



SAW Components

Data Sheet B3850





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B3850

Low-Loss Filter

125,00 MHz

Data Sheet

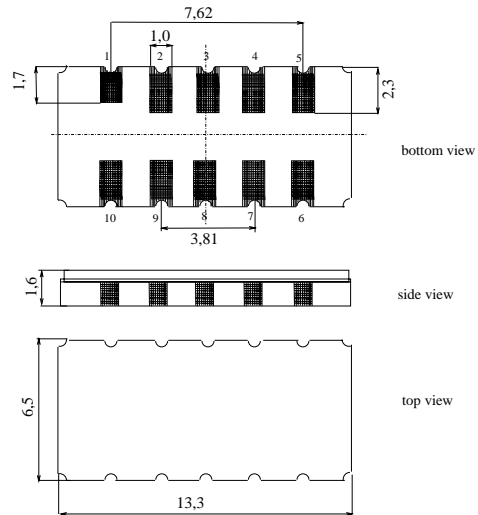
Ceramic package DCC12A

Features

- Low-loss IF filter for GSM EDGE base station
- Usable bandwidth 400 kHz
- Very low group delay ripple
- Temperature stable
- Ceramic SMD package

Terminals

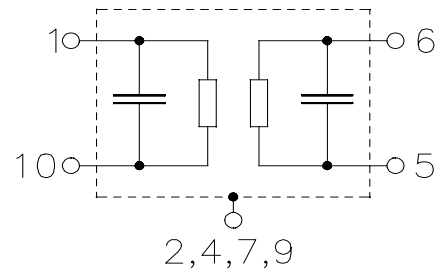
- Gold plated



Dimensions in mm, approx. weight 0,4 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B3850	B39121-B3850-H510	C61157-A7-A94	F61074-V8131-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	-40 / +85	°C
Storage temperature range	T_{stg}	-40 / +85	°C
DC voltage	V_{DC}	1,2	V
Source power	P_s	10	dBm


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Characteristics

Operating temperature range: $T = -10 \dots 85 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ and matching network
 Terminating load impedance: $Z_L = 50 \text{ } \Omega$ and matching network

		min.	typ.	max.		
Nominal frequency	f_N	—	125,0	—	MHz	
Minimum insertion attenuation	α_{\min}	—	6,2	7,0	dB	
Pass bandwidth	$\alpha_{\text{rel}} \leq 1,0 \text{ dB}$	$B_{1\text{dB}}$	400	560	—	kHz
	$\alpha_{\text{rel}} \leq 3,0 \text{ dB}$	$B_{3\text{dB}}$	—	840	—	kHz
Amplitude ripple (peak to adjacent valley)	$f_N \pm 200 \text{ kHz}$	—	0,1	—	dB	
Amplitude variation (p-p)	$f_N \pm 200 \text{ kHz}$	$\Delta\alpha$	—	0,6	1,0	dB
Absolute group delay	@ f_N	τ	0,7	1,1	1,7	μs
Group delay ripple (p-p)	$f_N \pm 200 \text{ kHz}$	$\Delta\tau$	—	70	120	ns
Relative attenuation (relative to α_{\min})		α_{rel}				
$f_N \pm 0,4 \text{ MHz}$... $f_N \pm 0,6 \text{ MHz}$		0	2	—	dB	
$f_N \pm 0,6 \text{ MHz}$... $f_N \pm 1,2 \text{ MHz}$		8	10	—	dB	
$f_N \pm 1,2 \text{ MHz}$... $f_N \pm 1,8 \text{ MHz}$		20	30	—	dB	
$f_N \pm 1,8 \text{ MHz}$... $f_N \pm 3,4 \text{ MHz}$		25	40	—	dB	
$f_N \pm 3,4 \text{ MHz}$... $f_N \pm 6,5 \text{ MHz}$		34	50	—	dB	
$f_N \pm 6,5 \text{ MHz}$... $f_N \pm 9,5 \text{ MHz}$		40	50	—	dB	
$f_N \pm 9,5 \text{ MHz}$... $f_N \pm 17,0 \text{ MHz}$		43	60	—	dB	
10,0 MHz ... $f_N - 17,0 \text{ MHz}$		55	60	—	dB	
$f_N + 17,0 \text{ MHz}$... 450,0 MHz ¹⁾		55	60	—	dB	
VSWR (Input and output in pass band)		—	2,0	2,3		



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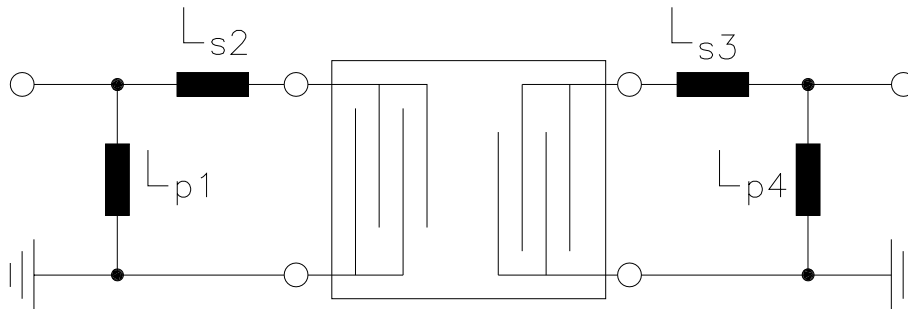
		min.	typ.	max.	
Temperature coefficient of frequency ²⁾	TC_f	—	- 0,036	—	ppm/K ²
Turnover temperature	T_0	—	50	—	°C

