



SAW Components

Data Sheet B4228

Data Sheet

An abstract, grayscale graphic featuring a stylized, glowing globe with a grid pattern. The word "EPCOS" is written in large, bold, white letters across the globe, appearing to be part of the design.



SAW Components

B4228

Low-Loss Filter for Mobile Communication

836,5 / 881,5 MHz

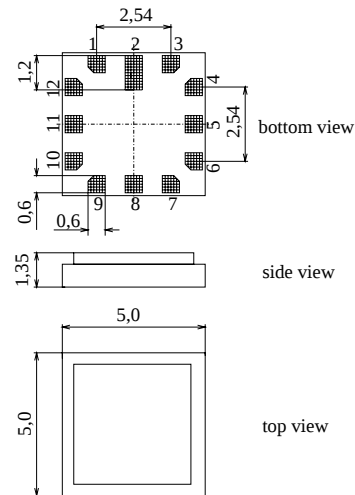
Data Sheet



Features

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

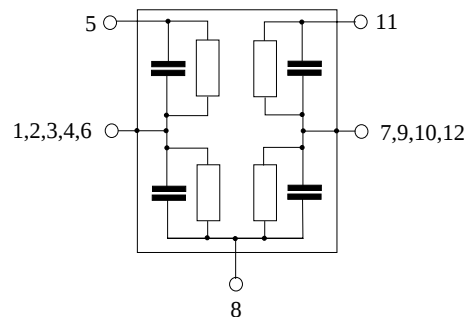
Chip sized SAW package QCS12B



Dimensions in mm, approx. weight 0,13 g

Pin configuration

5	TX Input
11	RX Output
8	Antenna
1, 2, 3, 4, 6	Ground
7, 9, 10, 12	Ground



Type	Ordering code	Marking and Package according to	Packing according to
B4228	B39881-B4228-D410	C61157-A3-A2	F61074-V8159-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operating temperature range	T	- 30/+ 85	$^{\circ}\text{C}$	source and load impedance 50 Ω } continuous wave
Storage temperature range	T_{stg}	- 40/+ 85	$^{\circ}\text{C}$	
DC voltage	V_{DC}	0	V	
Input power max.	P_{IN}	30	dBm	
824,0 ... 849,0 MHz		10	dBm	
elsewhere				



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Characteristics

Reference temperature	T	$= 25 \pm 2^\circ \text{C}$
ANT terminating impedance	Z_{ANT}	$= 50 \Omega$
RX terminating impedance	Z_{RX}	$= 50 \Omega$
TX terminating impedance	Z_{TX}	$= 50 \Omega$

Characteristics TX - ANT		min.	typ.	max.	
Center frequency	f_c	—	836,5	—	MHz
Maximum insertion attenuation	α_{max}	—	2,2	2,4	dB
824,00 ... 849,00 MHz		—	2,2	2,4	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,8	1,1	dB
824,00 ... 849,00 MHz		—	0,8	1,1	dB
Return loss		7,5	8,2	—	dB
824,00 ... 849,00 MHz		7,5	8,2	—	dB
Attenuation	α	21	32	—	dB
0,03 ... 800,00 MHz		21	32	—	dB
869,00 ... 894,00 MHz		44	46	—	dB
914,00 ... 1004,00 MHz		30	34	—	dB
1004,00 ... 3200,00 MHz		20	23	—	dB
1648,00 ... 1698,00 MHz		30	38	—	dB
2472,00 ... 2547,00 MHz		20	25	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}	—	2,9	3,3	dB
869,00 ... 894,00 MHz		—	2,9	3,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,0	1,8	dB
869,00 ... 894,00 MHz		—	1,0	1,8	dB
Return loss		9,0	10,0	—	dB
869,00 ... 894,00 MHz		9,0	10,0	—	dB
Attenuation	α	35	40	—	dB
0,03 ... 824,00 MHz		35	40	—	dB
824,00 ... 849,00 MHz		54	55	—	dB
914,00 ... 1000,00 MHz		36	40	—	dB
1000,00 ... 1200,00 MHz		36	39	—	dB
1200,00 ... 3200,00 MHz		30	35	—	dB

