Vectron International — Filter specification — TFS 868T — 1/5

Measurement condition

Ambient temperature T_A: 23 °C
Input power level: 0 dBm
Terminating impedance: *
Input: 120 Ω || -2.4 pF
Output: 140 Ω || -2.4 pF

Characteristics

Remark:
Reference level for the relative attenuation a_{rel} of the TFS868T 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 868.80 MHz without tolerance. The given values for the relative attenuation a_{rel} have to be reached at the frequencies given below even if the centre frequency f_C is shifted due to the temperature coefficient of frequency TC_f in the operating temperature range and due to a production tolerance for the centre frequency f_C.

D a t a		typ. value		tolerance / limit		
Insertion loss (reference level)	a_e	2.85	dB	max.	3.6	dB
Nominal frequency	f_N	-			868.80	MHz
Centre frequency	f_C	868.80	MHz		-	
Passband	PB	1.30	MHz	min.	± 300	kHz
Passband ripple	p-p	0.6	dB	max.	3	dB
Amplitude ripple f_N ± 200kHz	p-p	0.45	dB	max.	2	dB
Relative attenuation	a_{rel}					
f_N … f_N ± 200.0 kHz		0.45	dB	max.	2	dB
f_N ± 200.0 kHz … f_N ± 300.0 kHz		0.52	dB	max.	3	dB
f_N - 858.3 MHz … f_N - 12.3 MHz		56	dB	min.	50	dB
f_N - 12.3 MHz … f_N - 2.8 MHz		36	dB	min.	30	dB
f_N + 2.7 MHz … f_N + 11.7 MHz		41	dB	min.	30	dB
f_N + 11.7 MHz … f_N + 21.7 MHz		43	dB	min.	40	dB
f_N + 21.7 MHz … f_N + 27.7 MHz		51	dB	min.	45	dB
f_N + 27.7 MHz … f_N + 131.7 MHz		57	dB	min.	50	dB
Input power level		-		max.	12	dBm
Operating temperature range	OTR	-		- 20 °C ... + 70 °C		
Storage temperature range		-		- 55 °C ... + 125 °C		
Frequency inversion temperature		10	°C		-	
Temperature coefficient of frequency	TC_f **	-0.033	ppm/K^2		-	

*) The terminating impedances depend on parasitics and q-values of matching elements and the board used and are to be understood as reference values only. Should there be additional questions do not hesitate to ask for an application note or contact our design team.
**) $\Delta f = TC_f (T - T_0)^2 f_N$

Generated:

Checked / Approved:

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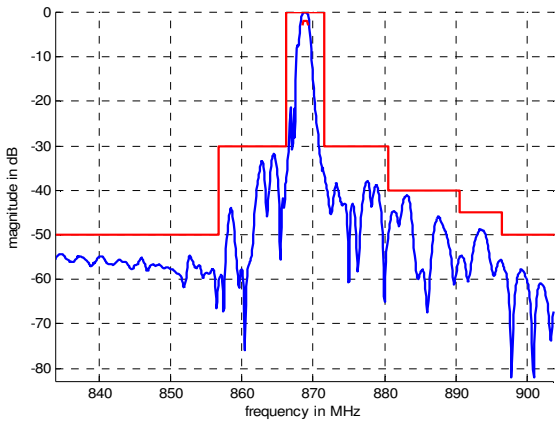
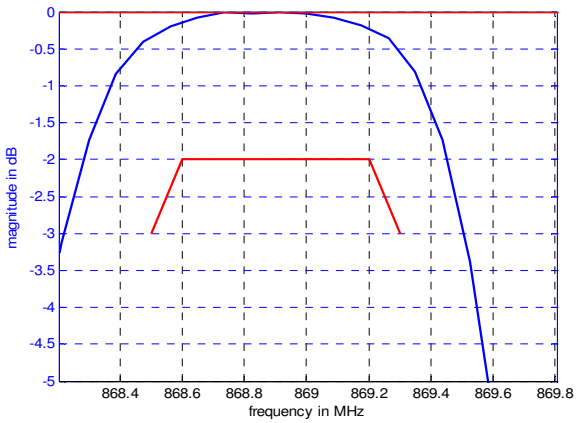
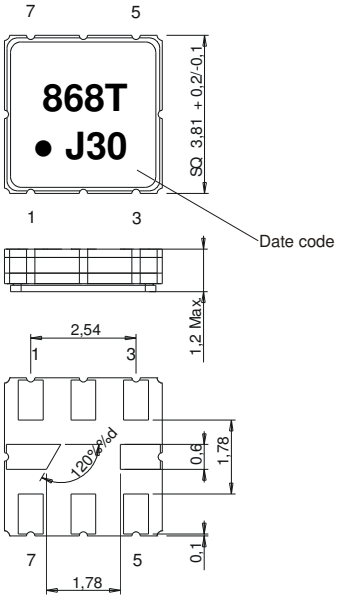
Filter characteristic





Construction and pin connection

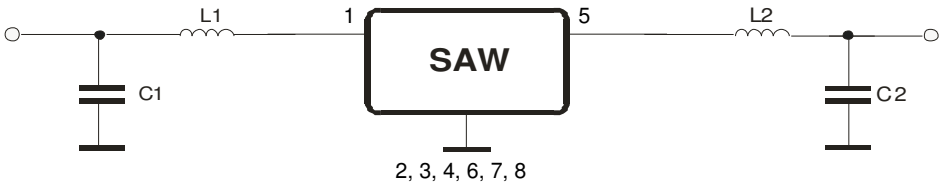
(All dimensions in mm)



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

Date code:	Year + week
J	2017
K	2018
L	2019
...	

