	dB
Nominal frequency	f_N	-			44.85	MHz
Passband	PB				f_N ± 2.5	MHz
Amplitude ripple within PB		0.5	dB	max.	1	dB
Relative attenuation	a_{rel}					
f_N ± 2.5 MHz		0.5	dB	max.	1	dB
f_N - 3.89 MHz		22	dB	min.	15	dB
f_N ± 5 MHz ... f_N ± 10 MHz		27	dB	min.	20	dB
f_N ± 10 MHz ... f_N ± 15 MHz		43	dB	min.	30	dB
f_N ± 15 MHz ... f_N ± 20 MHz		44	dB	min.	40	dB
Input power level		-		max.	20	dBm
Operating temperature range	OTR	-			-40 ... +85	°C
Storage temperature range					-55 ... +125	°C
Temperature coefficient of frequency	TC_f*)	-80	ppm/K			

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

Generated:

Checked / Approved:

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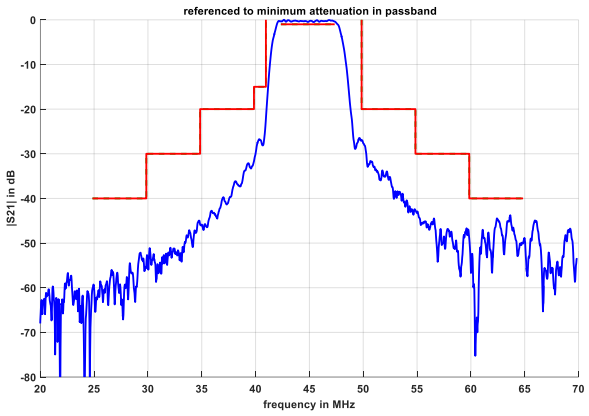
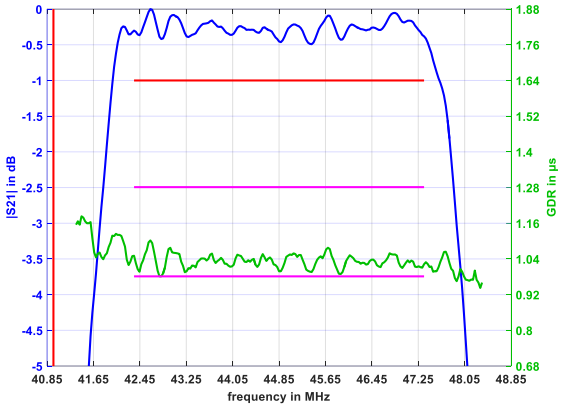
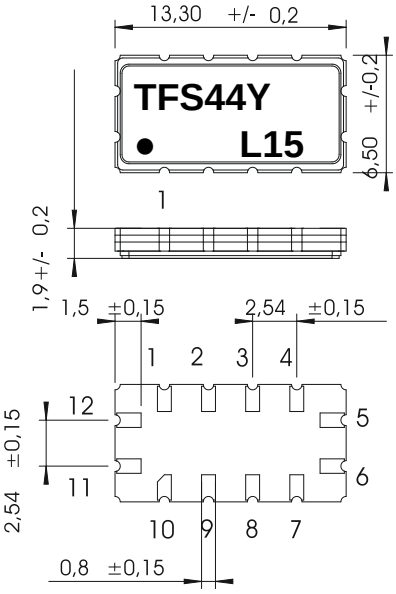
Filter characteristic





Construction and pin connection

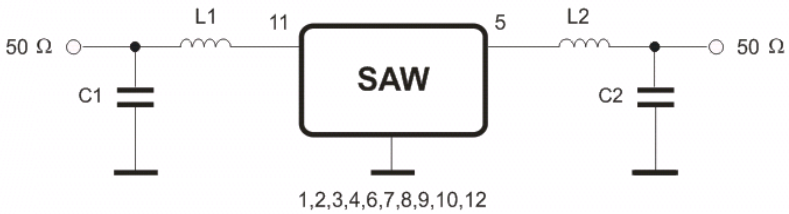
(All dimensions in mm)



1	Ground
2	Ground
3	Ground
4	Ground
5	Output
6	Ground
7	Ground
8	Ground
9	Ground
10	Ground
11	Input
12	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;

