



SAW Components

Data Sheet B4215

Data Sheet

An abstract, grayscale graphic featuring a globe with a grid of latitude and longitude lines. Overlaid on the globe is a large, stylized, 3D-effect word "EPCOS" in a light gray color. The word is tilted and appears to be floating or emerging from the globe. The background is dark and textured with some light streaks.



SAW Components

B4215

Low-Loss Dual Band Filter for Mobile Communication

942,5 / 1842,5 MHz

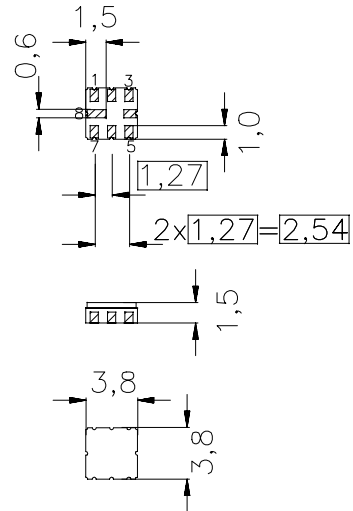
Data Sheet



Ceramic package QCC8B

Features

- Low-loss RF filter for mobile telephone EGSM and PCN system , receive path
- Usable passband:
Filter 1 (EGSM): 35 MHz
Filter 2 (PCN): 75 MHz
- No matching network required for operation at 50 Ω
- Ceramic package for Surface Mounted Technology (SMT)



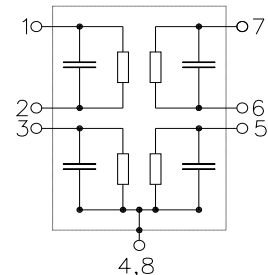
Dimensions in mm, approx. weight 0,07 g

Terminals

- Ni, gold-plated

Pin configuration

1	Input [Filter 1]
2	Input - ground [Filter 1]
3	Input [Filter 2]
4	Input - ground [Filter 2]
5	Output [Filter 2]
6	Output - ground [Filter 1]
7	Output [Filter 1]
8	Output - ground [Filter 2]
4, 8	Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B4215	B39182-B4215-Z810	C61157-A7-A46	F61074-V8037-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 25 / + 85	$^{\circ}\text{C}$	source and load impedance of both filters 50 Ω peak power of GSM signal , duty cycle 1 : 8
Storage temperature range	T_{stg}	- 40 / + 85	$^{\circ}\text{C}$	
DC voltage	V_{DC}	0	V	
Input power max.				
Filter 1 (EGSM-Rx)	P_{IN}			
880 ... 915 MHz		13	dBm	
1710 ... 1785 MHz		10	dBm	
Filter 2 (PCN-Rx)	P_{IN}			
880 ... 915 MHz		15	dBm	
1710 ... 1785 MHz		10	dBm	



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Characteristics Filter 1 (EGSM)

Operating temperature range: $T = 25 \pm 2^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 50 \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	942,50	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	925,0 ... 960,0 MHz		—	2,2	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	925,0 ... 960,0 MHz		—	1,1	2,2	dB
Input VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,3	
Output VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,3	
Attenuation	$\alpha_{\min}$					
	0,0 ... 880,0 MHz		20,0	21,5	—	dB
	880,0 ... 905,0 MHz		23,0	36,0	—	dB
	905,0 ... 915,0 MHz		11,0	19,0	—	dB
	980,0 ... 1850,0 MHz		20,0	26,0	—	dB
	1850,0 ... 1920,0 MHz		22,0	25,0	—	dB
	1920,0 ... 2100,0 MHz		15,0	19,0	—	dB
	2100,0 ... 2880,0 MHz		3,0	4,0	—	dB



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Characteristics Filter 1 (EGSM)

