



## Microwave Ceramics Filter

2-pole filter for WLAN

**Series/Type:** S2I1/3/1  
**Ordering code:** B69812N2457D201  
Date: 2009-12-11  
Version: D

## Data sheet

## Modification

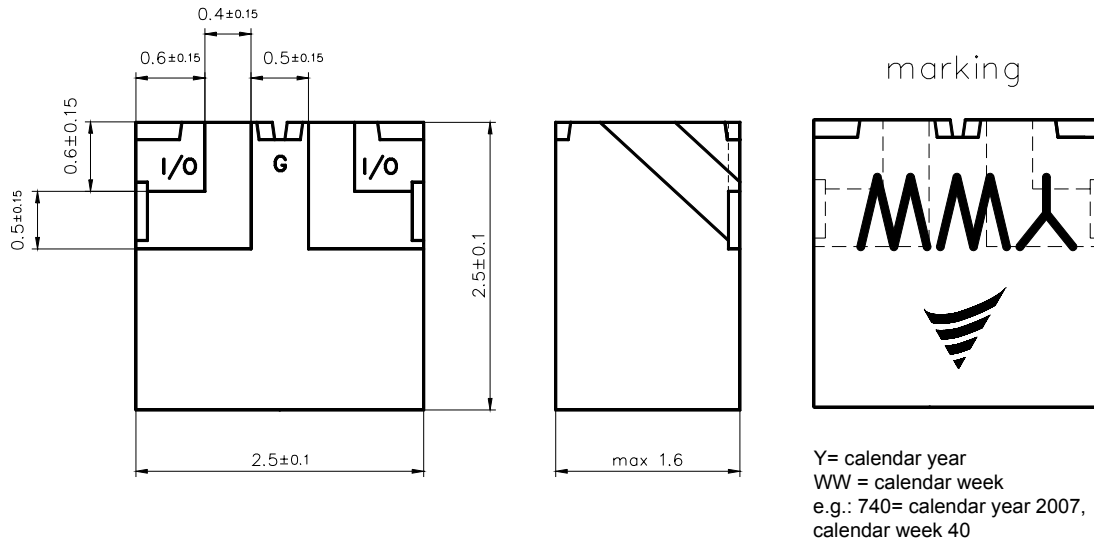
A		08.07.03	Stadler
B	Package drawing	14.03.07	Reichel
C	Component drawing, marking	08.10.07	Reichel
D	Upgraded to new form	11.12.09	Reichel

## Features

- SMD filter consisting of coupled resonators with stepped impedances
- extreme low losses
- High attenuations at GSM (900, 1800) and UMTS bands
- High attenuation at 2 times center frequency
- (NdBa)TiO<sub>3</sub> ( $\epsilon_r = 88/TC_f = 0 \pm 10$  ppm/K) with a coating of copper (10  $\mu\text{m}$ ) and tin (>5  $\mu\text{m}$ )
- Excellent reflow solderability, no migration effect due to copper/tin metallization
- ESD insensitivity and ESD protecting due to filter characteristics

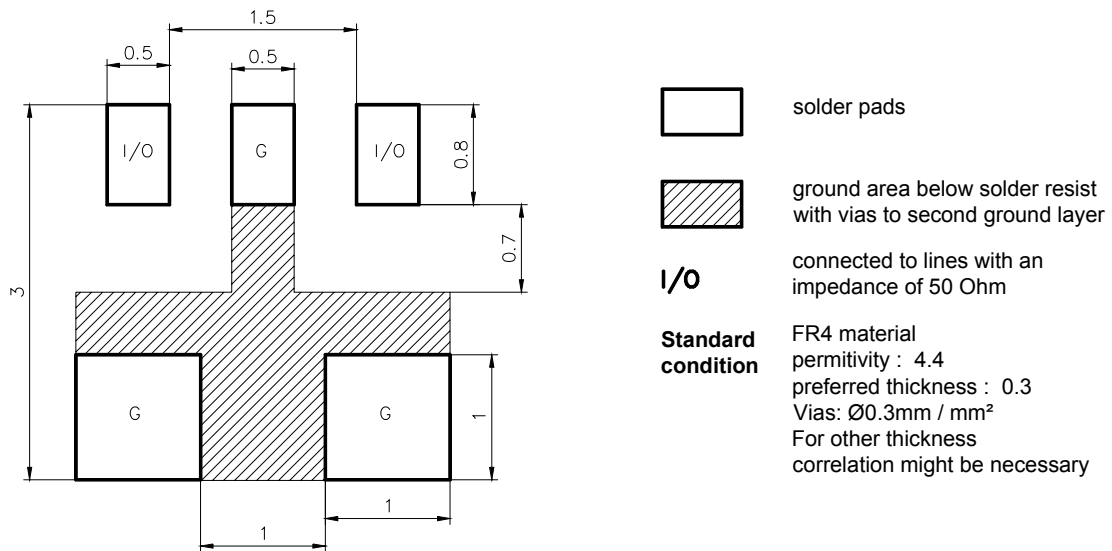
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Dimension limits, marking



