



SAW Components

Data Sheet B9202

Data Sheet

EPCOS



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B9202

Low-Loss Dual Band Filter for Mobile Communication

942,5 / 1842,5 MHz

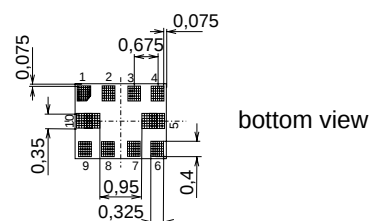
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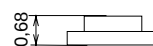
Chip sized SAW package **QCS10F**

Features

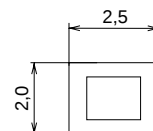
- Low-loss RF filter for mobile telephone EGSM and PCN system , receive path
- Usable passband:
Filter 1 (EGSM): 35 MHz
Filter 2 (PCN): 75 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS Class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**



bottom view



side view



top view

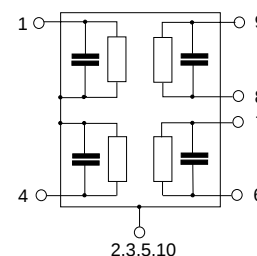
Terminals

- Ni, gold-plated

Pin configuration

1	Input [Filter 1]
4	Input [Filter 2]
6, 7	Output, balanced [Filter 2]
8, 9	Output, balanced [Filter 1]
2, 3, 5,10	Case ground

Dimensions in mm, approx. weight 12mg



Type	Ordering code	Marking and Package according to	Packing according to
B9202	B39182-B9202-G810	C61157-A7-A133	F61074-V8153-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	− 40 / + 85	°C	Machine Model, 10 pulses
Storage temperature range	T_{stg}	− 40 / + 85	°C	
DC voltage	V_{DC}	3	V	
ESD voltage	V_{ESD}^*	50*	V	
Input power at GSM850, GSM900, GSM1800, GSM1900 Tx bands:				
Filter 1 (EGSM-Rx)	P_{IN}	15	dBm	peak power of GSM signal, duty cycle 4:8
Filter 2 (PCN-Rx)	P_{IN}	12	dBm	

* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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Characteristics Filter 1 (EGSM)

Operating temperature range:

$T = -20$ to $+75^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50\ \Omega$ (unbalanced)

Terminating load impedance:

$Z_L = 150\ \Omega$ (balanced) || 56nH

			min.	typ.	max.	
Center frequency	f_c		—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	925,0 ... 960,0 MHz		—	1,5	2,1	dB
	925,0 ... 960,0 MHz 1)		—	1,4	1,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	925,0 ... 960,0 MHz		—	0,7	1,4	dB
	925,0 ... 960,0 MHz 1)		—	0,6	1,0	dB
Input VSWR						
	925,0 ... 960,0 MHz		—	1,8	2,0	
Output VSWR						
	925,0 ... 960,0 MHz		—	1,7	2,0	
Output amplitude balance (S_{31} / S_{21})						
	925,0 ... 960,0 MHz		-1,0	-0,6/+0,5	1,0	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)						
	925,0 ... 960,0 MHz		-10	-2/+3	10	degree
Attenuation	$\alpha_{\min}$					
	10,0 ... 480,0 MHz		45	54	—	dB
	480,0 ... 880,0 MHz		30	34	—	dB
	880,0 ... 905,0 MHz		24	30	—	dB
	905,0 ... 915,0 MHz		20	23	—	dB
	980,0 ... 1500,0 MHz		24	29	—	dB
	1500,0 ... 6000,0 MHz		30	44	—	dB

1) $T = +25 \pm 2^{\circ}\text{C}$



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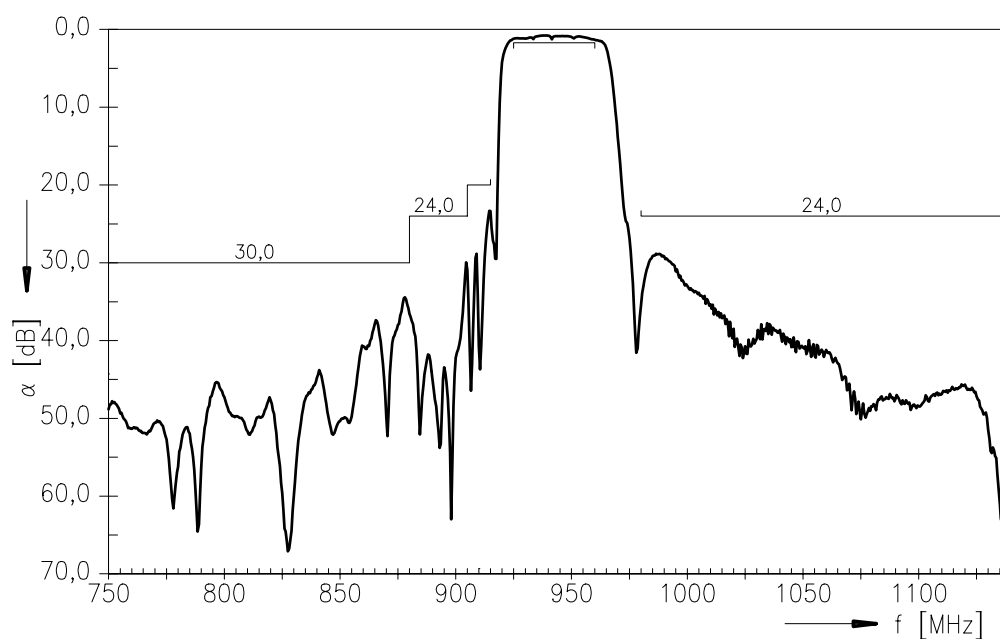
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942,5 / 1842,5 MHz

