

**Microchip**

**Filter specification**

**TFS 940B**

**1/5**

**Measurement condition**

Ambient temperature:	23	°C
Input power level:	0	dBm
Terminating impedance:		
Input:	50	Ω
Output:	50	Ω

**Characteristics**

Remark:

The maximum attenuation in the pass band is defined as the insertion loss  $a_e$ . The nominal frequency  $f_N$  is fixed at 940,5 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	
<b>Insertion loss</b>		$a_e$	3,0 dB	max.	4,0 dB
<b>Insertion loss at ambient temperature</b>			2,1 dB	max.	2,8 dB
<b>Nominal frequency</b>		$f_N$	-		940,5 MHz
<b>Passband</b>		PB	-	$f_N \pm$	19,5 MHz
<b>Pass band variation</b>			2,5 dB	max.	3,0 dB
<b>Pass band variation at ambient temperature</b>			1,4 dB	max.	1,8 dB
<b>Absolute attenuation</b>		$a_{abs}$			
0,3 MHz ... 800 MHz			26,5 dB	min.	25 dB
800 MHz ... 880 MHz			27,5 dB	min.	26 dB
880 MHz ... 905 MHz			35 dB	min.	20 dB
880 MHz ... 905 MHz	at ambient temperature		36 dB	min.	28 dB
905 MHz ... 915 MHz			4,5 dB	min.	2 dB
905 MHz ... 915 MHz	at ambient temperature		11 dB	min.	3 dB
980 MHz ... 1005 MHz			35 dB	min.	30 dB
1005 MHz ... 1025 MHz			31 dB	min.	30 dB
1025 MHz ... 1760 MHz			30 dB	min.	27 dB
1760 MHz ... 2000 MHz			43 dB	min.	30 dB
2000 MHz ... 3500 MHz			7 dB	min.	5 dB
3500 MHz ... 4000 MHz			4,5 dB	min.	2 dB
<b>VSWR within PB</b>			2,0 : 1	max.	3,0 : 1
<b>VSWR within PB at ambient temperature</b>			2,0 : 1	max.	2,8 : 1
<b>Input power level</b>			-	max.	10 dBm
<b>Operating temperature range</b>		OTR	-		- 30 °C ... + 80 °C
<b>Storage temperature range</b>			-		- 40 °C ... + 85 °C
<b>Temperature coefficient of frequency</b>		$TC_f$ *	-43 ppm/K		-

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

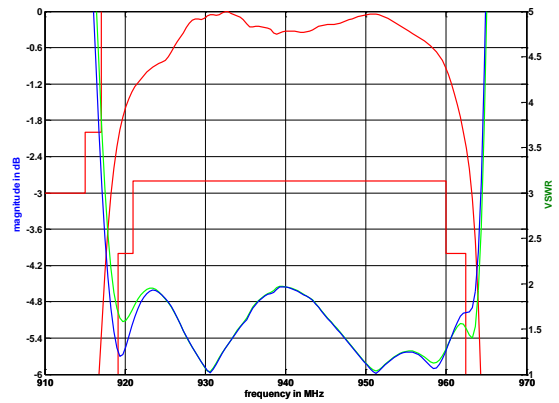
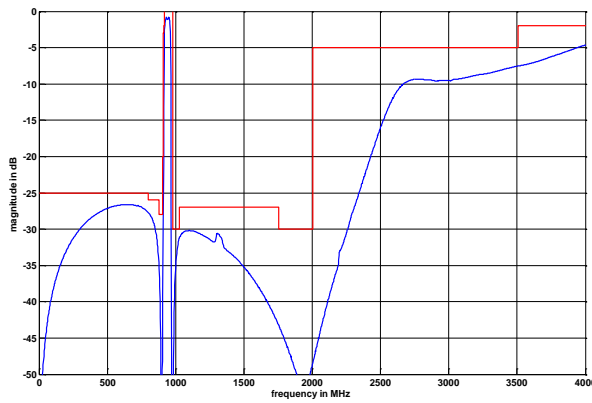
**Generated:**