Characteristics TX - RX		min.	typ.	max.	
Isolation between TX and RX path	α	54	56	—	dB
824,00 ... 849,00 MHz		54	56	—	dB
869,00 ... 894,00 MHz		45	46	—	dB



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Characteristics

Reference temperature	T	= -30 to 85 °C
ANT terminating impedance	Z_{ANT}	= 50 Ω
RX terminating impedance	Z_{RX}	= 50 Ω
TX terminating impedance	Z_{TX}	= 50 Ω

Characteristics TX - ANT		min.	typ.	max.	
Center frequency	f_c	—	836,5	—	MHz
Maximum insertion attenuation	α_{max}	—	2,2	2,5	dB
824,00 ... 849,00 MHz		—	2,2	2,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,8	1,1	dB
824,00 ... 849,00 MHz		—	0,8	1,1	dB
Return loss		7,5	8,2	—	dB
824,00 ... 849,00 MHz		7,5	8,2	—	dB
Attenuation	α	21	32	—	dB
0,03 ... 800,00 MHz		21	32	—	dB
869,00 ... 894,00 MHz		44	45	—	dB
914,00 ... 1004,00 MHz		30	34	—	dB
1004,00 ... 3200,00 MHz		20	23	—	dB
1648,00 ... 1698,00 MHz		30	38	—	dB
2472,00 ... 2547,00 MHz		20	25	—	dB

Characteristics ANT - RX		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}	—	3,4	3,8	dB
869,00 ... 894,00 MHz		—	3,4	3,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,5	2,3	dB
869,00 ... 894,00 MHz		—	1,5	2,3	dB
Return loss		9,0	10,0	—	dB
869,00 ... 894,00 MHz		9,0	10,0	—	dB
Attenuation	α	35	40	—	dB
0,03 ... 824,00 MHz		35	40	—	dB
824,00 ... 849,00 MHz		53	54	—	dB
914,00 ... 1000,00 MHz		36	40	—	dB
1000,00 ... 1200,00 MHz		36	39	—	dB
1200,00 ... 3200,00 MHz		30	35	—	dB

Characteristics TX - RX		min.	typ.	max.	
Isolation between TX and RX path	α	52	53	—	dB
824,00 ... 849,00 MHz		52	53	—	dB
869,00 ... 894,00 MHz		45	46	—	dB



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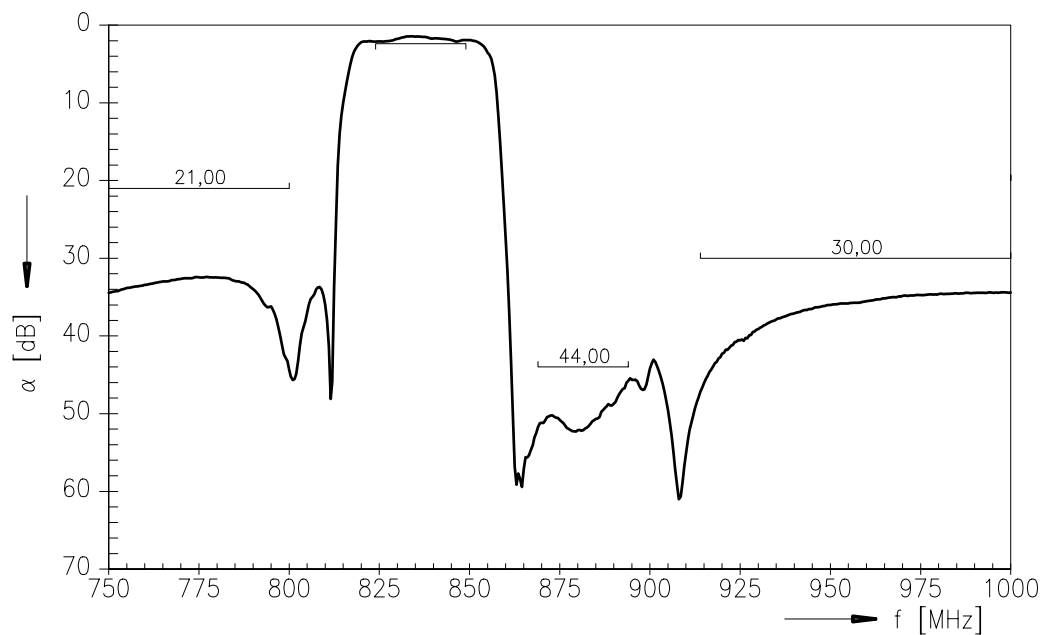
Low-Loss Filter for Mobile Communication

