



# SAW Components

Data Sheet B7638





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Low-Loss Filter for Mobile Communication

836,5 / 881,5 MHz

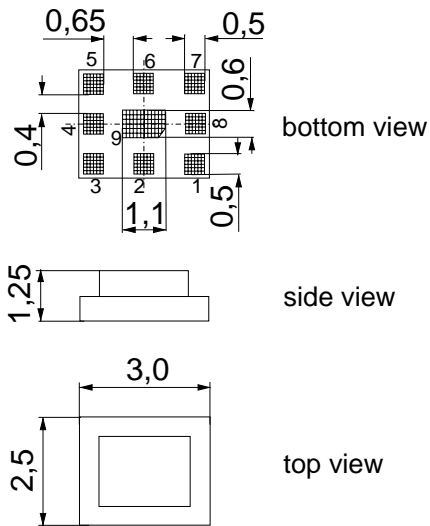
Data Sheet



Chip Sized SAW Package QCS9D

Features

- Low-loss duplexer for cellular band mobile telephone systems
- 50 Ω ports by integrated matching network
- Package for Surface Mounted Technology (SMT)
- Small size and low height
- RoHS compliant



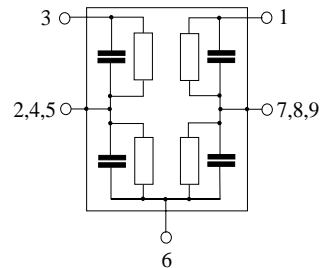
Dimensions in mm, approx. weight 0,035 g

Terminals

Ni, gold-plated

Pin configuration

- 3 TX Input
- 1 RX Output
- 6 Antenna
- 2, 4, 5 Ground
- 7, 8, 9 Ground



Type	Ordering code	Marking and Package according to	Packing according to
B7638	B39881-B7638-L710	C61157-A3-A12	F61074-V8211-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	$T$	- 30/+ 85	°C	machine model, 10 pulses source and load impedance 50 Ω } continuous wave
Storage temperature range	$T_{stg}$	- 40/+ 85	°C	
DC voltage	$V_{DC}$	5	V	
ESD voltage	$V_{ESD}$	100 <sup>1)</sup>	V	
Input power max.	$P_{IN}$			
		824,0 ... 849,0 MHz	30	dBm
		elsewhere	10	dBm

1) -acc. to JESD22-115A (Machine Model), 10 negative & 10 positive pulses



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Characteristics

Operating temperature range  $T = 25 \pm 2^\circ\text{C}$   
 Terminating impedance  $Z_{\text{ANT}} = 50 \Omega$ ;  $Z_{\text{RX}} = 50 \Omega$ ;  $Z_{\text{TX}} = 50 \Omega$

Characteristics TX - ANT		min.	typ.	max.	
Center frequency	$f_c$	—	836,50	—	MHz
Maximum insertion attenuation	$\alpha_{\text{max}}$				
	824,00 ... 849,00 MHz	—	1,8	2,1	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	824,00 ... 849,00 MHz	—	0,8	1,1	dB
Return loss					
	824,00 ... 849,00 MHz	10	12	—	dB
Attenuation	$\alpha$				
	100,00 ... 698,00 MHz	35	39	—	dB
	698,00 ... 746,00 MHz	36	38	—	dB
	746,00 ... 804,00 MHz	30	38	—	dB
	869,00 ... 894,00 MHz	46	50	—	dB
	954,00 ... 1570,00 MHz	30	36	—	dB
	1570,00 ... 1698,00 MHz	40	50	—	dB
	1698,00 ... 2547,00 MHz	30	38	—	dB
	2547,00 ... 3000,00 MHz	20	27	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Center frequency	$f_c$	—	881,50	—	MHz
Maximum insertion attenuation	$\alpha_{\text{max}}$				
	869,00 ... 894,00 MHz	—	2,2	2,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	869,00 ... 894,00 MHz	—	0,9	1,3	dB
Return loss					
	869,00 ... 894,00 MHz	9	11	—	dB
Attenuation	$\alpha$				
	100,00 ... 804,00 MHz	35	43	—	dB
	824,00 ... 849,00 MHz	54	61	—	dB
	954,00 ... 1648,00 MHz	35	45	—	dB
	1648,00 ... 1698,00 MHz	40	51	—	dB
	1698,00 ... 2547,00 MHz	40	50	—	dB
	2547,00 ... 3000,00 MHz	35	45	—	dB
TX band phase @ RX port reference plane					
	824,00 ... 849,00 MHz	130	—	230	degree