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;

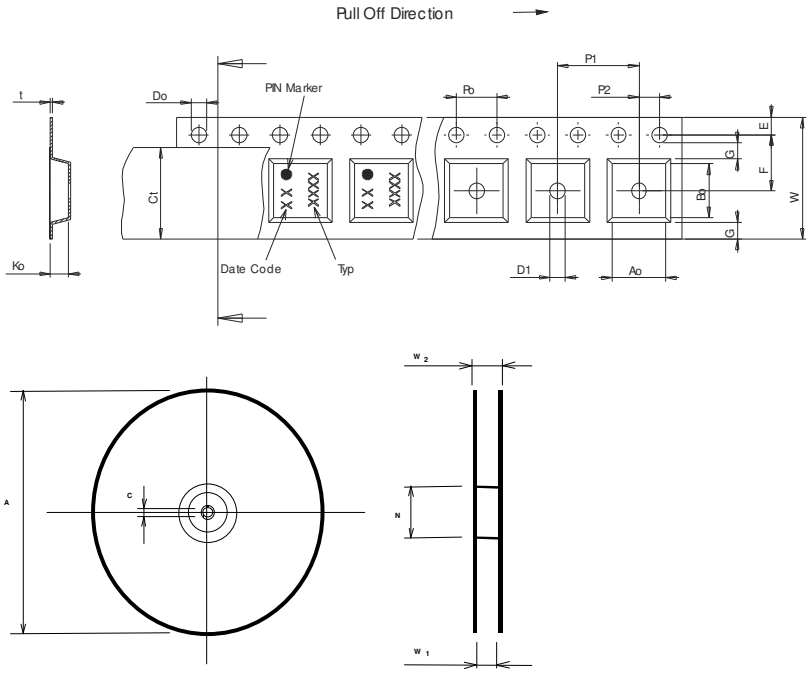
reel of empty components at start:	min. 300 mm
reel of empty components at start including leader:	min. 500 mm
trailer:	min. 300 mm

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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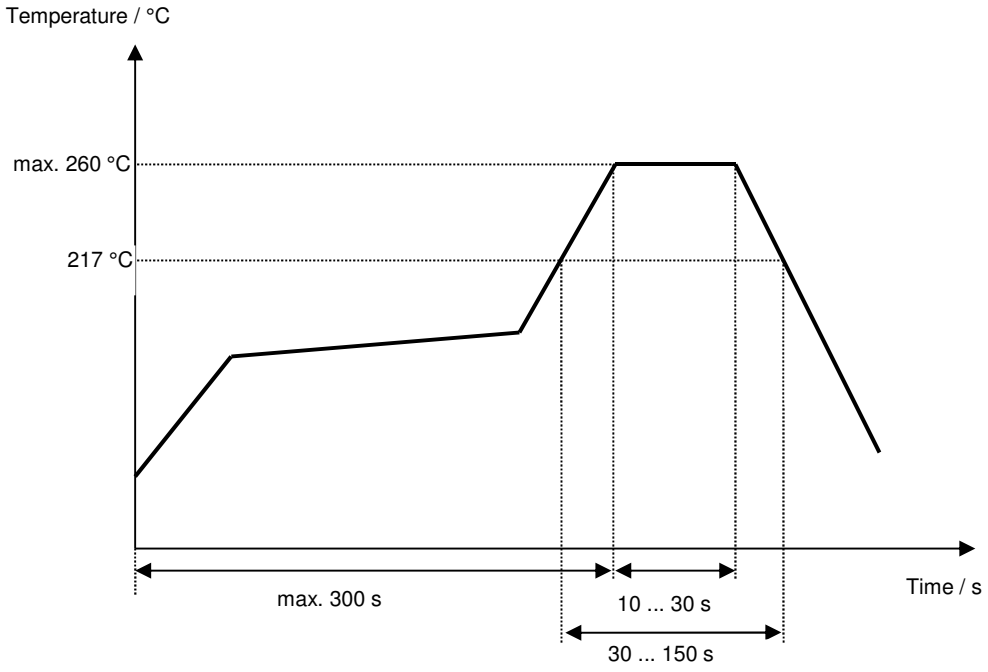
Air reflow temperature conditions

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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History

Version	Reason of Changes	Name	Date
1.0	- generation of filter specification	Abutaimah	09.03.2017
2.0	- correct passband ripple conditions - update storage temperature range - update tape & reel dimensions - update tape & reel pull off direction - correct typo in remark section	Bonnen	25.07.2017

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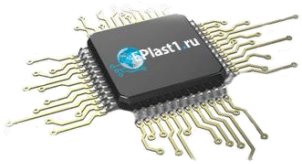
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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