



SAW Components

Data Sheet B4140





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B4140

Low-Loss Filter for Mobile Communication

897,50 MHz

Data Sheet



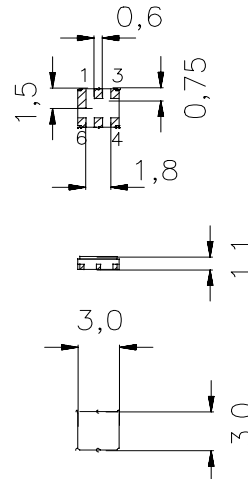
Ceramic package **DCC6D**

Features

- Low-loss RF filter for mobile telephone EGSM systems, transmit path
- Low amplitude ripple
- Usable passband 35 MHz
- Balanced to unbalanced Operation
- Impedance transformation from 200 Ω to 50 Ω
- Ceramic package for **Surface Mounted Technology (SMT)**

Terminals

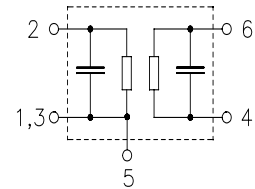
- Ni, gold-plated



Dimensions in mm, approx. weight 0,037 g

Pin configuration

- 4, 6 Input, balanced
- 5 To be grounded
- 2 Output, unbalanced
- 1, 3 Output ground
- 1, 3, 5 Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B4140	B39901-B4140-U510	C61157-A7-A68	F61074-V8089-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 25/ + 80	°C	source impedance 50 Ω, load impedance 200 Ω, peak power of GSM signal, duty cycle 2 : 8 duty cycle 1: 8
Storage temperature range	T_{stg}	- 40 / + 85	°C	
DC voltage	V_{DC}	0	V	
Input power max. 880 ... 915 MHz	P_{IN}	8,5 10,0	dBm dBm	



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Characteristics

Operating temperature range: $T = 25 \pm 2 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$
 Terminating load impedance: $Z_L = 200 \text{ } \Omega \parallel 56 \text{ nH}$
 (L simulated with Q factor 20)

			min.	typ.	max.	
Center frequency	f_C		—	897,5	—	MHz
Maximum insertion attenuation	α_{max}	880,0 ... 915,0 MHz	—	2,8	3,4	dB
Amplitude ripple (p-p)	$\Delta\alpha$	880,0 ... 915,0 MHz	—	1,2	1,5	dB
Input VSWR		880,0 ... 915,0 MHz	—	1,7	2,0	
Output VSWR		880,0 ... 915,0 MHz	—	1,6	2,0	
Attenuation	α					
		0,0 ... 600,0 MHz	60	77	—	dB
		600,0 ... 800,0 MHz	50	72	—	dB
		800,0 ... 860,0 MHz	40	44	—	dB
		925,0 ... 935,0 MHz	9	14	—	dB
		935,0 ... 960,0 MHz	25	27	—	dB
		960,0 ... 1000,0 MHz	25	40	—	dB
		1000,0 ... 1050,0 MHz	40	64	—	dB
		1050,0 ... 1500,0 MHz	55	68	—	dB
		1500,0 ... 2000,0 MHz	50	70	—	dB
		2000,0 ... 3000,0 MHz	30	44	—	dB
		3000,0 ... 5000,0 MHz	18	29	—	dB
		5000,0 ... 6000,0 MHz	10	28	—	dB
Symmetry in band (referenced to the matched operating condition)						
	$ S_{31} / S_{21} $	880,0 ... 915,0 MHz	-1,0	0	1,0	dB
	$\arg(S_{31}/S_{21})$	880,0 ... 915,0 MHz	170	180	190	°