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Characteristics TX - RX		min.	typ.	max.	
Isolation between TX and RX path $\alpha$					
100,00 ...	800,00 MHz	50	57	—	dB
824,00 ...	849,00 MHz	56	59	—	dB
869,00 ...	894,00 MHz	47	50	—	dB
954,00 ...	1700,00 MHz	45	51	—	dB



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Characteristics

Operating temperature range  $T = -30$  to  $85^{\circ}\text{C}$   
 Terminating impedance  $Z_{\text{ANT}} = 50 \Omega$ ;  $Z_{\text{RX}} = 50 \Omega$ ;  $Z_{\text{TX}} = 50 \Omega$

Characteristics TX - ANT		min.	typ.	max.	
Center frequency	$f_c$	—	836,50	—	MHz
Maximum insertion attenuation	$\alpha_{\text{max}}$				
	824,00 ... 849,00 MHz	—	2,0	2,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	824,00 ... 849,00 MHz	—	1,0	1,3	dB
Return loss					
	824,00 ... 849,00 MHz	9	11	—	dB
Attenuation	$\alpha$				
	100,00 ... 698,00 MHz	35	39	—	dB
	698,00 ... 746,00 MHz	36	38	—	dB
	746,00 ... 804,00 MHz	30	38	—	dB
	869,00 ... 894,00 MHz	45	48	—	dB
	954,00 ... 1570,00 MHz	30	36	—	dB
	1570,00 ... 1698,00 MHz	40	50	—	dB
	1698,00 ... 2547,00 MHz	30	38	—	dB
	2547,00 ... 3000,00 MHz	20	27	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Center frequency	$f_c$	—	881,50	—	MHz
Maximum insertion attenuation	$\alpha_{\text{max}}$				
	869,00 ... 894,00 MHz	—	2,4	2,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	869,00 ... 894,00 MHz	—	1,3	1,7	dB
Return loss					
	869,00 ... 894,00 MHz	8	10	—	dB
Attenuation	$\alpha$				
	100,00 ... 804,00 MHz	35	43	—	dB
	824,00 ... 849,00 MHz	54	59	—	dB
	954,00 ... 1648,00 MHz	35	46	—	dB
	1648,00 ... 1698,00 MHz	40	51	—	dB
	1698,00 ... 2547,00 MHz	40	50	—	dB
	2547,00 ... 3000,00 MHz	35	45	—	dB
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Characteristics TX - RX		min.	typ.	max.	
Isolation between TX and RX path $\alpha$					
100,00 ...	800,00 MHz	50	56	—	dB
824,00 ...	849,00 MHz	55	57	—	dB
869,00 ...	894,00 MHz	47	49	—	dB
954,00 ...	1700,00 MHz	45	51	—	dB



