



SAW Components

Data Sheet B9200





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B9200

Low-Loss Dual Band Filter for Mobile Communication

881,5 / 1960,0 MHz

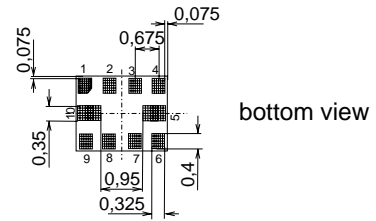
Data Sheet



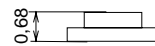
Chip sized saw package **QCS10D**

Features

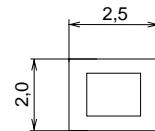
- Low-loss RF filter for mobile telephone CDMA 800/1900 system , receive path
- Usable passband:
Filter 1 (CDMA800): 25 MHz
Filter 2 (CDMA1900): 60 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 100 Ω for both filters
- Ceramic package for **Surface Mounted Technology (SMT)**



bottom view



side view



top view

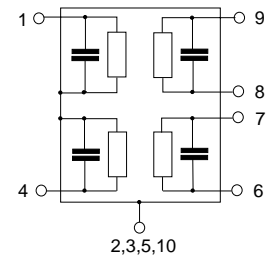
Dimensions in mm, approx. weight 12mg

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



Type	Ordering code	Marking and Package according to	Packing according to
B9200	B39202-B9200-G610	C61157-A7-A112	F61074-V8153-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / + 85	°C	Machine Model, 10 pulses
Storage temperature range	T_{stg}	- 40 / + 85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}^*	50	V	
Input power at CDMA800/1900 Tx bands:				
Filter 1 (CDMA800-Rx)	P_{IN}	15	dBm	continuous wave
Filter 2 (CDMA1900-Rx)	P_{IN}	12	dBm	@ +55 °C ambient

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



Characteristics Filter 1 (CDMA800)

Operating temperature range: $T = +25 \pm 2 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 100 \text{ } \Omega$ (balanced) || 100nH

			min.	typ.	max.	
Center frequency	f_c		—	881,50	—	MHz
Maximum insertion attenuation	α_{max}	869,0 ... 894,0 MHz	—	1,8	2,1	dB
Amplitude ripple (p-p)	$\Delta\alpha$	869,0 ... 894,0 MHz	—	0,6	1,0	dB
Input VSWR		869,0 ... 894,0 MHz	—	1,7	1,9	
Output VSWR		869,0 ... 894,0 MHz	—	1,8	2,0	
Output amplitude balance (S_{31}/S_{21})		869,0 ... 894,0 MHz	-0,5	-0,1/+ 0,1	0,5	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		869,0 ... 894,0 MHz	-5,0	-1/+ 2	5,0	degree
Inter-band isolation	α_{min}	1930,0 ... 1990,0 MHz	30,0	52,0	—	dB
Attenuation	α_{min}	10,0 ... 824,0 MHz	45,0	65,0	—	dB
		824,0 ... 849,0 MHz	35,0	48,0	—	dB
		915,0 ... 960,0 MHz	23,0	26,0	—	dB
		960,0 ... 3000,0 MHz	45,0	59,0	—	dB
		3000,0 ... 6000,0 MHz	30,0	60,0	—	dB