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Operating temperature range: $T = +20$ to $+40$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega \parallel 56 \text{ nH}$
 (L simulated with Q factor 20)

				min.	typ.	max.	
Center frequency		f_C		—	897,5	—	MHz
Maximum insertion attenuation	880,0 ... 915,0	MHz	α_{\max}	—	2,9	3,6	dB
Amplitude ripple (p-p)	880,0 ... 915,0	MHz	$\Delta\alpha$	—	1,3	1,7	dB
Input VSWR	880,0 ... 915,0	MHz		—	1,7	2,0	
Output VSWR	880,0 ... 915,0	MHz		—	1,6	2,0	
Attenuation			α				
	0,0 ... 600,0	MHz		60	77	—	dB
	600,0 ... 800,0	MHz		50	72	—	dB
	800,0 ... 860,0	MHz		40	44	—	dB
	925,0 ... 935,0	MHz		9	13	—	dB
	935,0 ... 960,0	MHz		25	27	—	dB
	960,0 ... 1000,0	MHz		25	40	—	dB
	1000,0 ... 1050,0	MHz		40	64	—	dB
	1050,0 ... 1500,0	MHz		55	68	—	dB
	1500,0 ... 2000,0	MHz		50	70	—	dB
	2000,0 ... 3000,0	MHz		30	44	—	dB
	3000,0 ... 5000,0	MHz		18	29	—	dB
	5000,0 ... 6000,0	MHz		10	28	—	dB
Symmetry in band (referenced to the matched operating condition)							
	$ S_{31} / S_{21} $	880,0 ... 915,0	MHz	-1,0	0	1,0	dB
	$\arg(S_{31}/S_{21})$	880,0 ... 915,0	MHz	170	180	190	°



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Operating temperature range: $T = +10$ to $+60$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega \parallel 56 \text{ nH}$
 (L simulated with Q factor 20)

			min.	typ.	max.	
Center frequency	f_C		—	897,5	—	MHz
Maximum insertion attenuation	α_{max}	880,0 ... 915,0 MHz	—	2,9	3,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$	880,0 ... 915,0 MHz	—	1,3	1,9	dB
Input VSWR		880,0 ... 915,0 MHz	—	1,7	2,0	
Output VSWR		880,0 ... 915,0 MHz	—	1,6	2,0	
Attenuation	α					
		0,0 ... 600,0 MHz	60	77	—	dB
		600,0 ... 800,0 MHz	50	72	—	dB
		800,0 ... 860,0 MHz	40	44	—	dB
		925,0 ... 935,0 MHz	8	12	—	dB
		935,0 ... 960,0 MHz	24	27	—	dB
		960,0 ... 1000,0 MHz	25	40	—	dB
		1000,0 ... 1050,0 MHz	40	64	—	dB
		1050,0 ... 1500,0 MHz	55	68	—	dB
		1500,0 ... 2000,0 MHz	50	70	—	dB
		2000,0 ... 3000,0 MHz	30	44	—	dB
		3000,0 ... 5000,0 MHz	18	29	—	dB
		5000,0 ... 6000,0 MHz	10	28	—	dB
Symmetry in band (referenced to the matched operating condition)						
	$ S_{31} / S_{21} $	880,0 ... 915,0 MHz	-1,0	0	1,0	dB
	$\arg(S_{31}/S_{21})$	880,0 ... 915,0 MHz	170	180	190	°



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Operating temperature range: $T = -10$ to $+80$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega \parallel 56 \text{ nH}$
 (L simulated with Q factor 20)

			min.	typ.	max.	
Center frequency	f_C		—	897,5	—	MHz
Maximum insertion attenuation	α_{max}	880,0 ... 915,0 MHz	—	3,2	4,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$	880,0 ... 915,0 MHz	—	1,6	2,3	dB
Input VSWR		880,0 ... 915,0 MHz	—	1,7	2,2	
Output VSWR		880,0 ... 915,0 MHz	—	1,6	2,2	
Attenuation	α					
		0,0 ... 600,0 MHz	60	77	—	dB
		600,0 ... 800,0 MHz	50	72	—	dB
		800,0 ... 860,0 MHz	35	44	—	dB
		925,0 ... 935,0 MHz	7	11	—	dB
		935,0 ... 960,0 MHz	23	26	—	dB
		960,0 ... 1000,0 MHz	25	40	—	dB
		1000,0 ... 1050,0 MHz	40	64	—	dB
		1050,0 ... 1500,0 MHz	55	68	—	dB
		1500,0 ... 2000,0 MHz	50	70	—	dB
		2000,0 ... 3000,0 MHz	30	44	—	dB
		3000,0 ... 5000,0 MHz	18	29	—	dB
		5000,0 ... 6000,0 MHz	10	28	—	dB
Symmetry in band (referenced to the matched operating condition)						
	$ S_{31} / S_{21} $	880,0 ... 915,0 MHz	-1,0	0	1,0	dB
	$\arg(S_{31}/S_{21})$	880,0 ... 915,0 MHz	170	180	190	°