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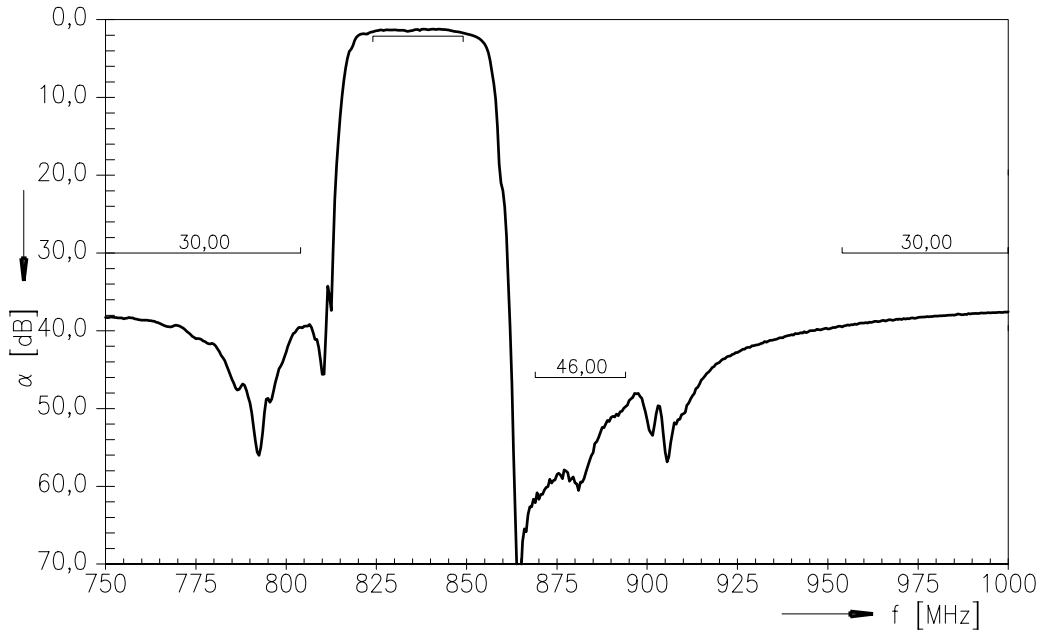
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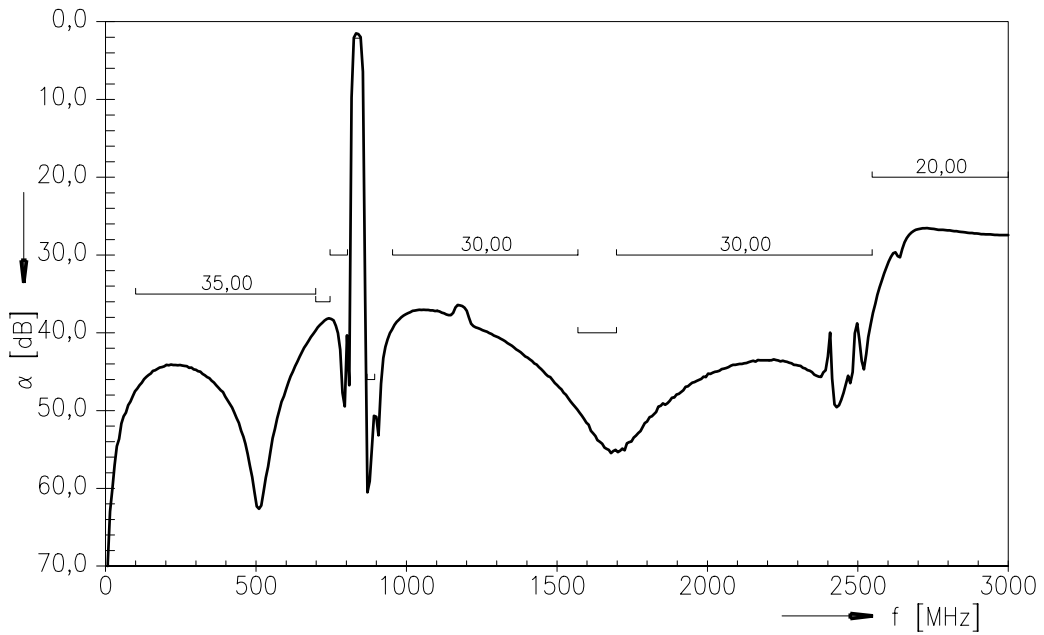
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Frequency Response TX - ANT

