

# SAW filters for mobile communications

#### Series/Type: B4219

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39202B4219U810		2009-07-31	2009-11-30	2010-02-28

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.

## 公TDK

F61074-V8101-Z0000

SAW Comp	ananta		B4219
-	Dual Band Filter for Mobil	o Communication	881,5 & 1960,0 MHz
			001,5 & 1900,0 WIHZ
Preliminary I	Data Sheet	SMD	
			Ceramic package QCC8D
Features			
	-in-1 RF filter for mobile tele		0,75
	PCS CDMA systems, received	/e path	
	h two integrated Rx-filters	41.1-	
•	ssband of PCS Rx filter: 60 N ssband of AMPS Rx-filter: 25		
	ng network required for operative		1 7
at 50 Ω			1.2
Package for a second	or Surface Mounted Technol	ogy	1,5
(SMT)			
			3,0 <sup>†</sup>
Terminals			
Ni, gold-pla	ated		
		Dimensions in m	im, approx. weight 0,037 g
Pin configur	ation		
1	Input PCS filter		
7	Output PCS filter		
3	Input AMPS filter		2.40 6.8
5	Output AMPS filter		
2,4,6,8	Case-ground, to be grou	nded	
	1	Γ	30
Туре	Ordering code	Marking and Package	Packing
		according to	according to

Electrostatic Sensitive Device (ESD)

B39202-B4219-U810

#### **Maximum ratings**

B4219

Operable temperature range	T	- 30 /+ 85	°C	
Storage temperature range	T <sub>stg</sub>	– 40 /+ 85	°C	
DC voltage	V <sub>DC</sub>	3	V	
Input power max. 824849 MHz	P <sub>IN</sub>	13	dBm	source and load impedance 50 $\Omega$ continuous wave
18501910 MHz		13	dBm	continuous wave

C61157-A7-A72

SAW Components						B4219
Low-Loss Dual Ba	and Filter for Mobile Co	ommunica	ation	881,	5 & 1960,	0 MHz
Preliminary Data Sh	neet 🔚	MD				
Characteristics of P	CS Rx filter					
Operating temperatur Terminating source in Terminating load imp	npedance: Z	r = -30  to $r_{S} = 50 \Omega$ $r_{L} = 50 \Omega$	) +85 °C			
			min.	typ.	max.	
Center frequency		f <sub>c</sub>		1960,0		MHz
Maximum insertion	attenuation 1930,01990,0MHz	$\alpha_{max}$	_	3,7	4,3	dB
Amplitude ripple (p-	p) 1930,01990,0MHz	Δα	_	1,9	2,5	dB
Input return loss	1930,01990,0 MHz		10,0	11,5	_	dB
Output return loss	1930,01990,0 MHz		10,0	11,5	_	dB
Attenuation	30,01850,0 MHz	α	20,0	22,0	_	dB
	2110,02400,0 MHz		20,0	31,0	—	dB
Tx band suppressio	<b>n</b> 1850,01910,0 MHz		13,0	20,0		dB

SAW ComponentsB4219Low-Loss Dual Band Filter for Mobile Communication881,5 & 1960,0 MHz						
Preliminary Data Sheet				001,3	J & 1900,	
Treaminary Data Oneet						
Characteristics of PCS Rx filter						
Operating temperature range:			o +70 °C			
Terminating source impedance: Terminating load impedance:	Z <sub>S</sub> =	= 50 Ω = 50 Ω				
reminating load impedance.	2L -	= 50 12				
			min.	typ.	max.	
Center frequency		f <sub>c</sub>	—	1960,0	—	MHz
Maximum insertion attenuation 1930,0 1990,		$\alpha_{max}$		3,7	4,2	dB
1930,0 1990,			_	3,7	4,2	UD
Amplitude ripple (p-p)		Δα				
1930,01990,	,0MHz		—	1,9	2,4	dB
Input return loss			10.0	10.0		dD
1930,01990,			10,0	12,0		dB
Output return loss						
1930,01990,	,0 MHz		10,0	12,0		dB
Attenuation		α	00.0	00.0		
30,01850, 2110,02400,			20,0	22,0	_	dB
2110,02400,			20,0	31,0		dB
Tx band suppression						
1850,01910,	,0 MHz		15,0	20,0		dB