Operating temperature range: $T = +10$ to $+60^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	942,50	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	925,0 ... 960,0 MHz		—	2,5	3,4	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	925,0 ... 960,0 MHz		—	1,4	2,4	dB
Input VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,3	
Output VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,3	
Attenuation	$\alpha_{\min}$					
	0,0 ... 880,0 MHz		20,0	21,5	—	dB
	880,0 ... 905,0 MHz		23,0	36,0	—	dB
	905,0 ... 915,0 MHz		10,0	15,0	—	dB
	980,0 ... 1850,0 MHz		20,0	26,0	—	dB
	1850,0 ... 1920,0 MHz		22,0	25,0	—	dB
	1920,0 ... 2100,0 MHz		15,0	19,0	—	dB
	2100,0 ... 2880,0 MHz		3,0	4,0	—	dB



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Characteristics Filter 1 (EGSM)

Operating temperature range: $T = -10$ to $+80^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	942,50	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	925,0 ... 960,0 MHz		—	2,8	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	925,0 ... 960,0 MHz		—	1,7	2,5	dB
Input VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,3	
Output VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,3	
Attenuation	$\alpha_{\min}$					
	0,0 ... 880,0 MHz		20,0	21,5	—	dB
	880,0 ... 905,0 MHz		23,0	36,0	—	dB
	905,0 ... 915,0 MHz		7,0	13,0	—	dB
	980,0 ... 1850,0 MHz		20,0	26,0	—	dB
	1850,0 ... 1920,0 MHz		22,0	25,0	—	dB
	1920,0 ... 2100,0 MHz		15,0	19,0	—	dB
	2100,0 ... 2880,0 MHz		3,0	4,0	—	dB



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Characteristics Filter 1 (EGSM)

Operating temperature range: $T = -25$ to $+85^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\ \Omega$
Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	942,50	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	925,0 ... 960,0 MHz		—	2,8	4,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	925,0 ... 960,0 MHz		—	1,7	3,2	dB
Input VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,4	
Output VSWR						
	925,0 ... 960,0 MHz		—	2,0	2,4	
Attenuation	$\alpha_{\min}$					
	0,0 ... 880,0 MHz		19,0	21,5	—	dB
	880,0 ... 905,0 MHz		23,0	35,0	—	dB
	905,0 ... 915,0 MHz		6,5	12,0	—	dB
	980,0 ... 1850,0 MHz		20,0	26,0	—	dB
	1850,0 ... 1920,0 MHz		22,0	25,0	—	dB
	1920,0 ... 2100,0 MHz		15,0	19,0	—	dB
	2100,0 ... 2880,0 MHz		3,0	4,0	—	dB



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Characteristics Filter 2 (PCN)

Operating temperature range: $T = 25 \pm 2^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 50 \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	1805,0 ...1880,0 MHz		—	2,5	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	1805,0 ...1880,0 MHz		—	1,4	2,1	dB
Input VSWR						
	1805,0 ...1880,0 MHz		—	2,0	2,3	
Output VSWR						
	1805,0 ...1880,0 MHz		—	2,0	2,3	
Attenuation	$\alpha_{\min}$					
	10,0 ...1705,0 MHz		17,0	21,0	—	dB
	1705,0 ...1760,0 MHz		17,0	23,0	—	dB
	1760,0 ...1785,0 MHz		10,0	17,0	—	dB
	1920,0 ...1980,0 MHz		10,0	32,0	—	dB
	1980,0 ...2500,0 MHz		20,0	26,0	—	dB
	2500,0 ...3000,0 MHz		15,0	18,0	—	dB
	3000,0 ...3600,0 MHz		13,0	15,0	—	dB
	3600,0 ...3840,0 MHz		10,0	13,0	—	dB
	3840,0 ...6000,0 MHz		5,0	7,0	—	dB



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Low-Loss Dual Band Filter for Mobile Communication

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Characteristics Filter 2 (PCN)

Operating temperature range: $T = +10$ to $+60^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	1805,0 ...1880,0 MHz		—	2,8	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	1805,0 ...1880,0 MHz		—	1,7	2,4	dB
Input VSWR						
	1805,0 ...1880,0 MHz		—	2,0	2,3	
Output VSWR						
	1805,0 ...1880,0 MHz		—	2,0	2,3	
Attenuation	$\alpha_{\min}$					
	10,0 ...1705,0 MHz		17,0	21,0	—	dB
	1705,0 ...1760,0 MHz		17,0	23,0	—	dB
	1760,0 ...1785,0 MHz		10,0	17,0	—	dB
	1920,0 ...1980,0 MHz		10,0	32,0	—	dB
	1980,0 ...2500,0 MHz		20,0	26,0	—	dB
	2500,0 ...3000,0 MHz		15,0	18,0	—	dB
	3000,0 ...3600,0 MHz		13,0	15,0	—	dB
	3600,0 ...3840,0 MHz		10,0	13,0	—	dB
	3840,0 ...6000,0 MHz		5,0	7,0	—	dB