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Characteristics

Operating temperature range: $T = -25$ to $+70$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega \parallel 56$ nH
 (L simulated with Q factor 20)

			min.	typ.	max.	
Center frequency	f_C		—	897,5	—	MHz
Maximum insertion attenuation	α_{max}	880,0 ... 915,0 MHz	—	3,4	4,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$	880,0 ... 915,0 MHz	—	1,8	2,9	dB
Input VSWR		880,0 ... 915,0 MHz	—	2,1	2,4	
Output VSWR		880,0 ... 915,0 MHz	—	2,4	2,5	
Attenuation	α					
		0,0 ... 600,0 MHz	60	77	—	dB
		600,0 ... 800,0 MHz	50	72	—	dB
		800,0 ... 860,0 MHz	35	44	—	dB
		860,0 ... 870,0 MHz	10	36	—	dB
		925,0 ... 935,0 MHz	7	11	—	dB
		935,0 ... 960,0 MHz	23	26	—	dB
		960,0 ... 1000,0 MHz	25	40	—	dB
		1000,0 ... 1050,0 MHz	40	64	—	dB
		1050,0 ... 1500,0 MHz	55	68	—	dB
		1500,0 ... 2000,0 MHz	50	70	—	dB
		2000,0 ... 3000,0 MHz	30	44	—	dB
		3000,0 ... 5000,0 MHz	18	29	—	dB
		5000,0 ... 6000,0 MHz	10	28	—	dB
Symmetry in band (referenced to the matched operating condition)						
	$ S_{31} / S_{21} $	880,0 ... 915,0 MHz	-1,0	0	1,0	dB
	$\arg(S_{31}/S_{21})$	880,0 ... 915,0 MHz	170	180	190	°