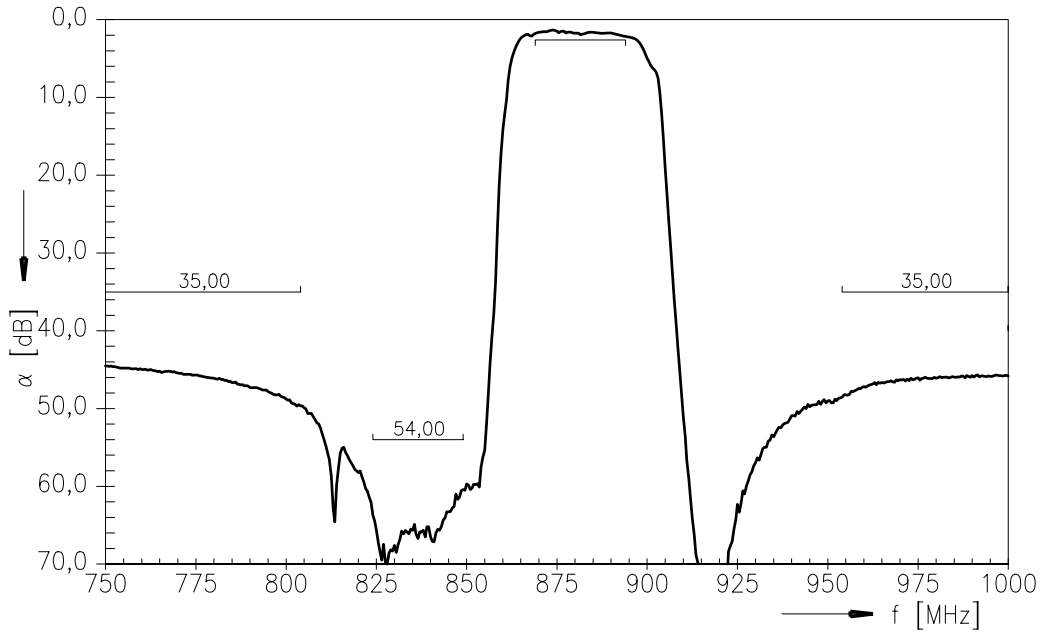


Frequency Response TX - ANT (wideband)