View from below onto the solder terminals and view from beside

Recommended footprint



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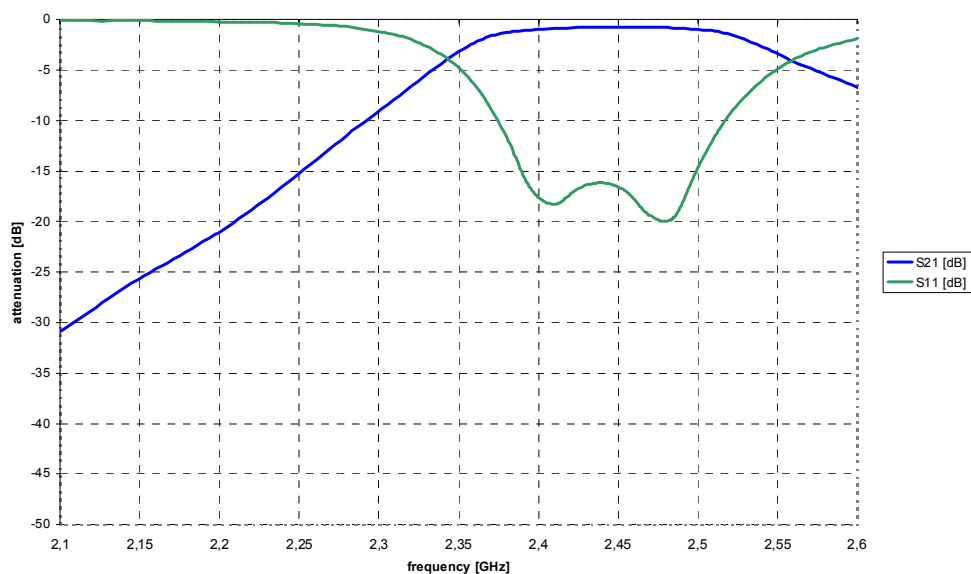
Characteristics

		min.	typ.	max.	
Center frequency	$f_c$	–	2.450	–	GHz
Insertion loss	$\alpha_{IL}$		0.8	1.0	dB
Passband (2400 ... 2500 MHz)	B	100			MHz
Amplitude ripple (peak – peak)	$\Delta\alpha$		0.4	0.8	dB
Standing wave ratio	SWR		1.5	2.0	
Impedance	Z		50		$\Omega$
Attenuation	$\alpha$				
	at DC to 880 MHz	50	55		dB
	at 880 to 960 MHz	45	50		dB
	at 960 to 1990 MHz	40	45		dB
	at 1990 to 2100 MHz	25	30		dB
	at 2100 to 2170 MHz	20	25		dB
	at 3000 to 3200 MHz	15	20		dB
	at 3200 to 3500 MHz	20	25		dB
	at 3500 to 4800 MHz	25	30		dB
	at 4800 to 5000 MHz	23	27		dB

Maximum ratings

IEC climatic category (IEC 68-1)		–40 °C/+90 °C/56	
Operating temperature	$T_{op}$	–40/+85	°C

Typical passband characteristic

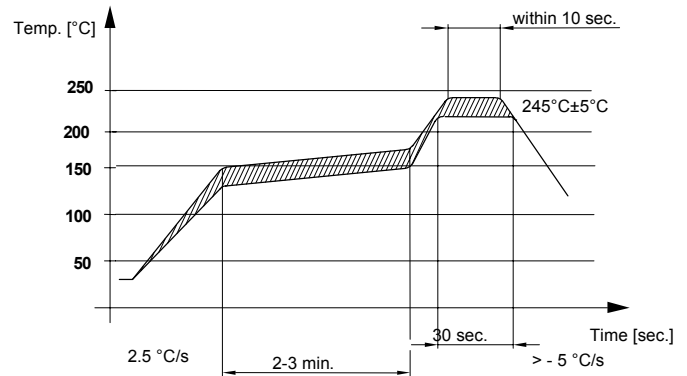
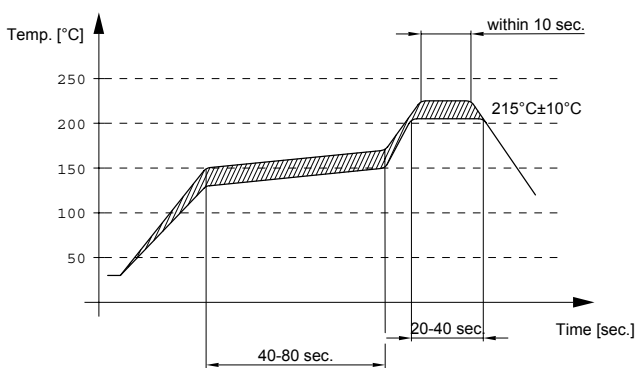