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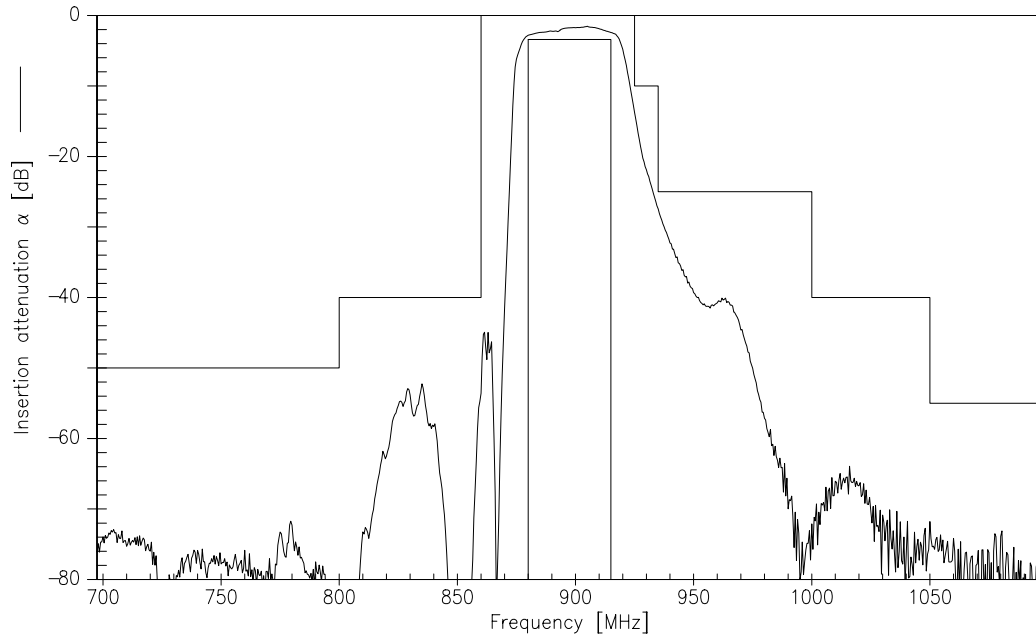
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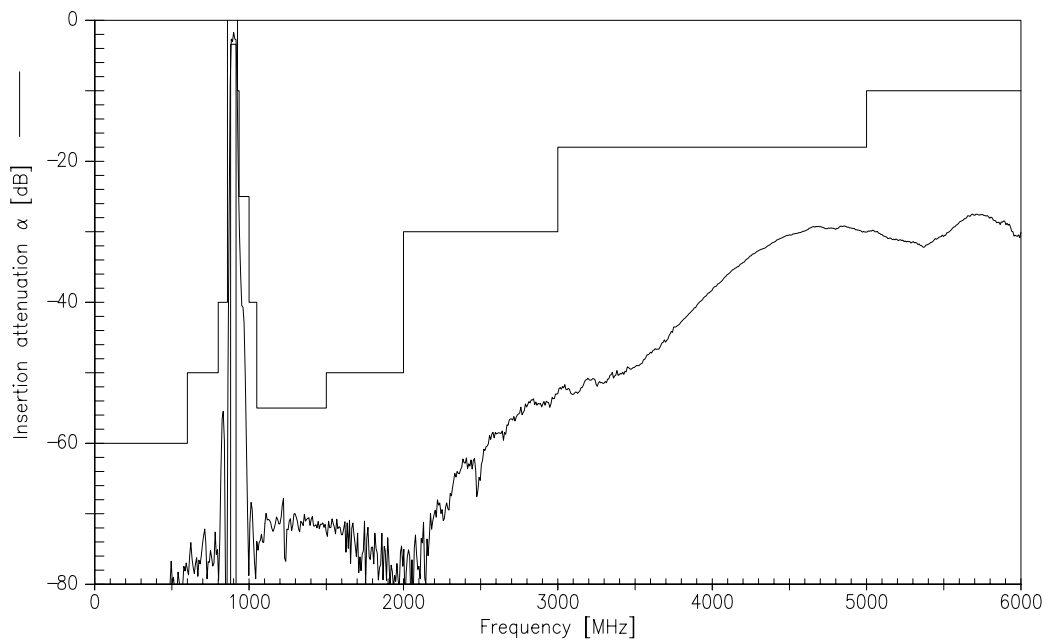
Data Sheet



Transfer function (spec at 25 °C)

