

VI TELEFILTER

Development specification

TDX 1188

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Measurement condition

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance: *		
Input:	t.b.d.	
Output:	t.b.d.	

Characteristics

Remark:

The maximum attenuation in the pass bands is defined as the insertion loss a_e . The nominal frequency f_{NRX1} is fixed at 1188,8 MHz and the nominal frequency f_{NRX2} is fixed at 1575,42 MHz without any tolerance or limit. The values of absolute attenuation a_{abs} are guaranteed for the whole operating temperature range. The frequency shift of the filter in the operating temperature range is included in the production tolerance scheme.

D a t a		typ. value	tolerance / limit	
Insertion loss RX1	a_{eRX1}	-	max.	2,0 dB
Insertion loss RX2	a_{eRX2}	-	max.	2,2 dB
Nominal frequency RX1	f_{NRX1}	-		1188,8 MHz
Nominal frequency RX2	f_{NRX2}	-		1575,42 MHz
Passband RX1	PB_{RX1}	-	f_{NRX1} -	14,8 MHz
			f_{NRX1} +	17,2 MHz
Pass band variation RX1		-	max.	1,0 dB
Passband RX2	PB_{RX2}	-	f_{NRX2} ±	4,0 MHz
Pass band variation RX2		-	max.	1,0 dB
Absolute attenuation RX1	$A_{abs RX1}$			
700 MHz ...	1100 MHz	-	min.	23 dB
1100 MHz ...	1147 MHz	-	min.	15 dB
1220 MHz ...	1260 MHz	-	min.	2 dB
1260 MHz ...	1800 MHz	-	min.	23 dB
Absolute attenuation RX2	$A_{abs RX2}$			
0,3 MHz ...	1400 MHz	-	min.	29 dB
1400 MHz ...	1525 MHz	-	min.	26 dB
1610 MHz ...	1625 MHz	-	min.	20 dB
1625 MHz ...	1800 MHz	-	min.	26 dB
1800 MHz ...	2200 MHz	-	min.	29 dB
Group delay variation RX1		-	max.	40 ns
Group delay variation RX2		-	max.	15 ns
VSWR RX1 at f_{NRX1}		-	max.	2,5 : 1
VSWR RX2 at f_{NRX2}		-	max.	2,5 : 1
Input power level RX1		-	max.	10 dBm
Input power level RX2		-	max.	12 dBm
Operating temperature range	OTR	-	- 45 °C ... + 85 °C	
Storage temperature range		-	- 45 °C ... + 85 °C	
Temperature coefficient of frequency	TC_f **	t.b.d.	ppm/K	-

*) 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.

***) $\Delta f(\text{Hz}) = TC_f(\text{ppm/K}) \times (T - T_0) \times f_{T0}(\text{MHz})$

Generated:

Checked / Approved:

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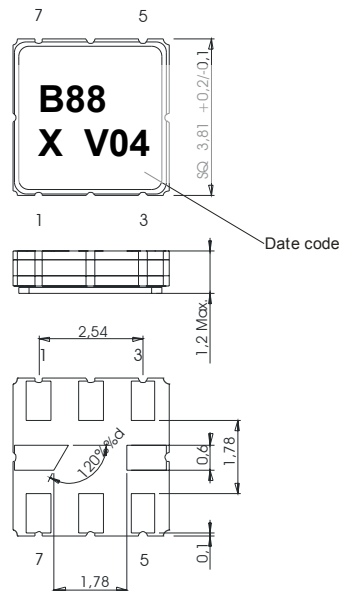
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Filter characteristic

t.b.d.

Construction and pin connection

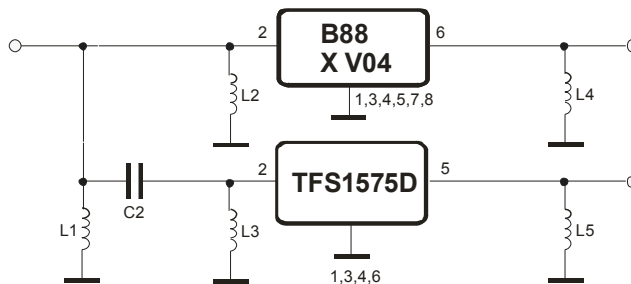
(All dimensions in mm)



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

Date code: Year + week
 V 2007
 W 2008
 X 2009
 ...

50 Ω Test circuit



The existing TFS1575D is used as RX2 filter here.