**Data sheet**
**Processing information**

- Wettability acc. to IEC 68-2-58:  $\geq 75\%$  (after aging)

**Soldering requirements**

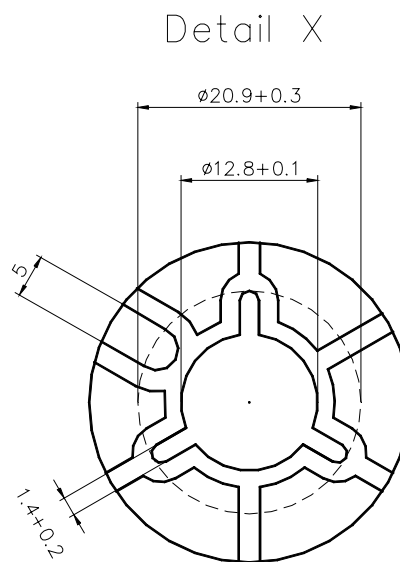
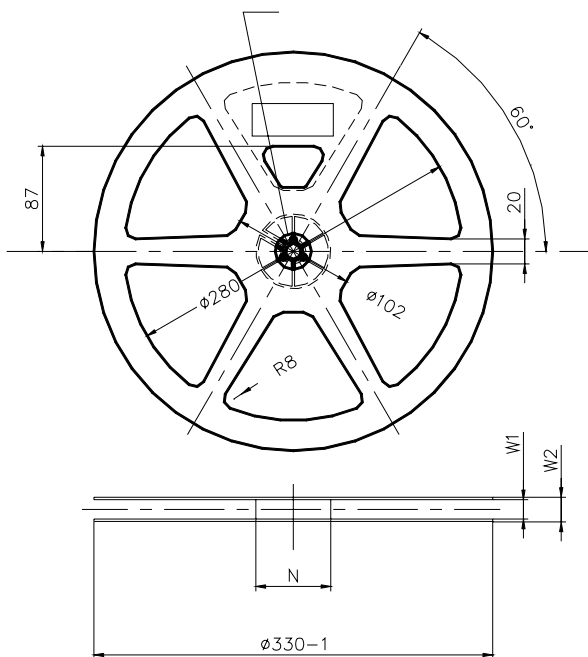
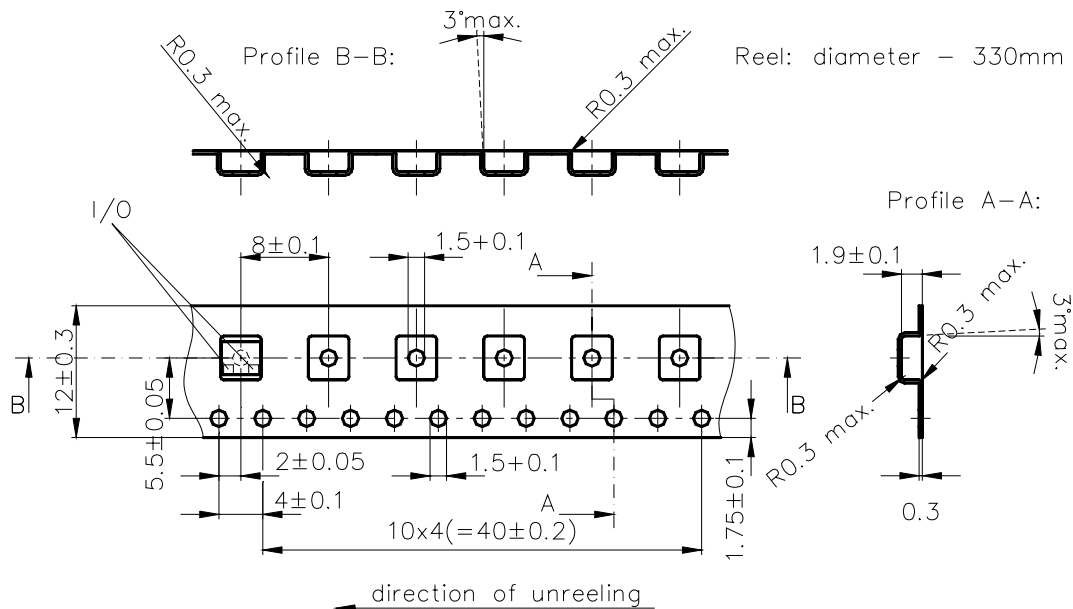
	Profile for eutectic SnPb solder paste	Profile for leadfree solder paste	
Soldering type	reflow	reflow	
Maximum soldering temperature (measuring point on top surface of the component)	235 (max. 2 sec.)	260 (max. 2 sec.)	°C
	225 (max. 10 sec.)	250 (max. 10 sec.)	°C