**Checked / Approved:**

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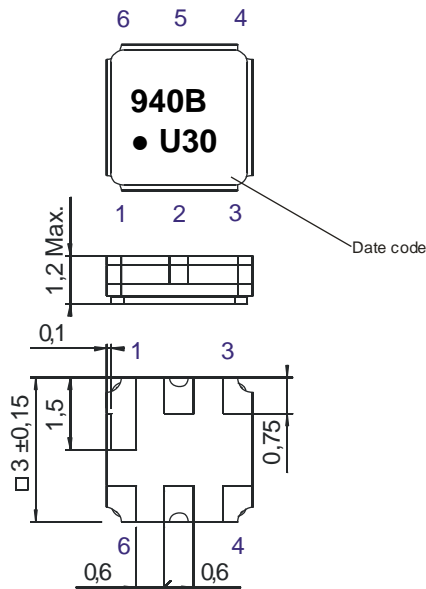
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**Filter characteristic**



**Construction and pin connection**

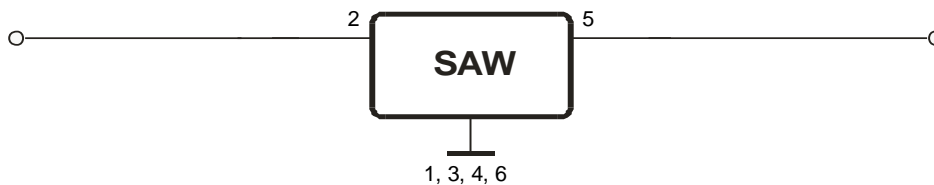
(All dimensions in mm)



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

Date code: Year + week  
 U 2006  
 V 2007  
 W 2008  
 ...

**50 Ohm Test circuit**



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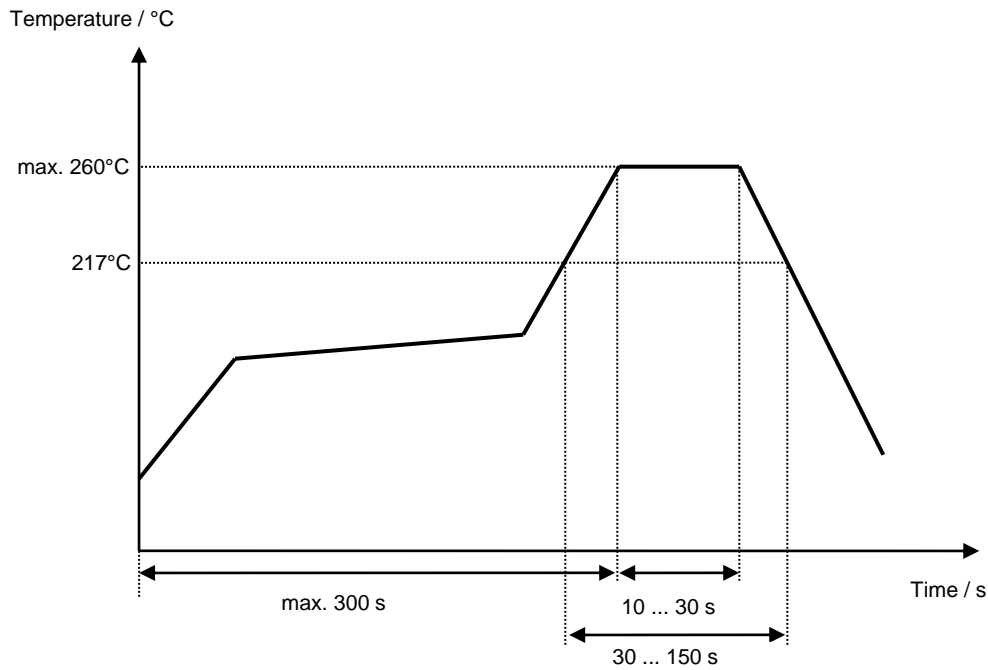
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**Air reflow temperature conditions**

<b>Conditions</b>	<b>Exposure</b>
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**

<b>Version</b>	<b>Reason of Changes</b>	<b>Name</b>	<b>Date</b>
1.0	Generation of development specification	Strehl	28.07.2006

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