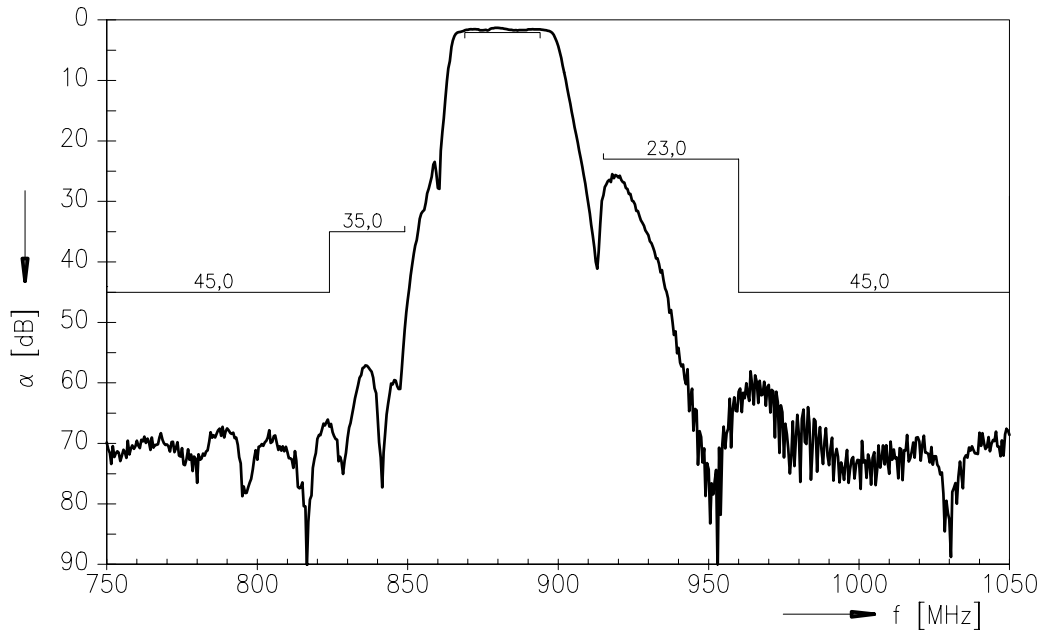
Characteristics Filter 1 (CDMA800)

Operating temperature range: $T = -30$ to $+85^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 100\ \Omega$ (balanced) || 100nH

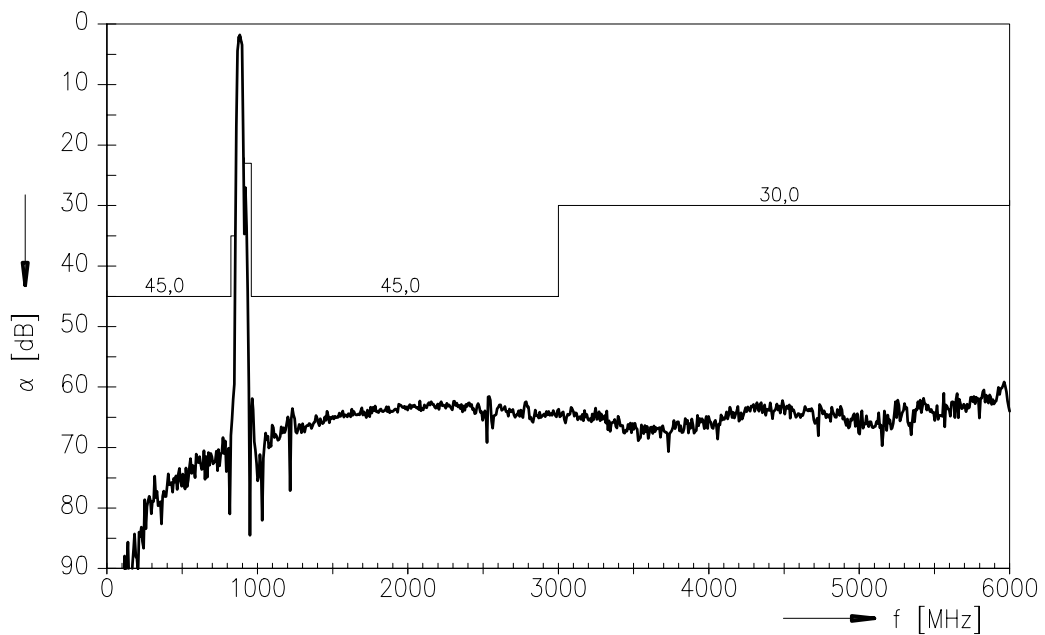
				min.	typ.	max.	
Center frequency	f_c			—	881,50	—	MHz
Maximum insertion attenuation	α_{\max}	869,0 ... 894,0	MHz	—	1,9	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$	869,0 ... 894,0	MHz	—	0,7	1,1	dB
Input VSWR		869,0 ... 894,0	MHz	—	1,7	1,9	
Output VSWR		869,0 ... 894,0	MHz	—	1,8	2,0	
Output amplitude balance (S_{31}/S_{21})		869,0 ... 894,0	MHz	-0,5	-0,1/ +0,1	0,5	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)		869,0 ... 894,0	MHz	-5,0	-1/+ 2	5,0	degree
Inter-band isolation	α_{\min}	1930,0 ... 1990,0	MHz	30,0	52,0	—	dB
Attenuation	α_{\min}	10,0 ... 824,0	MHz	45,0	65,0	—	dB
		824,0 ... 849,0	MHz	35,0	44,0	—	dB
		915,0 ... 960,0	MHz	23,0	25,0	—	dB
		960,0 ... 3000,0	MHz	45,0	59,0	—	dB
		3000,0 ... 6000,0	MHz	30,0	60,0	—	dB