**Recommended soldering conditions (infrared):**


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Delivery mode

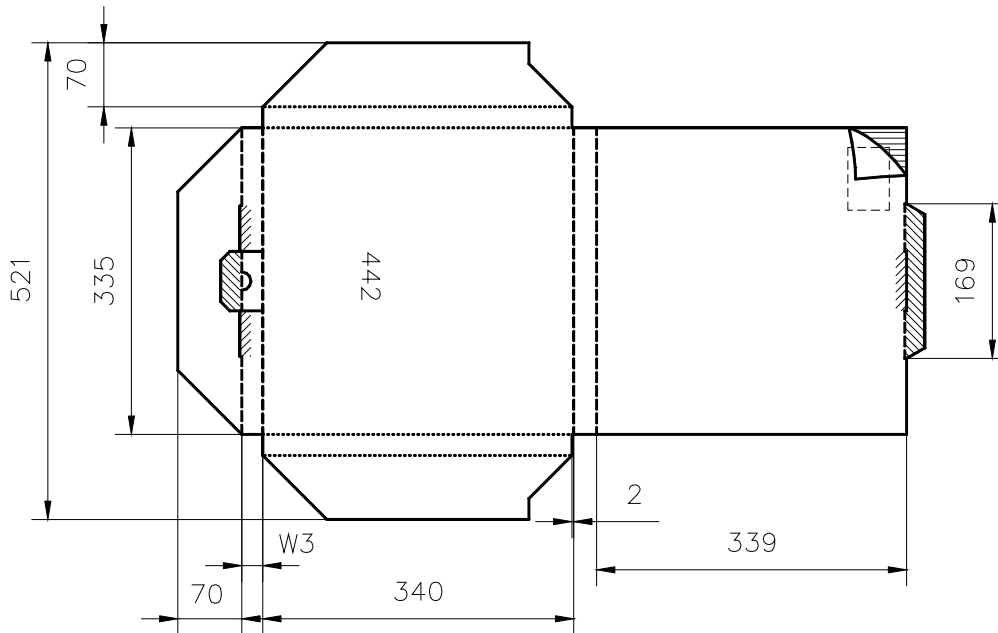
- Blister tape acc. to IEC 286-3, grey
- Pieces/tape: 4000



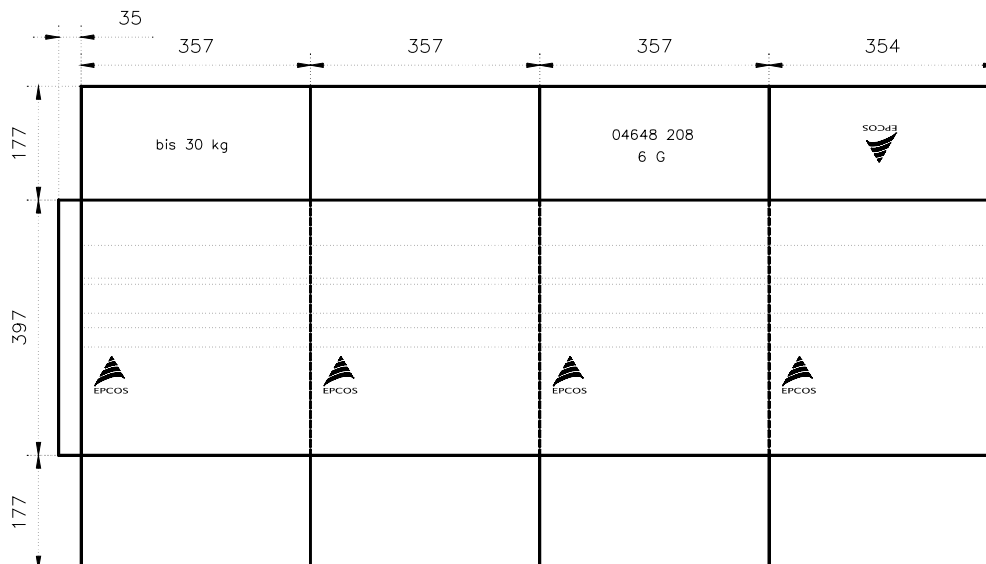
$w1 = 12,4 + 2 \text{ mm}$   
 $w2 = 18,4 \text{ mm max}$   
 $N = 62 \pm 1,5 \text{ mm}$

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Individual reel packaging information



Box packaging information



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