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Stability characteristics, reliability

After the following tests the filter shall meet the whole specification:

1. Shock: 500g, 1 ms, half sine wave, 3 shocks each plane;
DIN IEC 68 T2 - 27
2. Vibration: 10 Hz to 500 Hz, 0,35 mm or 5 g respectively, 1 octave per min, 10 cycles per plan, 3 plans;
DIN IEC 68 T2 - 6
3. Change of temperature: -55 °C to 125°C / 30 min. each / 10 cycles
DIN IEC 68 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;

This filter is RoHS compliant (2002/95/EG, 2005/618/EG)

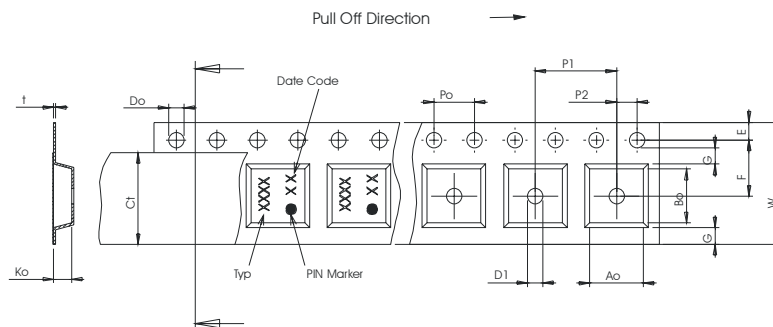
Packing

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;

max. pieces of filters per reel: 3000
 reel of empty components at start: min. 300 mm
 reel of empty components at start including leader: min. 500 mm
 trailer: min. 300 mm

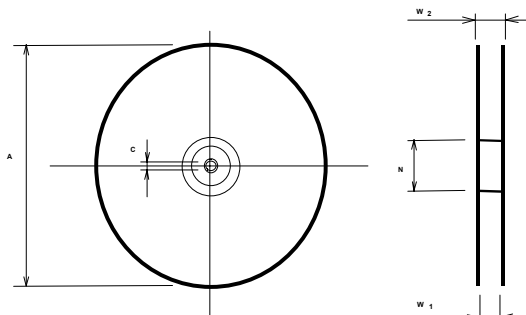
Tape (all dimensions in mm)

- 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 : 9,5 ± 0,1



Reel (all dimensions in mm)

- A : 330
- W1 : 12,4 +2/-0
- W2(max) : 18,4
- N(min) : 50
- C : 13,0 +0,5/-0,2



The minimum bending radius is 45 mm.

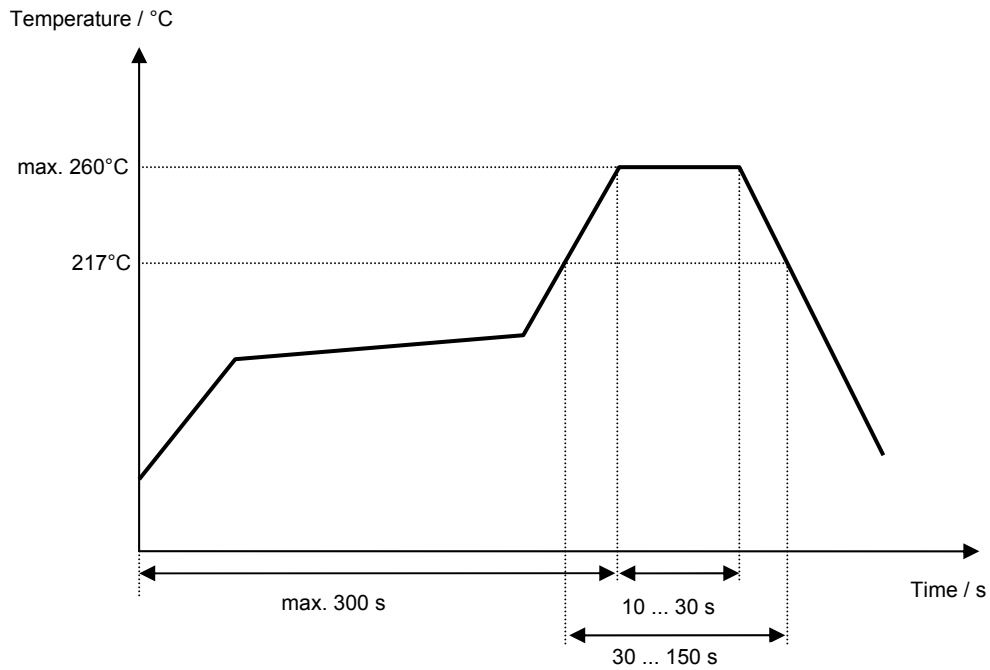
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Air reflow temperature conditions

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	Strehl	25.01.2007