Transfer function Filter 1 (CDMA800) - spec for 25 °C



Transfer function Filter 1 (CDMA800) - wideband





Characteristics Filter 2 (CDMA1900)

Operating temperature range: $T = +25 \pm 2 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 100 \text{ } \Omega$ (balanced) || 15nH

			min.	typ.	max.	
Center frequency	f_c		—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}	1930,0 ... 1990,0 MHz	—	2,6	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$	1930,0 ... 1990,0 MHz	—	1,2	1,8	dB
Input VSWR		1930,0 ... 1990,0 MHz	—	2,0	2,3	
Output VSWR		1930,0 ... 1990,0 MHz	—	2,0	2,3	
Output amplitude balance (S_{31} / S_{21})		1930,0 ... 1990,0 MHz	-1,4	-1,0/+ 0,8	1,4	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		1930,0 ... 1990,0 MHz	-12,0	-9/+ 9	12,0	degree
Inter-band isolation	α_{min}	869,0 ... 894,0 MHz	30,0	52,0	—	dB
Attenuation	α_{min}	10,0 ... 1850,0 MHz	30,0	37,0	—	dB
		1850,0 ... 1910,0 MHz	19,0	20,0	—	dB
		2040,0 ... 2200,0 MHz	25,0	32,0	—	dB
		2200,0 ... 2800,0 MHz	30,0	41,0	—	dB
		2800,0 ... 3400,0 MHz	40,0	46,0	—	dB
		3400,0 ... 6000,0 MHz	35,0	45,0	—	dB



Characteristics Filter 2 (CDMA1900)

Operating temperature range: $T = -30$ to $+85^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50 \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 100 \Omega$ (balanced) || 15nH

			min.	typ.	max.	
Center frequency	f_c		—	1960,0	—	MHz
Maximum insertion attenuation	α_{\max}	1930,0 ... 1990,0 MHz	—	2,7	3,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$	1930,0 ... 1990,0 MHz	—	1,3	2,2 ¹⁾	dB
Input VSWR		1930,0 ... 1990,0 MHz	—	2,0	2,3	
Output VSWR		1930,0 ... 1990,0 MHz	—	2,0	2,3	
Output amplitude balance (S_{31} / S_{21})		1930,0 ... 1990,0 MHz	-1,8	-1,0/+ 1,2	1,8	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^{\circ}$)		1930,0 ... 1990,0 MHz	-12,0	-9/ +9	12,0	degree
Inter-band isolation	α_{\min}	869,0 ... 894,0 MHz	30,0	52,0	—	dB
Attenuation	α_{\min}	10,0 ... 1850,0 MHz	30,0	37,0	—	dB
		1850,0 ... 1910,0 MHz	15,0	20,0	—	dB
		2040,0 ... 2200,0 MHz	25,0	32,0	—	dB
		2200,0 ... 2800,0 MHz	30,0	41,0	—	dB
		2800,0 ... 3400,0 MHz	40,0	46,0	—	dB
		3400,0 ... 6000,0 MHz	35,0	45,0	—	dB