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Characteristics Filter 2 (PCN)

Operating temperature range: $T = -10$ to $+80^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	1805,0 ...1880,0	MHz	—	2,9	3,9	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	1805,0 ...1880,0	MHz	—	1,8	2,8	dB
Input VSWR						
	1805,0 ...1880,0	MHz	—	2,0	2,3	
Output VSWR						
	1805,0 ...1880,0	MHz	—	2,0	2,3	
Attenuation	$\alpha_{\min}$					
	10,0 ...1705,0	MHz	17,0	21,0	—	dB
	1705,0 ...1760,0	MHz	17,0	23,0	—	dB
	1760,0 ...1785,0	MHz	8,0	17,0	—	dB
	1920,0 ...1980,0	MHz	10,0	32,0	—	dB
	1980,0 ...2500,0	MHz	20,0	26,0	—	dB
	2500,0 ...3000,0	MHz	15,0	18,0	—	dB
	3000,0 ...3600,0	MHz	13,0	15,0	—	dB
	3600,0 ...3840,0	MHz	10,0	13,0	—	dB
	3840,0 ...6000,0	MHz	5,0	7,0	—	dB



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Characteristics Filter 2 (PCN)

Operating temperature range: $T = -25$ to $+85^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	1805,0 ...1880,0	MHz	—	3,1	4,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	1805,0 ...1880,0	MHz	—	2,0	3,1	dB
Input VSWR						
	1805,0 ...1880,0	MHz	—	2,1	2,4	
Output VSWR						
	1805,0 ...1880,0	MHz	—	2,1	2,4	
Attenuation	$\alpha_{\min}$					
	10,0 ...1705,0	MHz	17,0	21,0	—	dB
	1705,0 ...1760,0	MHz	17,0	23,0	—	dB
	1760,0 ...1785,0	MHz	8,0	17,0	—	dB
	1920,0 ...1980,0	MHz	10,0	32,0	—	dB
	1980,0 ...2500,0	MHz	20,0	26,0	—	dB
	2500,0 ...3000,0	MHz	15,0	18,0	—	dB
	3000,0 ...3600,0	MHz	13,0	15,0	—	dB
	3600,0 ...3840,0	MHz	10,0	13,0	—	dB
	3840,0 ...6000,0	MHz	5,0	7,0	—	dB



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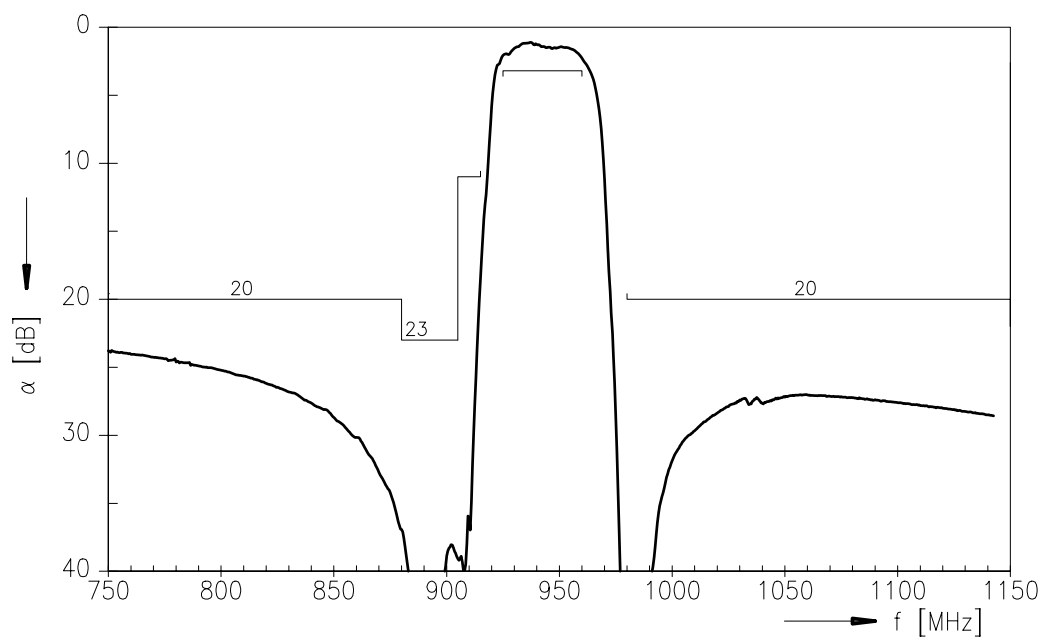
Low-Loss Dual Band Filter for Mobile Communication