836,5 / 881,5 MHz

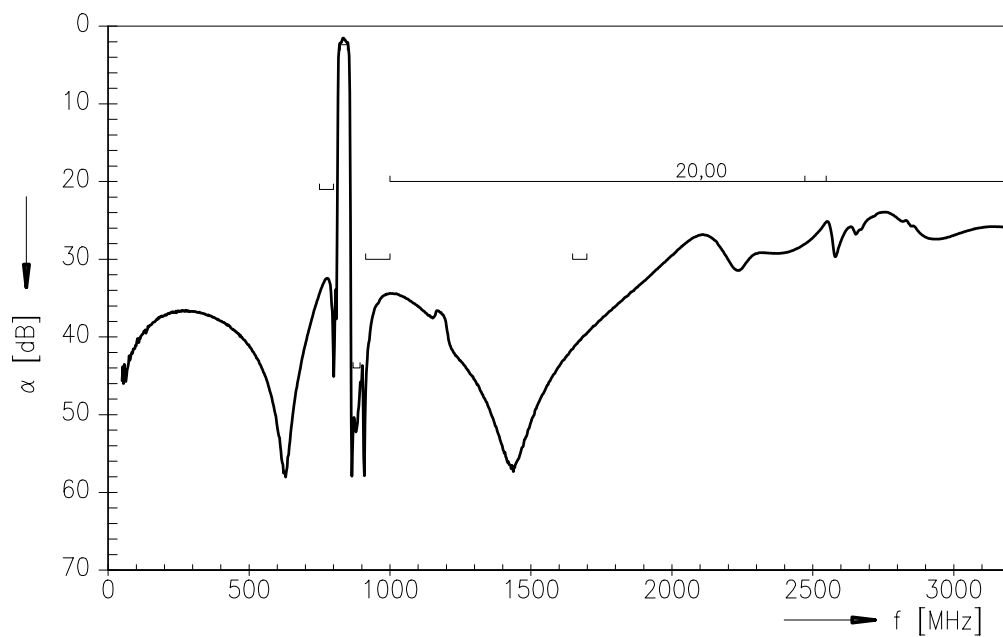
Data Sheet



Frequency Response TX - ANT



Frequency Response TX - ANT (wideband)