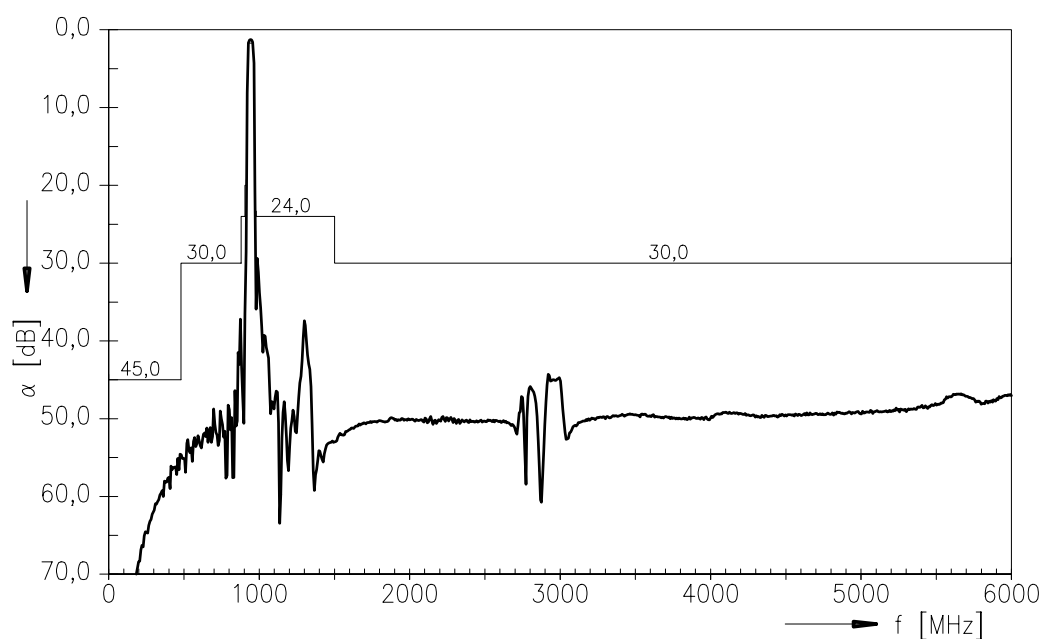
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Transfer function Filter 1 (EGSM)



Transfer function Filter 1 (EGSM) - wideband





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942,5 / 1842,5 MHz

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Characteristics Filter 2 (PCN)

Operating temperature range:

$T = -20$ to $+75^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50\ \Omega$ (unbalanced)

Terminating load impedance:

$Z_L = 150\ \Omega$ (balanced) || 12nH

			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$					
	1805,0 ...1880,0 MHz		—	1,5	2,2	dB
	1805,0 ...1880,0 MHz 1)		—	1,4	1,9	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	1805,0 ...1880,0 MHz		—	0,7	1,4	dB
	1805,0 ...1880,0 MHz 1)		—	0,6	1,1	dB
Input VSWR						
	1805,0 ...1880,0 MHz		—	2,0	2,3	
Output VSWR						
	1805,0 ...1880,0 MHz		—	1,9	2,2	
Output amplitude balance (S_{31} / S_{21})						
	1805,0 ...1880,0 MHz		-1,0	-0,6/+0,6	1,0	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)						
	1805,0 ...1880,0 MHz		-10	-4/+4	10	degree
Attenuation	$\alpha_{\min}$					
	10,0 ...1000,0 MHz		40	54	—	dB
	1000,0 ...1705,0 MHz		28	38	—	dB
	1705,0 ...1785,0 MHz		13	18	—	dB
	1920,0 ...1980,0 MHz		15	23	—	dB
	1980,0 ...2030,0 MHz		24	30	—	dB
	2030,0 ...2775,0 MHz		28	36	—	dB
	2775,0 ...5640,0 MHz		35	49	—	dB
	5640,0 ...6000,0 MHz		28	49	—	dB

