Measurement condition

Ambient temperature T_A: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 464 Ω || -17.4 pF
Output: 511 Ω || -15.9 pF

Characteristics

Remark:
The reference level for the relative attenuation a_{rel} of the TFS125V 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 125 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	5.6	dB	max.	6.5	dB
Nominal frequency	f_N				125	MHz
Passband	PB				f_N ± 0.2	MHz
Amplitude ripple within PB		0.4	dB	max.	1	dB
Amplitude ripple within f_N... f_N ± 0.1MHz		0.1	dB	max.	0.5	dB
Relative attenuation	a_{rel}					
f_N ± 0.2 MHz		0.4	dB	max.	1	dB
f_N ± 1.1 MHz ... f_N ± 50 MHz		38	dB	min.	35	dB
f_N + 50 MHz ... f_N + 70 MHz		70	dB	min.	50	dB
f_N + 70 MHz ... f_N + 110 MHz		43	dB	min.	40	dB
f_N + 110 MHz ... f_N + 1435 MHz		80	dB	min.	50	dB
Group delay (p-p) within PB		58		max.	125	ns
Group delay (p-p) within f_N... f_N ± 0.1MHz		40		max.	70	ns
Return loss within PB		17		min.	10	dB
Input power level				max.	18	dBm
Operating temperature range	OTR				-55 ... +85	°C
Storage temperature range					-55 ... +125	°C
Frequency inversion temperature	T_0	51.7	°C			
Temperature coefficient of frequency	TC_f*)	-0.035	ppm/K²			

*) $\Delta f = TC_f(T - T_0)^2 f_N$

Generated:

Checked / Approved:

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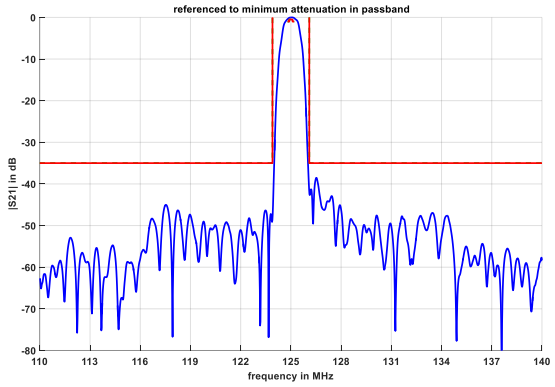
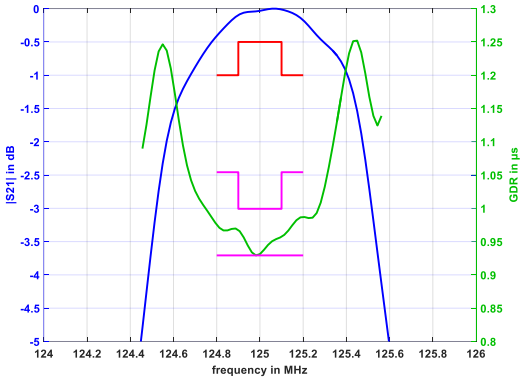
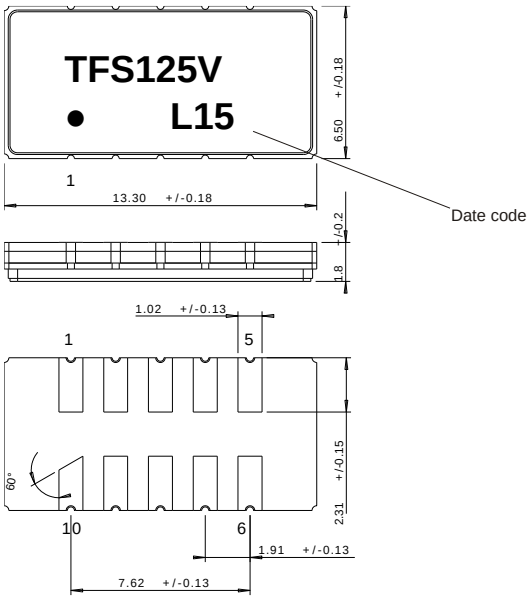
Filter characteristic





Construction and pin connection

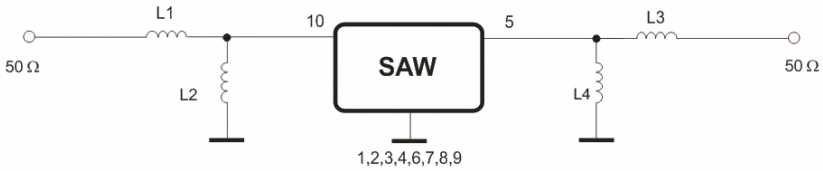
(All dimensions in mm)



