



SAW Components

Data Sheet B5007





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B5007

Low-Loss Filter

143,25 MHz

Data Sheet

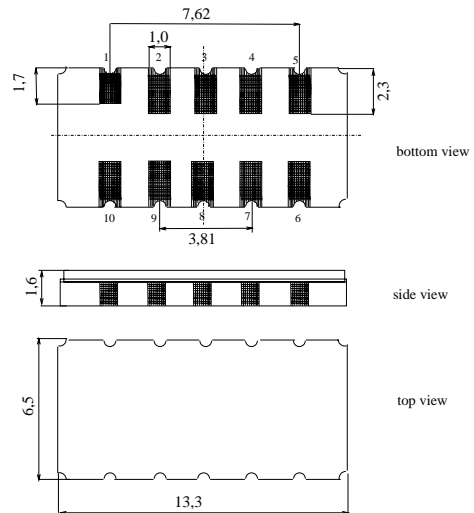
Features

- Low-loss IF filter for CDMA2000 base station, receive path
- 3,78 MHz usable bandwidth
- Balanced or unbalanced operation possible
- Temperature stable
- Hermetically sealed ceramic SMD package

Terminals

- Gold plated

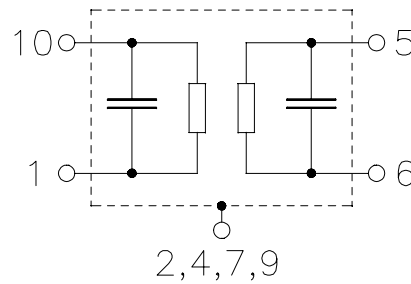
Ceramic package **DCC12A**



Dimensions in mm, approx. weight 0,4 g

Pin configuration

- | | |
|------------|----------------|
| 10 | Input |
| 1 | Input ground |
| 5 | Output |
| 6 | Output ground |
| 2, 4, 7, 9 | Case Ground |
| 3, 8 | To be grounded |



Type	Ordering code	Marking and Package according to	Packing according to
B5007	B39141-B5007-H510	C61157-A7-A94	F61074-V8163-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	-30 / +85	°C
Storage temperature range	T_{stg}	-30 / +85	°C
DC voltage	V_{DC}	0	V
Source power	P_s	0	dBm


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Characteristics

Operating temperature range: $T = 0 \dots 70 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ unbalanced and matching network
 Terminating load impedance: $Z_L = 50 \text{ } \Omega$ unbalanced and matching network

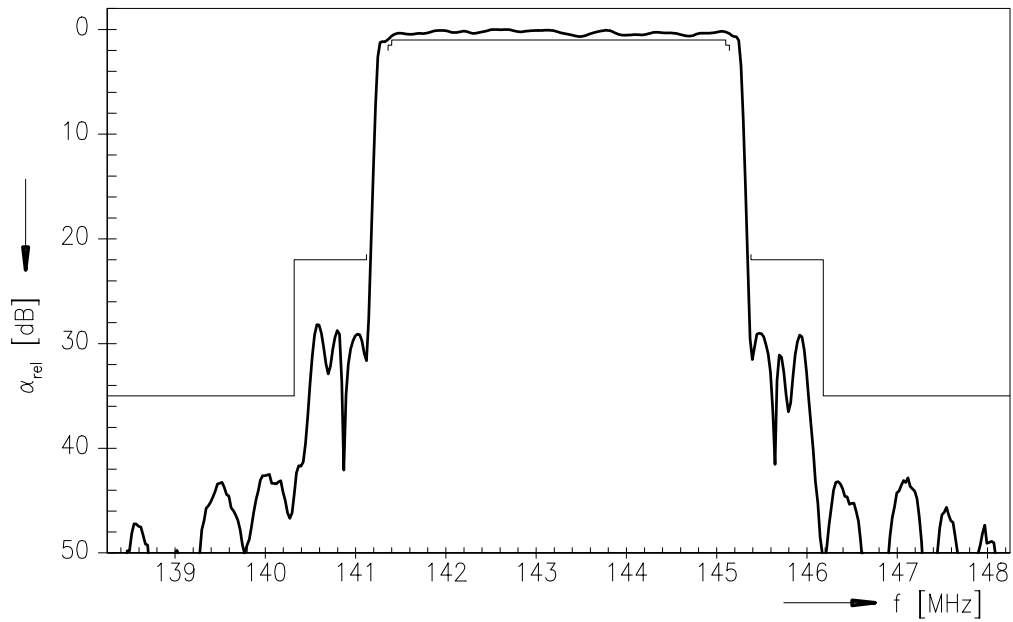
		min.	typ.	max.		
Nominal frequency	f_N	—	143,25	—	MHz	
Minimum insertion attenuation (including matching network)	α_{\min}	—	18,5	22,0	dB	
Passband width $\alpha_{\text{rel}} \leq 1,5 \text{ dB}$	$B_{1,5\text{dB}}$	3,78	3,95	—	MHz	
Amplitude ripple (p-p)	$\Delta\alpha$					
	$f_N \pm 1,89 \text{ MHz}$	—	1,0	1,5	dB	
	$f_N \pm 1,85 \text{ MHz}$	—	0,6	1,0	dB	
Group delay ripple (p-p)	$\Delta\tau$					
	$f_N \pm 1,875 \text{ MHz}$	—	300	400	ns	
	$f_N \pm 1,775 \text{ MHz}$	—	150	220	ns	
Difference of mean group delay in adj. channel ¹⁾	$f_N + k*1,25 \text{ MHz}$	$\Delta\tau_{\text{ch}}$	—	8	30	ns
Absolute Group delay	$f_N \pm 1,875 \text{ MHz}$	τ	1,8	2,0	2,35	μs
Phase Linearity ¹⁾ (rms)	$\Delta\phi$					
	$f_N + k*1,25 \text{ MHz} \pm 0,625 \text{ MHz}$	—	1,0	2,0	°	
Average Error Vector Magnitude ¹⁾	EVM					
	$f_N + k*1,25 \text{ MHz} \pm 0,625 \text{ MHz}$	—	2,5	4,0	%	
Relative attenuation (relative to α_{\min})	α_{rel}					
	$f_N \pm 2,13 \text{ MHz} \dots f_N \pm 2,93 \text{ MHz}$	22	27	—	dB	
	$f_N \pm 2,93 \text{ MHz} \dots f_N \pm 35 \text{ MHz}$	35	40	—	dB	
	$f_N \pm 35 \text{ MHz} \dots f_N \pm 45 \text{ MHz}$	40	55	—	dB	
Temperature coefficient of frequency ²⁾	TC_f	—	-0,036	—	ppm/K ²	
Turnover temperature	T_0	—	35	—	°C	