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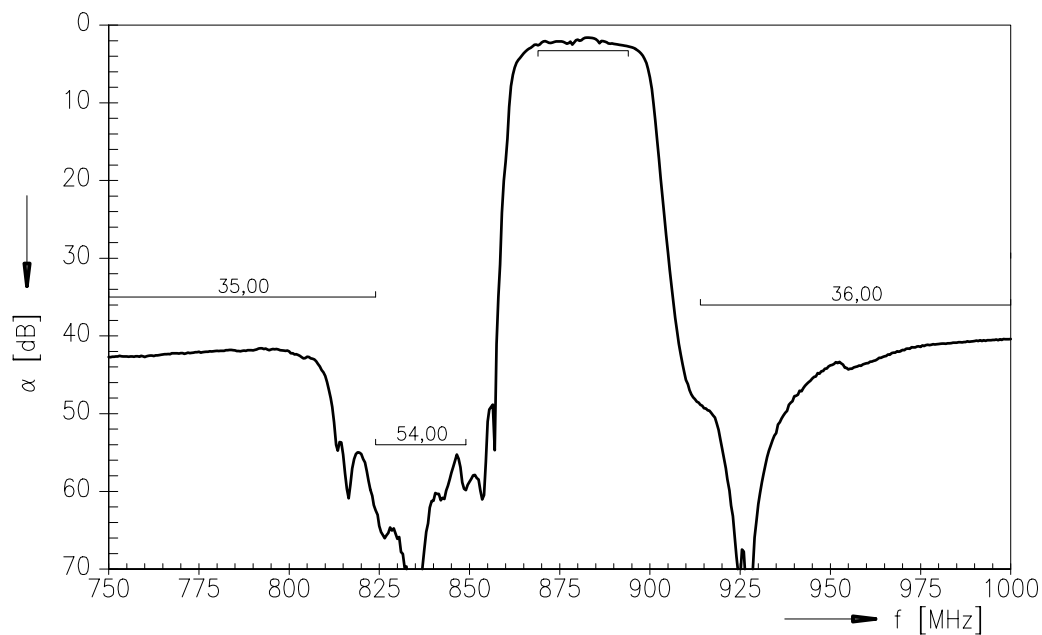
Low-Loss Filter for Mobile Communication

836,5 / 881,5 MHz

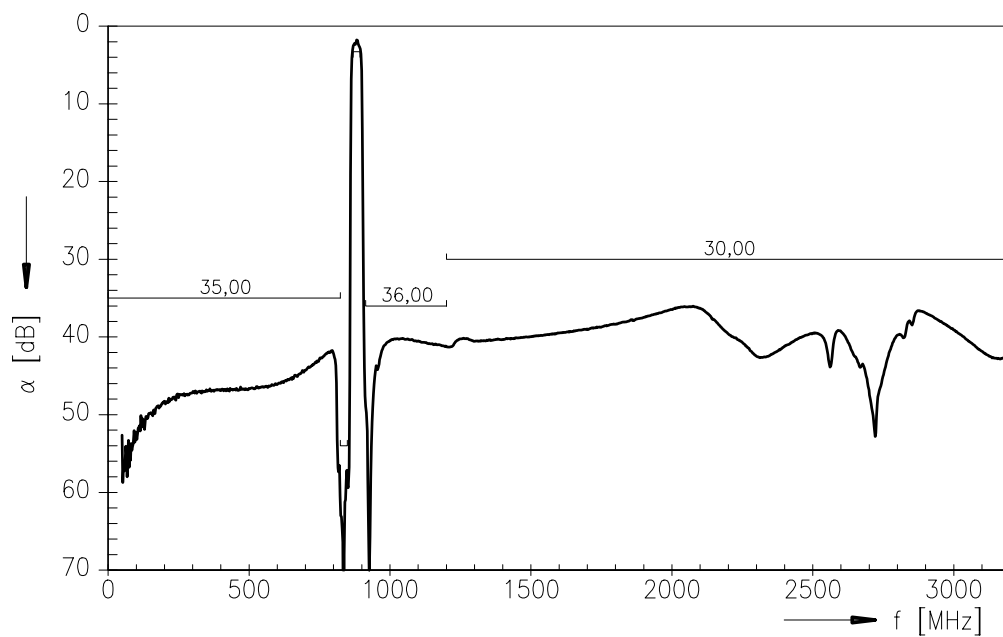
Data Sheet



Frequency Response ANT - RX



Frequency Response ANT - RX (wideband)