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

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;

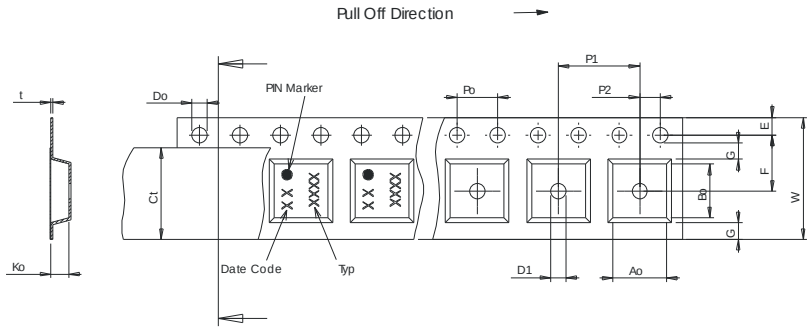
5. SAW devices are Electrostatic Discharge (ESD) sensitive devices.

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

Packing

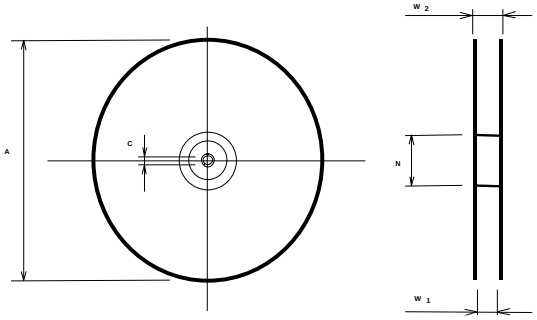
Tape & Reel: IEC 286 – 3, with exception of value for N and minimum bending radius;
tape type II, embossed carrier tape with top cover tape on the upper side;

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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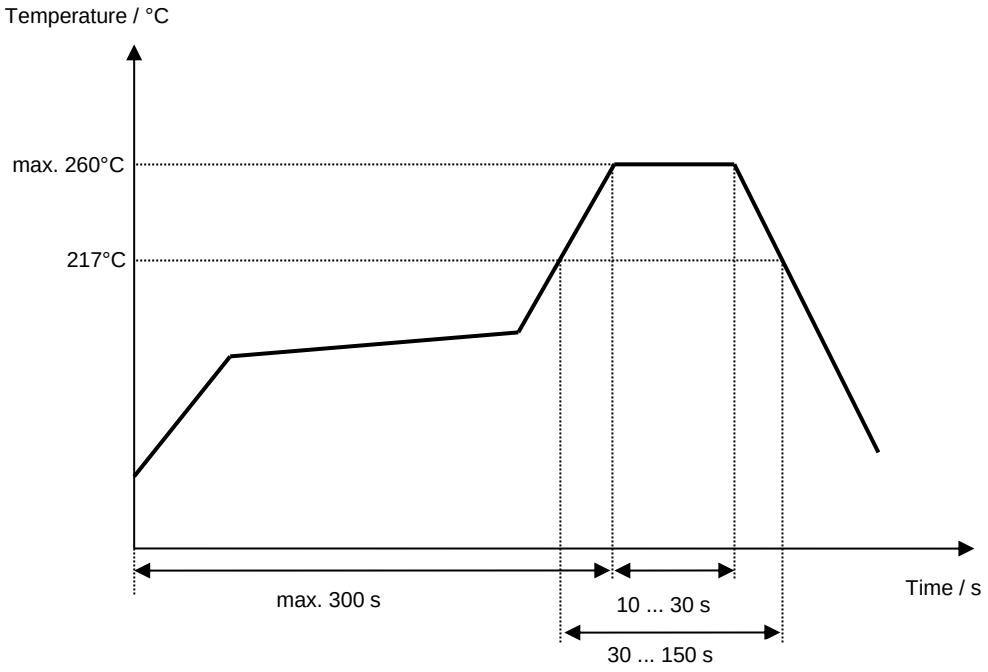
Air reflow temperature conditions

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	10.04.2019
1.1	Update spec as per customer request: - 35dB rej. start at fN ± 1.1MHz. - passband ripple fN... fN ± 0.1MHz 0.5dB max. - input power 18dBm max.	Jaffer	17.04.2019
2.0	Generate filter specification - add typ. values and response plots - ammed rejection from - fN + 50MHz … fN + 1435 MHz, 50dB min - to - fN + 50MHz … fN +70, 50dB min. - fN + 70MHz … fN +110, 50dB ➔ 40dB min. - fN + 110MHz … fN +1435, 50dB min.	Jaffer	02.09.2019

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