¹⁾ $k = (-1,0,1)$
²⁾ Temperature dependance of f_c : $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

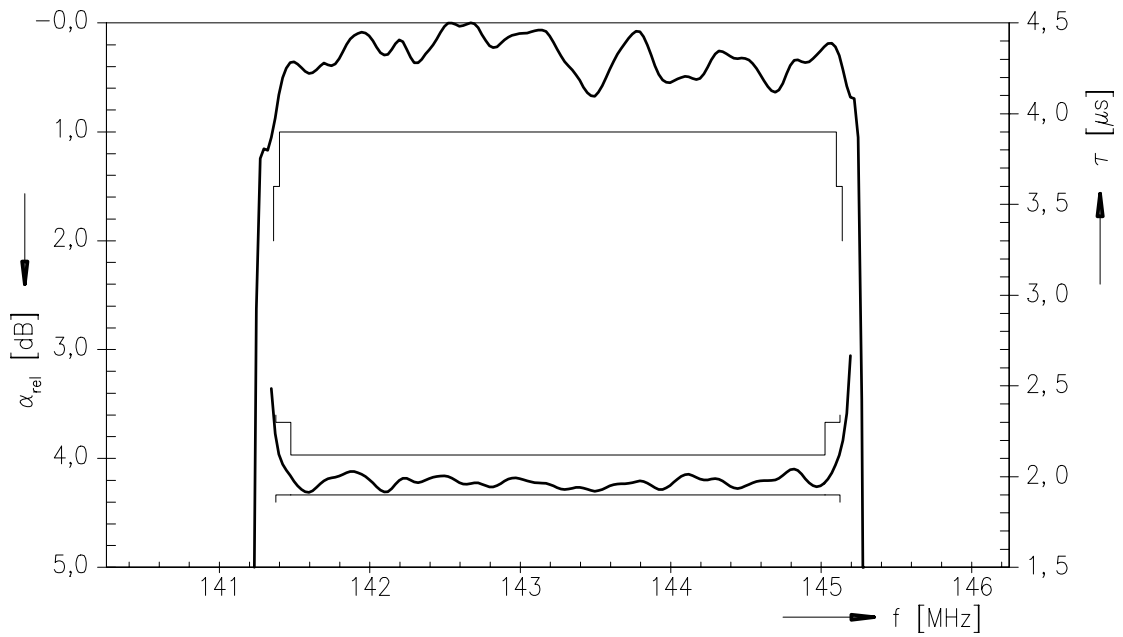


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Normalized frequency response



Normalized frequency response (pass band)





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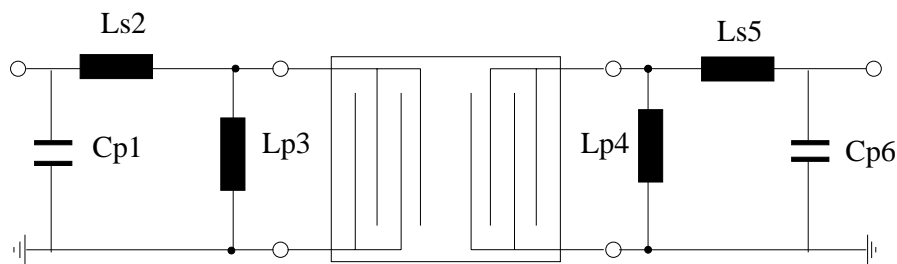
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Matching network to 50 Ω :

(element values depend on PCB layout)



$C_{p1} = 22 \text{ pF}$
 $L_{s2} = 82 \text{ nH}$

$L_{p3} = \text{not used}$
 $L_{p4} = 390 \text{ nH}$

$L_{s5} = 180 \text{ nH}$
 $C_{p6} = 22 \text{ pF}$

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