1) $T = +25 \pm 2^{\circ}\text{C}$



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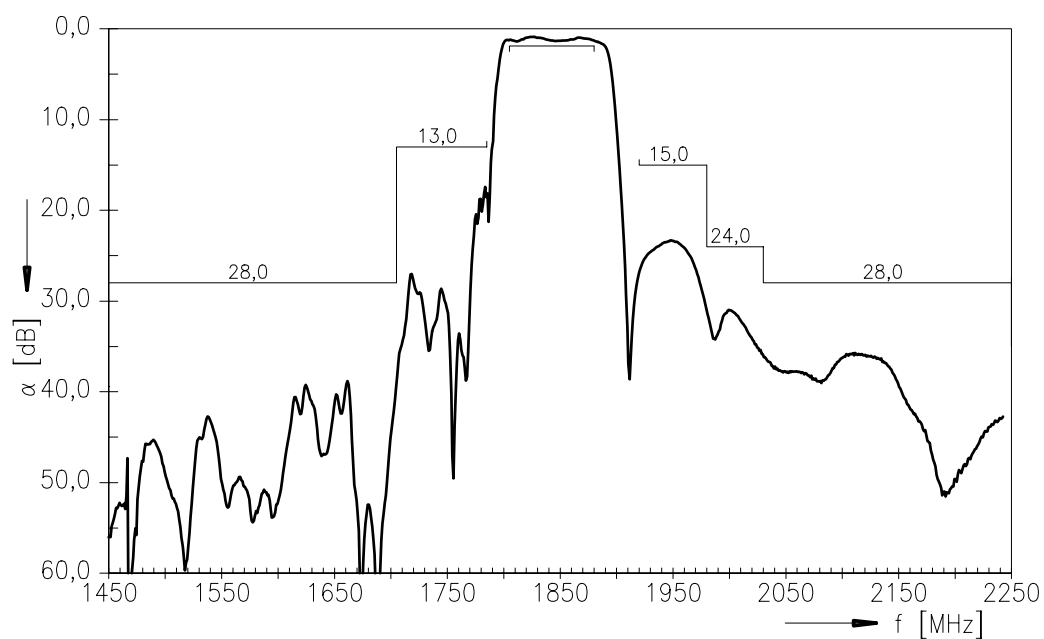
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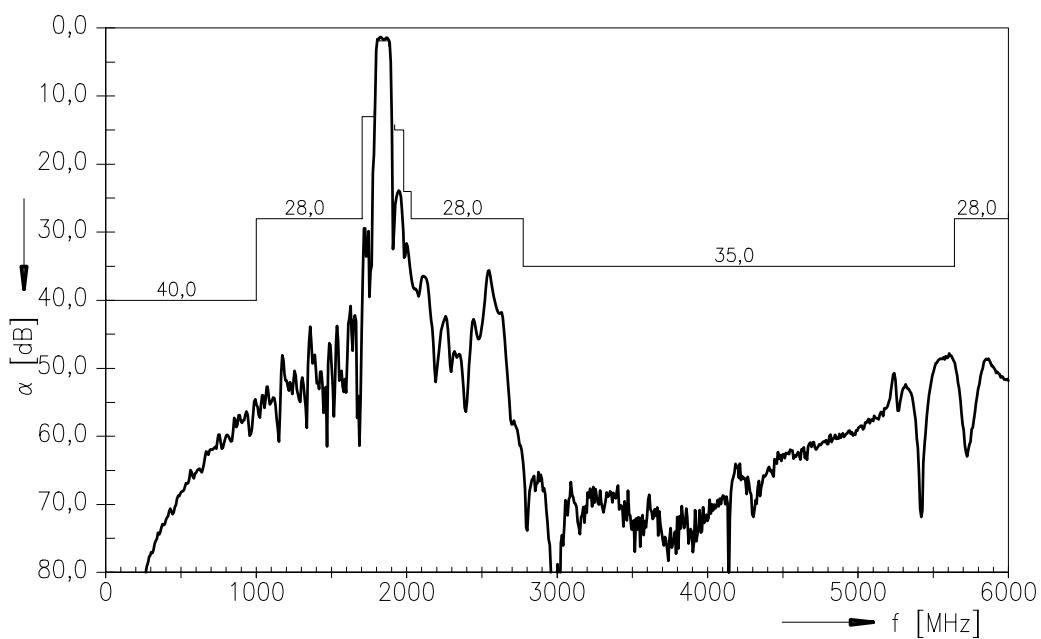
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Transfer function Filter 2 (PCN)



Transfer function Filter 2 (PCN) - wideband





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Low-Loss Dual Band Filter for Mobile Communication		942,5 / 1842,5 MHz
Data Sheet		The SMD logo is a stylized, bold, sans-serif font with a horizontal line through the middle of the letters.

Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, 81617 Munich, GERMANY

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