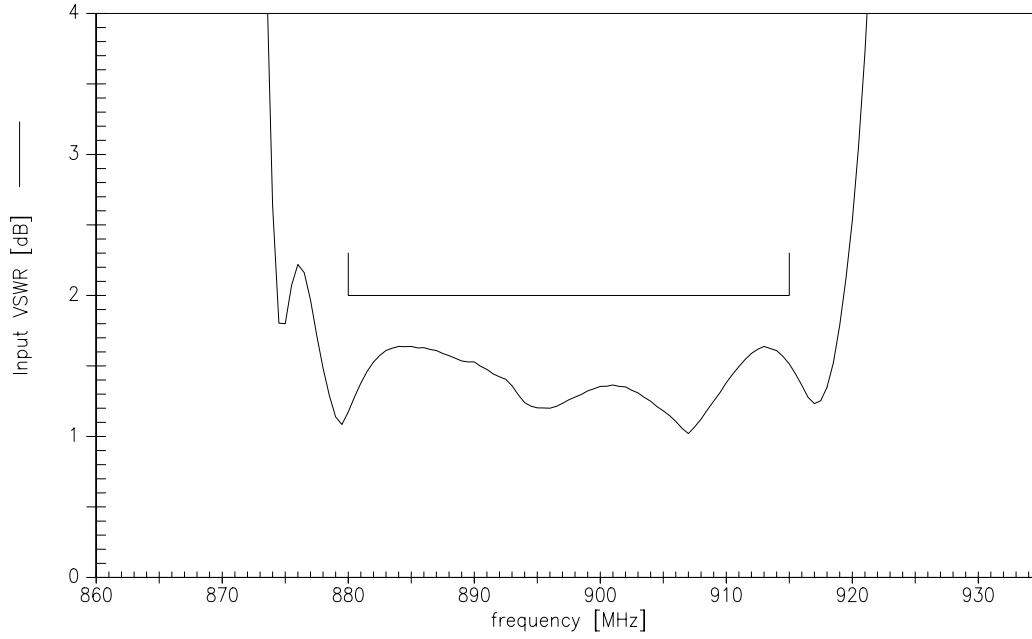


Transfer function (wideband)

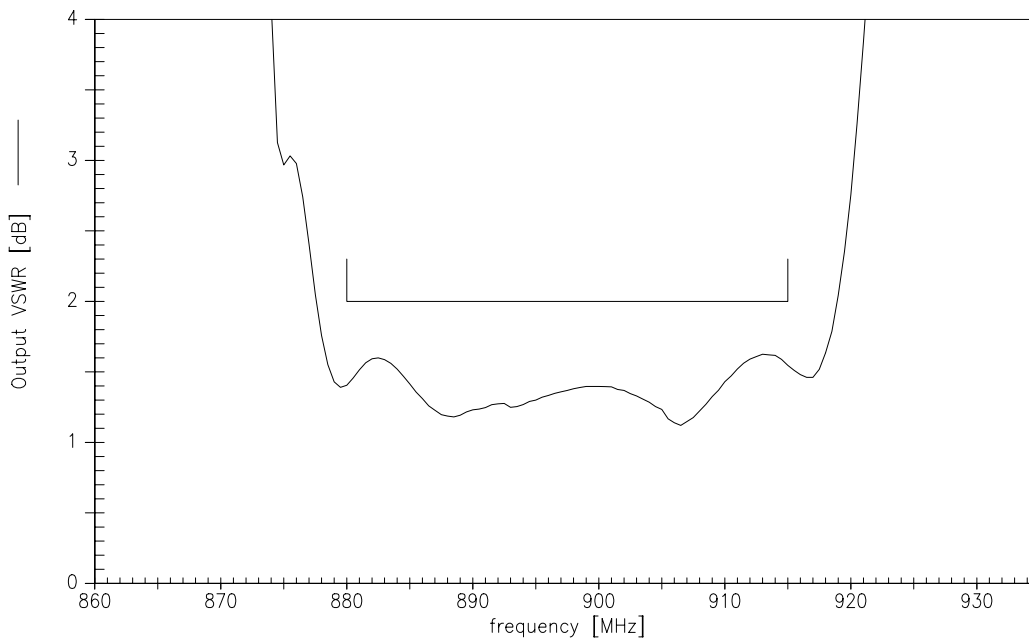




Input VSWR (spec at 25 °C)