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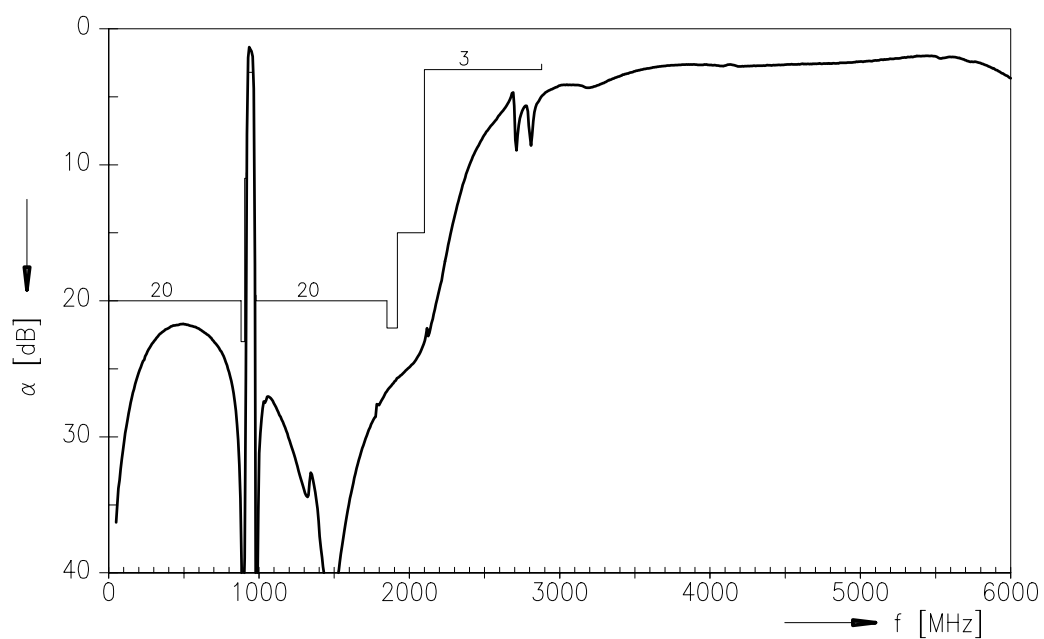
Data Sheet