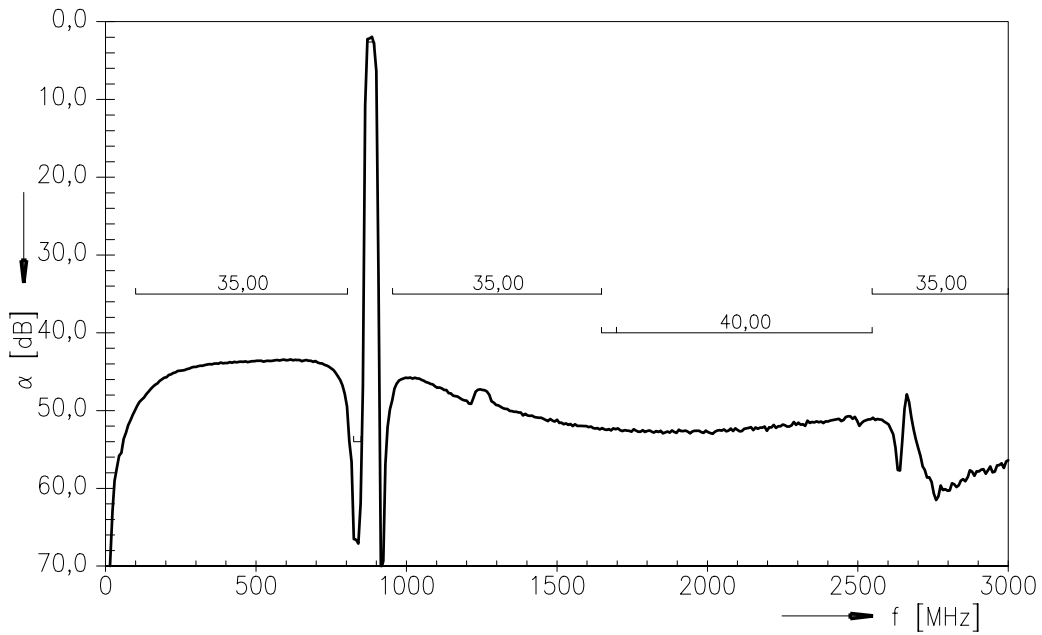




Frequency Response ANT - RX



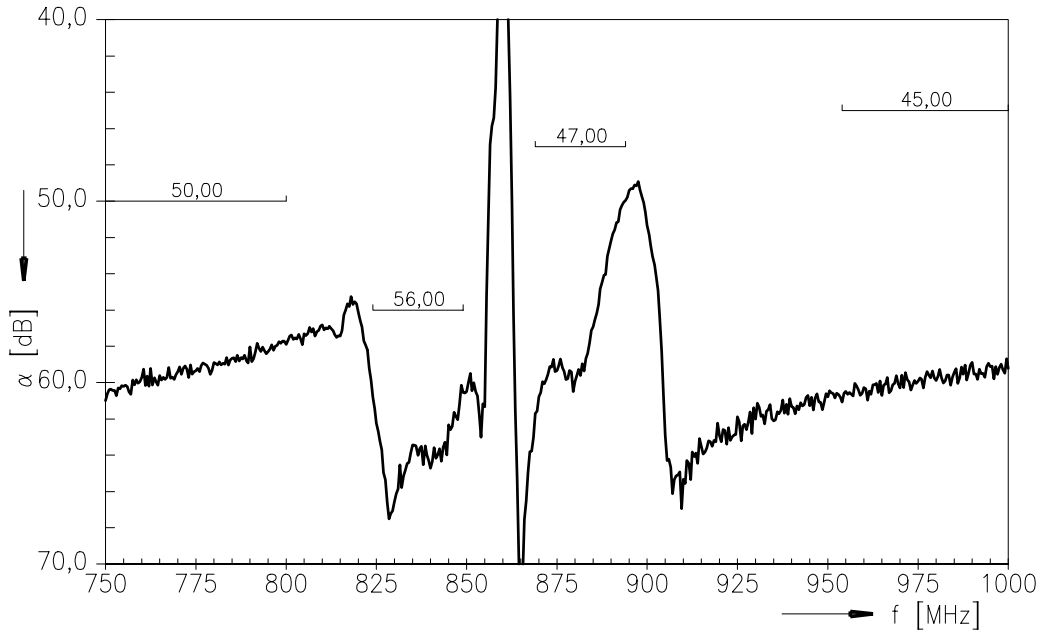
Frequency Response ANT - RX (wideband)



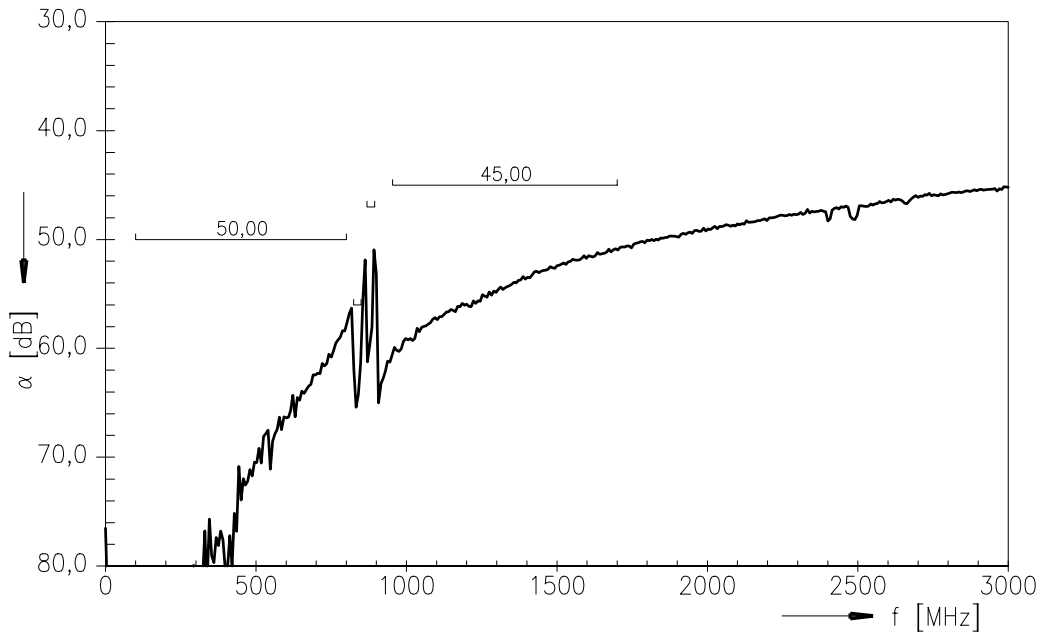




Frequency Response TX - RX



Frequency Response TX - RX (wideband)





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