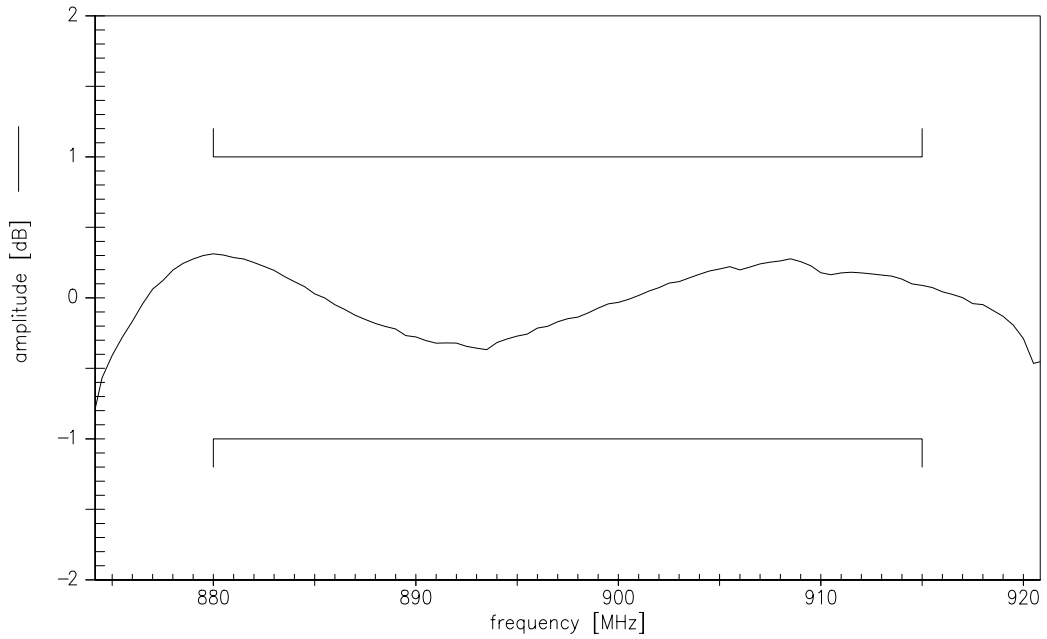


Output VSWR

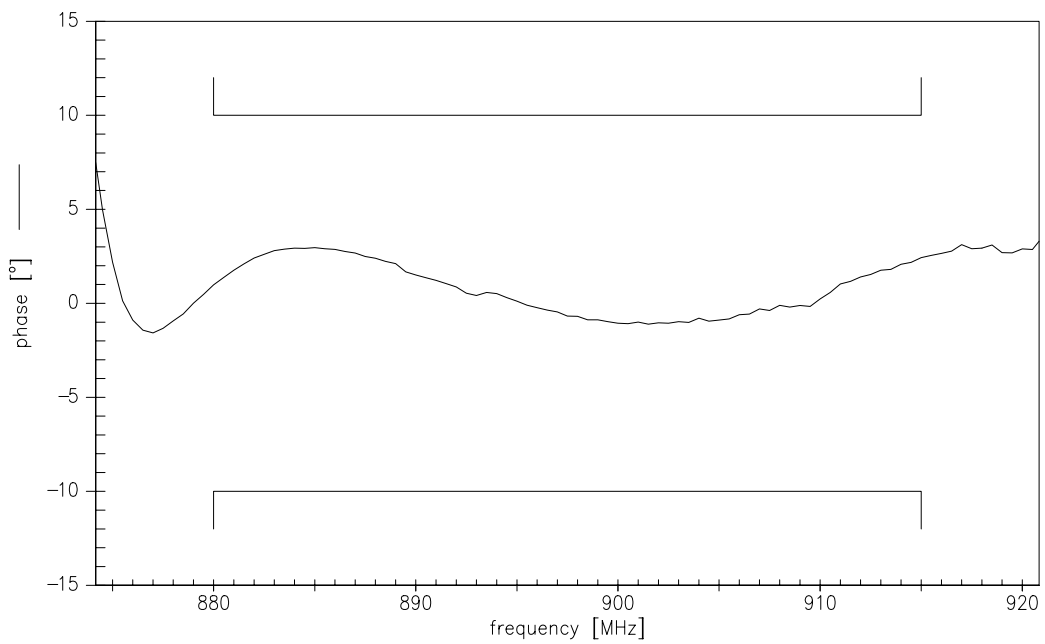




Amplitude Symmetry $|S_{31}|/|S_{21}|$ (referenced to the matched operating condition)



Phase Symmetry $\arg(S_{31}/S_{21}) - 180^\circ$ (referenced to the matched operating condition)





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