1) Narrowband responses (typ. 40 dB) at 202 MHz, 228 MHz, 250 MHz, and at 375 MHz

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

Matching network to 50 Ω

(Element values depend upon PCB layout)



$$L_{p1} = 33 \text{ nH}$$

$$L_{s2} = 68 \text{ nH}$$

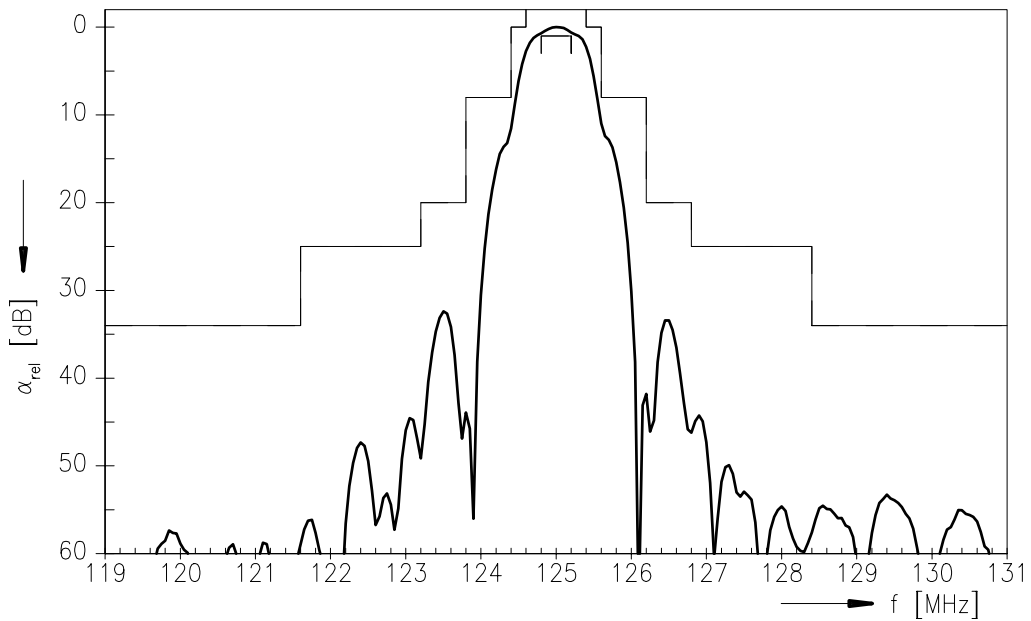
$$L_{s3} = 56 \text{ nH}$$

$$L_{p4} = 27 \text{ nH}$$

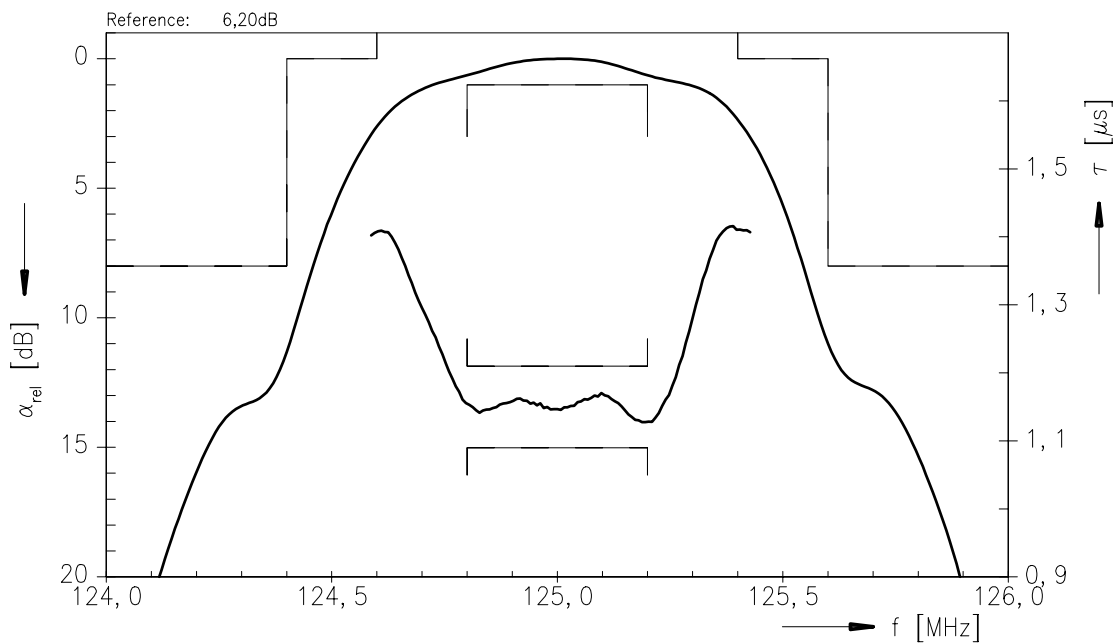


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Normalized frequency response



Normalized frequency response (pass band)





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