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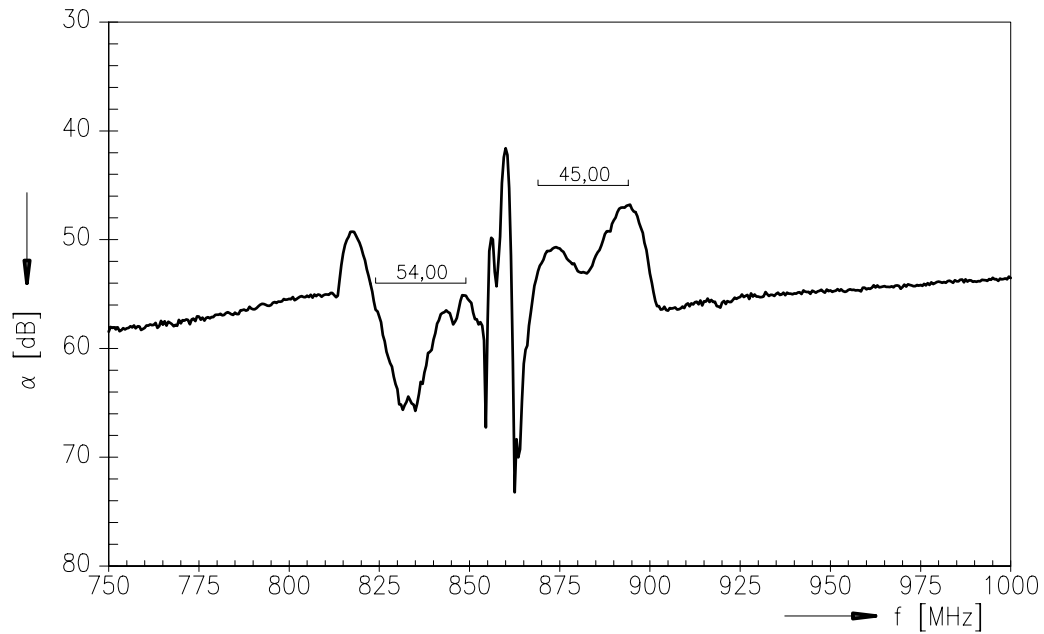
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836,5 / 881,5 MHz

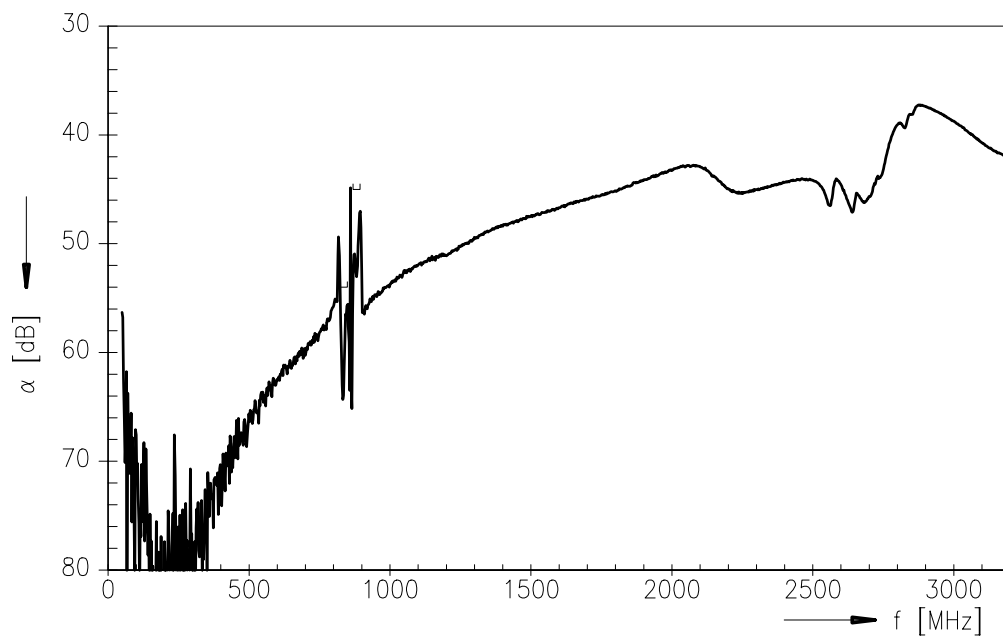
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Frequency Response TX - RX



Frequency Response TX - RX (wideband)





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Data Sheet	SMD

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