

RF Filters for Cellular Phones

Series/Type: B4121

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product		Deadline Last Orders	Last Shipments
B39941B4121U510	B39941B4124U410	2009-04-03	2009-07-15	2009-10-15

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.



B4121

Low-Loss Filter for Mobile Communication

942,50 MHz

Data Sheet



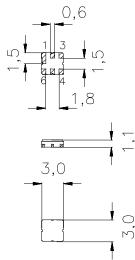
Ceramic package DCC6D

Features

- Low-loss RF filter for mobile telephone EGSM systems, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- \blacksquare Impedance transformation from 50 Ω to 150 Ω
- Ceramic package for Surface Mounted Technology (SMT)

Terminals

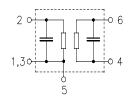
■ Ni, gold-plated



Dimensions in mm, approx. weight 0,037 g

Pin configuration

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



		Marking and Package according to	Packing according to		
B4121	B39941-B4121-U510	C61157-A7-A68	F61074-V8089-Z000		

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 40 / + 85	°C	
Storage temperature range	T_{stg}	- 40 / + 85	°C	
DC voltage	$V_{\rm DC}$	3	V	
Input power max.	P_{IN}			source impedance 50 Ω ,
880 915 MHz		18	dBm	load impedance 150 Ω ,
17051785 MHz		18	dBm	CW input for min. 2000 h



B4121

Low-Loss Filter for Mobile Communication

942,50 MHz

Data Sheet

Characteristics

 $T = 25 + -2 \,^{\circ}\text{C}$ $Z_{\text{S}} = 50 \,\Omega$ $Z_{\text{L}} = 150 \,\Omega \, \parallel 80 \,\text{nH}$ Operating temperature range: Terminating source impedance:

Terminating load impedance:

					min.	typ.	max.	
equency				$f_{\mathbb{C}}$	_	942,5	_	MHz
n insertion a	ttenuatio	on		α_{max}				
	925,0	960,0	MHz		_	2,8	3,2	dB
de ripple (p-p)			Δα				
	925,0	960,0	MHz		_	1,0	1,4	dB
ion				α				
	0,0	600,0	MHz		60	70	_	dB
	600,0	880,0	MHz		50	55	_	dB
	880,0	905,0	MHz		30	38	_	dB
	905,0	915,0	MHz		18	23	_	dB
	980,0	1000,0	MHz		21	23	_	dB
	1000,0	1025,0	MHz		30	37	_	dB
	1025,0	1050,0	MHz		35	40	_	dB
	1050,0	1500,0	MHz		50	57	_	dB
	1500,0	2130,0	MHz		45	55	_	dB
	2130,0	3000,0	MHz		40	48	_	dB
	3000,0	4050,0	MHz		35	41	_	dB
	4050,0	5700,0	MHz		23	30	_	dB
ry in band								
ed to the mate	ched ope	erating cond	lition)					
S ₃₁ / S ₂₁	925,0	960,0	MHz		-1,8	0	1,2	dB
arg(S ₃₁ /S ₂₁)	925,0	960,0	MHz		170	180	192	o
i	in insertion a le ripple (p-p ion $ S_{31} / S_{21} $	n insertion attenuation $925,0$ le ripple (p-p) $925,0$ ion $0,0$ $600,0$ $880,0$ $905,0$ $980,0$ $10025,0$ $1050,0$ $1500,0$ $2130,0$ $3000,0$ $4050,0$ ry in band ed to the matched operation $925,0$	n insertion attenuation 925,0 960,0 le ripple (p-p) 925,0 960,0 ion 0,0 600,0 600,0 880,0 880,0 905,0 905,0 915,0 980,01000,0 1000,01025,0 1025,01050,0 1050,01500,0 1500,02130,0 2130,03000,0 3000,04050,0 4050,05700,0 ry in band ed to the matched operating concerns	n insertion attenuation 925,0 960,0 MHz le ripple (p-p) 925,0 960,0 MHz ion 0,0 600,0 MHz 600,0 880,0 MHz 880,0 905,0 MHz 905,0 915,0 MHz 905,0 1000,0 MHz 1000,0 1000,0 MHz 1005,0 1050,0 MHz 1050,0 1500,0 MHz 1050,0 1500,0 MHz 2130,0 3000,0 MHz 2130,0 3000,0 MHz 3000,0 4050,0 MHz 4050,0 5700,0 MHz ry in band ed to the matched operating condition)	n insertion attenuation 925,0 960,0 MHz le ripple (p-p) $\Delta \alpha$ 925,0 960,0 MHz ion α 0,0 600,0 MHz 600,0 880,0 MHz 880,0 905,0 MHz 905,0 915,0 MHz 905,0 915,0 MHz 980,0 1000,0 MHz 1000,0 1025,0 MHz 1025,0 1050,0 MHz 1050,0 1500,0 MHz 1500,0 2130,0 MHz 2130,0 3000,0 MHz 2130,0 3000,0 MHz 3000,0 4050,0 MHz 4050,0 5700,0 MHz ry in band ed to the matched operating condition)	requency $f_{\rm C}$ — in insertion attenuation 925,0 960,0 MHz — Me ripple (p-p) $\Delta\alpha$ 925,0 960,0 MHz — α 60 α 925,0 960,0 MHz α 60 α 600,0 880,0 MHz α 60 α 880,0 905,0 MHz α 905,0 915,0 MHz α 980,0 1000,0 MHz α 18 α 980,0 1000,0 MHz α 18 α 1025,0 1050,0 MHz α 30 α 1025,0 1050,0 MHz α 35 α 1050,0 1500,0 MHz α 35 α 1050,0 1500,0 MHz α 35 α 1050,0 2130,0 MHz α 45 α 1050,0 2130,0 MHz α 1500,0 2130,0 MHz α 1500,0 2130,0 MHz α 1500,0 2130,0 MHz α 23 α 1050,0 2130,0 MHz α 23 α 1050,0 2130,0 MHz α 35 α 1050,0 2130,0 MHz α 35 α 1050,0 2130,0 MHz α 25 α 1500,0 2130,0 MHz α 26 α 27 α 1500,0 MHz α 27 α 1500,0 MHz α 28 α 1500,0 2130,0 MHz α 29 α 30 α	requency $f_{\rm C}$ — 942,5 m insertion attenuation 925,0 960,0 MHz — 2,8 de ripple (p-p) $\Delta\alpha$ — 1,0 sion α — 1,0 sion α — 1,0 sion α — 1,0 α — 1,0 sion α — 1,0	requency $f_{\mathbb{C}}$ — 942,5 — 942,5 — n insertion attenuation 925,0 960,0 MHz — 2,8 3,2 de ripple (p-p) $\Delta \alpha$ 925,0 960,0 MHz — 1,0 1,4 dion α — 0,0 600,0 MHz 600,0 880,0 MHz 50 55 — 880,0 905,0 MHz 30 38 — 905,0 915,0 MHz 30 38 — 905,0 915,0 MHz 18 23 — 980,0 1000,0 MHz 21 23 — 1000,0 1025,0 MHz 30 37 — 1025,0 1050,0 MHz 35 40 — 1050,0 1500,0 MHz 35 40 — 1500,0 2130,0 MHz 45 55 — 2130,0 3000,0 MHz 45 55 — 2130,0 3000,0 MHz 40 48 — 3000,0 4050,0 MHz 35 41 — 4050,0 5700,0 MHz 23 30 30 — ry in band end to the matched operating condition) $ S_{31} / S_{21} $ 925,0 960,0 MHz -1,8 0 1,2



B4121

Low-Loss Filter for Mobile Communication

942,50 MHz

Data Sheet

Characteristics

Operating temperature range:

Terminating source impedance:

T = -10 to +75 °C $Z_{\text{S}} = 50 \Omega$ $Z_{\text{L}} = 150 \Omega \parallel 80 \text{ nH}$ Terminating load impedance:

					min.	typ.	max.	
Center frequency				f _C	_	942,5	_	MHz
Maximum insertion attenuation				α_{max}				
	925,0	960,0	MHz		_	3,0	3,8	dB
Amplitude ripple (p-p)				Δα				
	925,0	960,0	MHz		_	1,2	2,0	dB
Attenuation				α				
	0,0	600,0	MHz		60	70	_	dB
	600,0	880,0	MHz		50	55	_	dB
	880,0	905,0	MHz		28	33	_	dB
	905,0	915,0	MHz		18	21	_	dB
	980,0	1000,0	MHz		20	22		dB
•	1000,0	1025,0	MHz		30	37	_	dB
•	1025,0	1050,0	MHz		35	40		dB
•	1050,0	1500,0	MHz		50	57	_	dB
•	1500,0	2130,0	MHz		45	55	_	dB
2	2130,0	3000,0	MHz		40	48		dB
3	3000,0	4050,0	MHz		35	41	_	dB
2	4050,0	5700,0	MHz		23	30	_	dB
Symmetry in band								
(referenced to the match	hed ope	erating cond	lition)					
S ₃₁ / S ₂₁	925,0	960,0	MHz		-2,3	0	1,2	dB
arg(S ₃₁ /S ₂₁)	925,0	960,0	MHz		170	180	192	0



B4121

Low-Loss Filter for Mobile Communication

942,50 MHz

Data Sheet

Characteristics

 $T = -40 \text{ to } +85 \text{ }^{\circ}\text{C}$ Operating temperature range:

Terminating source impedance:

 $Z_{\rm S} = 50 \,\Omega$ $Z_{\rm L} = 150 \,\Omega$ || 80 nH Terminating load impedance:

		min.	typ.	max.	
Center frequency	$f_{\mathbb{C}}$	_	942,5	_	MHz
Maximum insertion attenuation					
925,0 960,0	MHz	· —	3,4	4,2	dB
Amplitude ripple (p-p)	$\Delta \alpha$				
925,0 960,0	MHz	_	1,8	2,6	dB
Attenuation	α				
0,0 600,0	MHz	60	70	_	dB
600,0 880,0	MHz	50	55	_	dB
880,0 905,0	MHz	28	33	_	dB
905,0 915,0	MHz	18	21	_	dB
980,01000,0	MHz	19	21	_	dB
1000,01025,0	MHz	30	37	_	dB
1025,01050,0	MHz	35	40	_	dB
1050,01500,0	MHz	50	57	_	dB
1500,02130,0	MHz	45	55	_	dB
2130,03000,0	MHz	40	48	_	dB
3000,04050,0	MHz	35	41	_	dB
4050,05700,0	MHz	23	30	_	dB
Symmetry in band					
(referenced to the matched operating condi	ition)				
S ₃₁ / S ₂₁ 925,0 960,0	MHz	-2,6	0	1,2	dB
arg(S ₃₁ /S ₂₁) 925,0 960,0	MHz	170	180	192	o



SAW Components

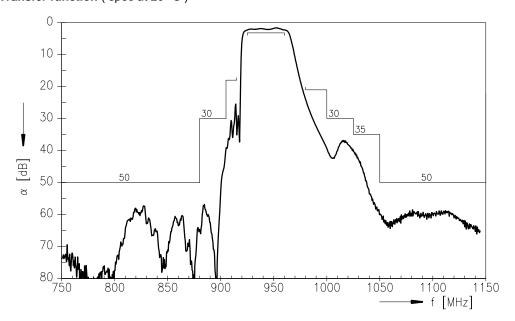
Low-Loss Filter for Mobile Communication

Data Sheet

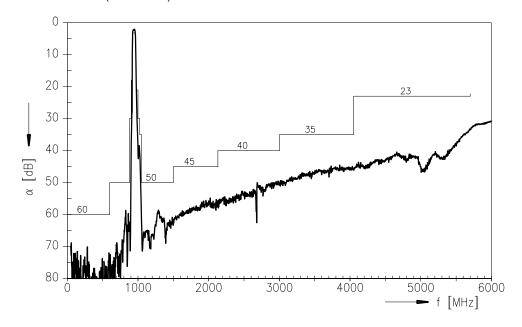
B4121

942,50 MHz

Transfer function (spec at 25 °C)



Transfer function (wideband)





Low-Loss Filter for Mobile Communication

942,50 MHz

Data Sheet



Published by EPCOS AG Surface Acoustic Wave Components Division, SAW MC WT P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2002. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.