Transfer function Filter 1 (EGSM) - spec at 25 °C



Transfer function Filter 1 (EGSM) - wideband





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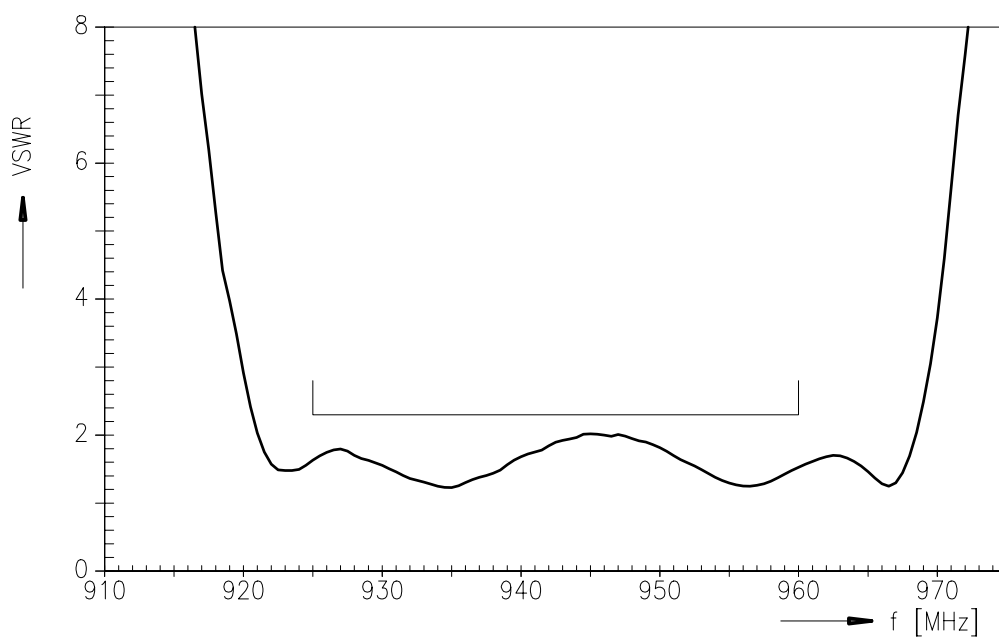
Low-Loss Dual Band Filter for Mobile Communication

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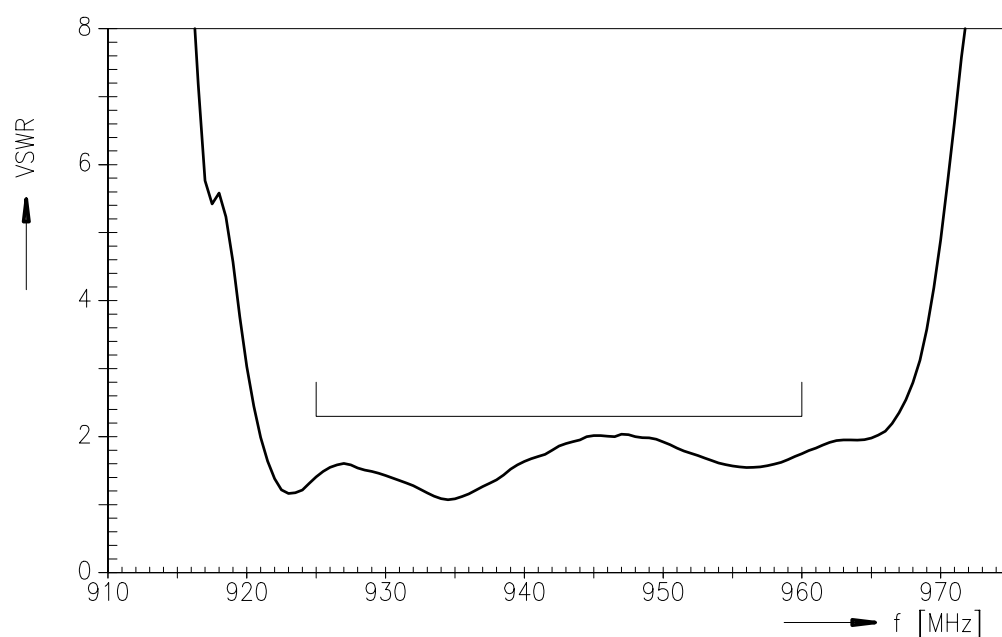
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Input VSWR Filter 1 (EGSM)



Output VSWR Filter 1 (EGSM)