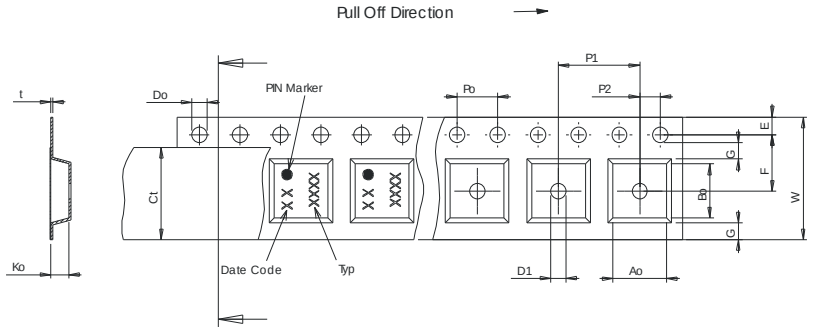
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

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

Packing

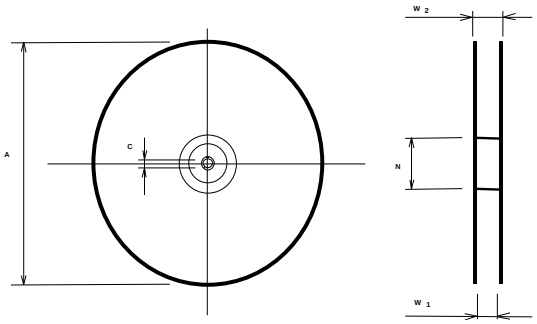
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

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	:	24.00	+0.30/-0.10
Po	:	4.00	±0.1
Do	:	1.50	+0.1/0
E	:	1.75	±0.10
F	:	11.50	±0.10
G(min)	:	0.60	
P2	:	2.00	±0.1
P1	:	12.00	±0.1
D1(min)	:	1.50	
Ao	:	7.00	±0.10
Bo	:	13.80	±0.10
Ct	:	21.00	±0.1
Ko	:	2.10	±0.10
t	:	0.30	±0.05



Reel (all dimensions in mm)

A	:	330	or 180
W1	:	24.4	+2/-0
W2(max)	:	30.40	
N(min)	:	60.00	
C	:	13.0	+0.5/-0.2

The minimum bending radius is 45 mm.

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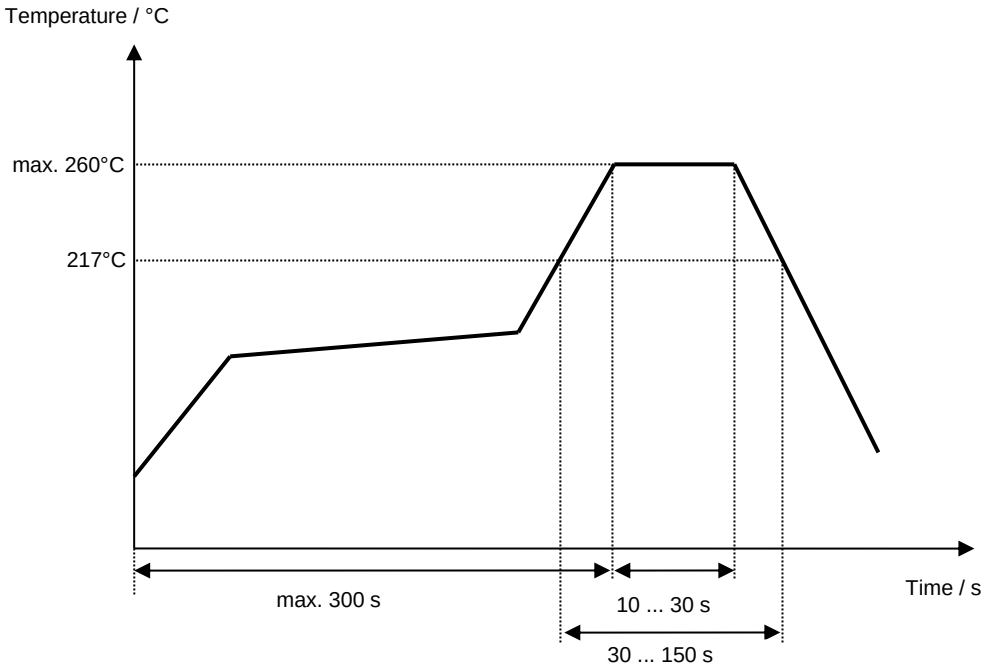
Air reflow temperature conditions

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	Bonnen	09.04.2019
1.1	Add plots, typical values and move to filter specification	Jaffer	20.06.2019
2.0	Extend operational temperature range as per customer request	Bonnen	01.07.2019

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