1) 2,1 for $T = -30$ to $+70^{\circ}\text{C}$



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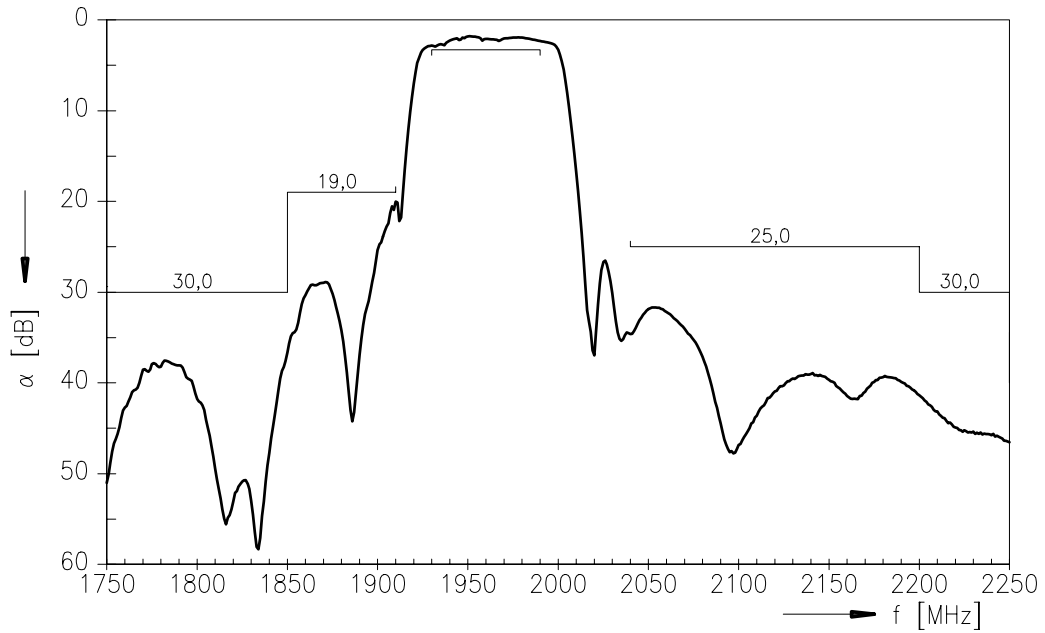
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881,5 / 1960,0 MHz

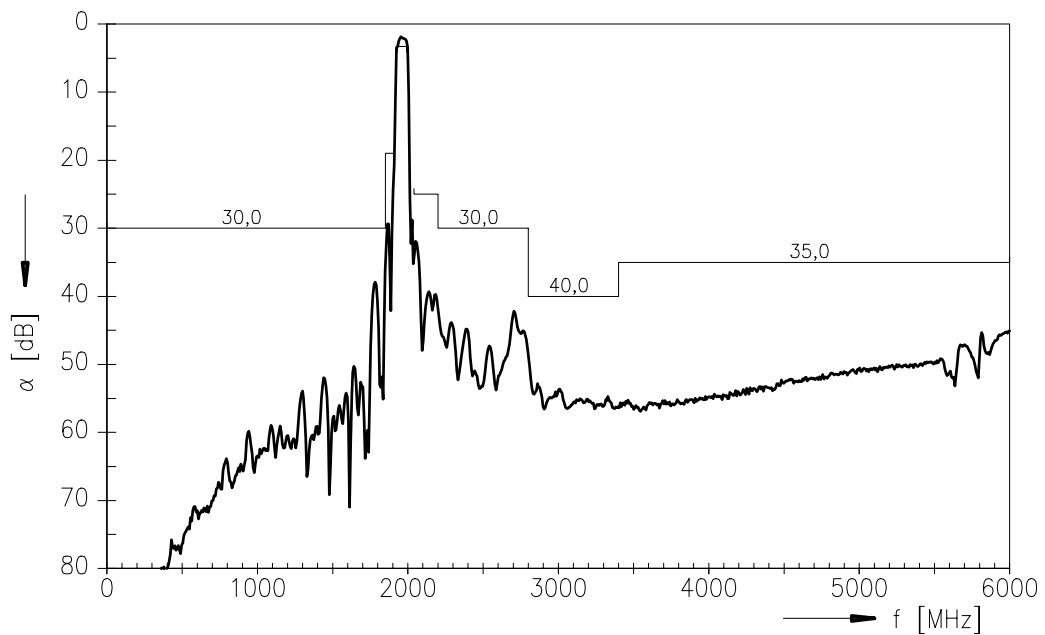
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Transfer function Filter 2 (CDMA1900) - spec for 25 °C



Transfer function Filter 2 (CDMA1900) - wideband





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881,5 / 1960,0 MHz

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