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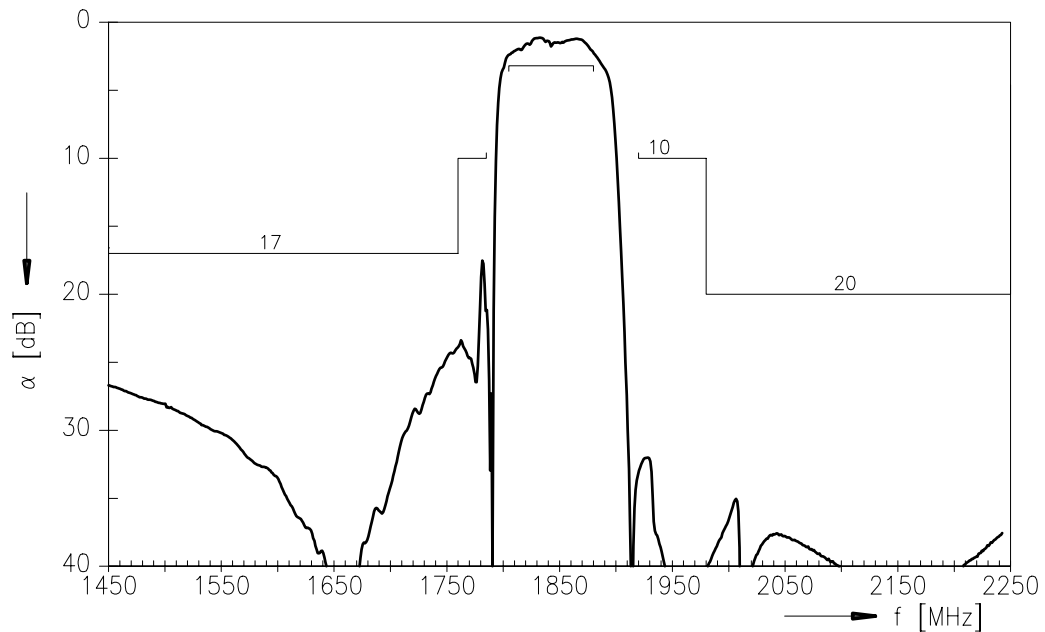
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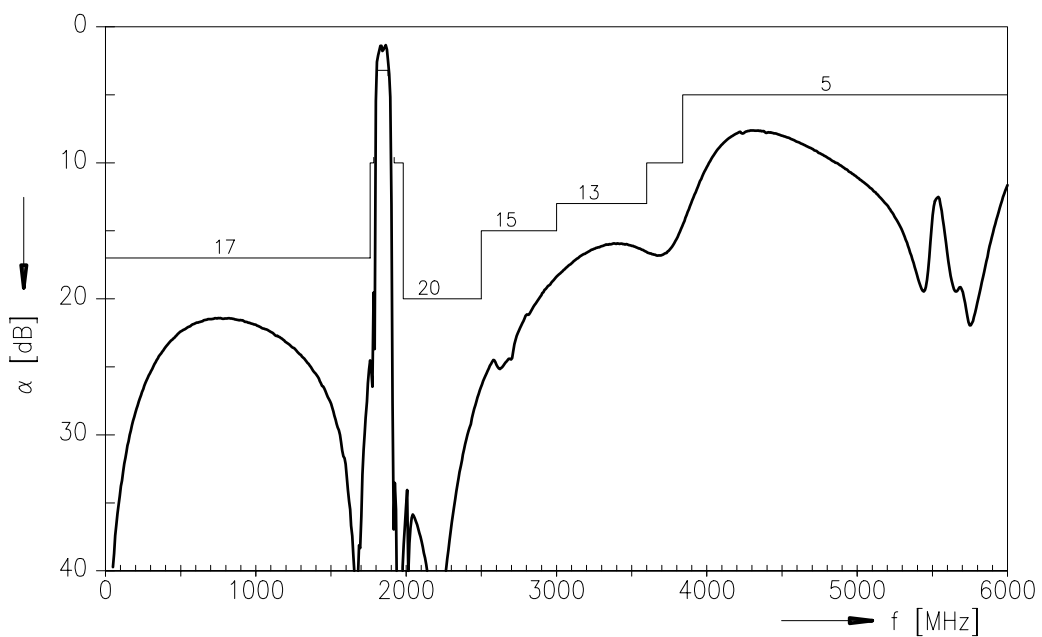
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Transfer function Filter 2 (PCN) - spec at 25 °C