SAW Components					B4219
Low-Loss Dual Band Filter for Mobile C	ommunio	cation	881	,5 & 1960	,0 MHz
Preliminary Data Sheet	MD				
Characteristics of PCS Rx filter					
eperanig temperature ranger	= 25 ±				
	$S = 50 \Omega$				
Terminating load impedance: Z	L = 50 Ω				
		min.	typ.	max.	
Center frequency	f <sub>c</sub>	_	1960,0	—	MHz
Maximum insertion attenuation	$\alpha_{max}$				
1930,01990,0MHz		—	3,4	3,7	dB
Amplitude ripple (p-p)	Δα		1.6	10	dB
1930,01990,0MHz			1,6	1,9	uБ
Input return loss					
1930,01990,0 MHz		10,0	12,5	_	dB
		- , -	, -		
Output return loss					
1930,01990,0 MHz		10,0	12,5	—	dB
Attenuation	α				
30,01850,0 MHz		20,0	22,0	-	dB
2110,02400,0 MHz		20,0	31,0		dB
Ty hand suppression					
Tx band suppression 1850,01910,0 MHz		20,0	22,0		dB
1000,0 1910,0 MITZ		20,0	22,0		uD

SAW Components	B4219
Low-Loss Dual Band Filter for Mobile Communication	881,5 & 1960,0 MHz

Preliminary Data Sheet

SMD

Transfer function of the PCS filter (narrow band measurement)



Transfer function of the PCS filter (wide band measurement)



SAW Components		B4219
Low-Loss Dual Band Filter for	Mobile Communication	881,5 & 1960,0 MHz
Preliminary Data Sheet		

#### Reflection coefficients of the PCS filter (measurement)



SAW Components	SAW Components					B4219
Low-Loss Dual Bar	nd Filter for Mobile	Communic	ation	881	5 & 1960	,0 MHz
Preliminary Data She	eet a	SMD				
Characteristics of AM	PS Rx filter					
Operating temperature Terminating source imp Terminating load imped	edance:	$T = -30 \text{ to}$ $Z_{\text{S}} = 50 \Omega$ $Z_{\text{L}} = 50 \Omega$				
			min.	typ.	max.	
Center frequency		f <sub>c</sub>		881,5	—	MHz
Maximum insertion at	<b>tenuation</b> 869,0894,0MHz	$lpha_{max}$	_	2,5	3,0	dB
Amplitude ripple (p-p)	869,0894,0MHz	Δα	_	0,9	1,4	dB
Input return loss	869,0894,0 MHz		10,0	12,0	_	dB
Output return loss	869,0894,0 MHz		10,0	13,0	_	dB
	30,0824,0MHz 1050,01080,0MHz 1080,02300,0MHz 2300,02600,0MHz	α	35,0 38,0 30,0 25,0	42,0 42,0 31,5 30,0	  	dB dB dB dB
Tx band suppression	824,0849,0MHz		35,0	40,0	_	dB

 $^{\ast}$  all values also fulfill the temperature range -30 to +85  $^{\circ}\text{C}$ 

SAW Components					B4219
Low-Loss Dual Band Filter for Mobile (	Communic	cation	881,	,5 & 1960	,0 MHz
Preliminary Data Sheet					
Characteristics of AMPS Rx filter					
Terminating source impedance:	$T = 25 \pm Z_{\rm S} = 50 \ \Omega Z_{\rm L} = 50 \ \Omega$				
		min.	typ.	max.	
Center frequency	f <sub>c</sub>		881,5		MHz
Maximum insertion attenuation 869,0894,0MHz	$lpha_{max}$	_	2,4	2,6	dB
Amplitude ripple (p-p) 869,0894,0MHz	Δα	_	0,6	1,1	dB
Input return loss 869,0894,0 MHz		10,0	12,5	_	dB
Output return loss 869,0894,0 MHz		10,0	13,5	_	dB
Attenuation	α	05.0	40.0		
30,0824,0MHz		35,0	42,0 42.0	—	dB dB
1050,01080,0MHz 1080,02300,0MHz		38,0 30,0	42,0 31,5		dB dB
2300,02600,0MHz		30,0 25,0	30,0	_	dB
Tx band suppression					
824,0849,0MHz		35,0	40,0	—	dB

SAW Components		B4219
Low-Loss Dual Band Filter for	or Mobile Communication	881,5 & 1960,0 MHz
Preliminary Data Sheet	SMD	

Transfer function of the AMPS filter (narrow band measurement)



Transfer function of the AMPS filter (wide band measurement)





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SAW Components

Low-Loss Dual Band Filter for Mobile Communication

B4219 881,5 & 1960,0 MHz

SMD

**Preliminary Data Sheet** 

#### Published by EPCOS AG Surface Acoustic Wave Components Division, SAW MC WT P.O. Box 80 17 09, D-81617 München

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