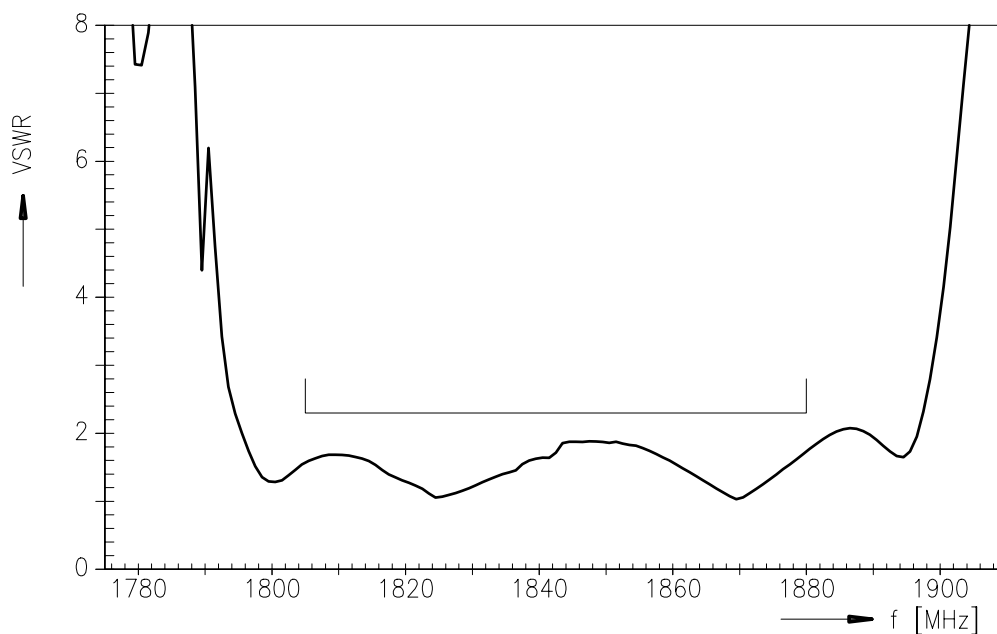


Transfer function Filter 2 (PCN) - wideband

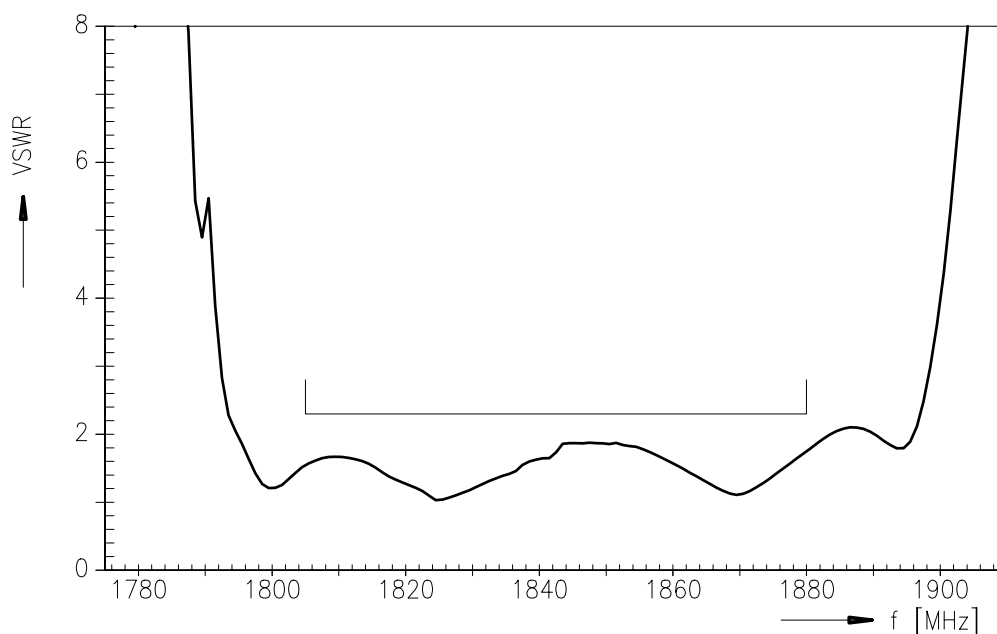




Input VSWR Filter 2 (PCN)



Output VSWR Filter 2 (PCN)





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