EPCOS

SAW Components

Data Sheet B4235

EPCOS

SAW Components	**B4235**
Low-Loss Dual Band Filter for Mobile Communication	**942,5/1842,5 MHz**

Data Sheet

Ceramic package **QCC10G**

bottom view

side view

top view

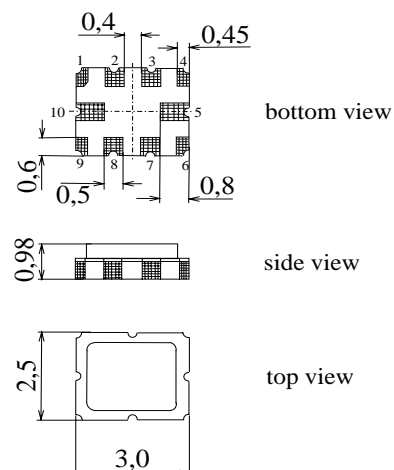Dimensions in mm, approx. weight **27 mg**

Features

- Low-loss RF filter for mobile telephone GSM 900/1800 system , receive path
- Usable passband:
  Filter 1 (GSM900):   35 MHz
  Filter 2 (GSM1800):   75 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 150 Ω for both filters
- Suitable for GPRS class 1 to 12
- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)
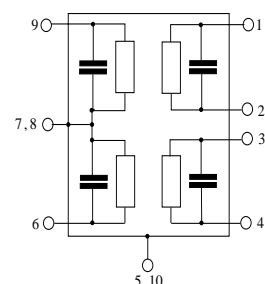- RoHS compliant

Terminals

- Ni, gold-plated

Pin configuration

1, 2	Output, balanced [Filter 1]
3, 4	Output, balanced [Filter 2]
6	Input [Filter 2]
7,8	Case ground
9	Input [Filter 1]
5, 10	Case ground

Type	Ordering code	Marking and Package according to	Packing according to
B4235	B39182-B4235-H910	C61157-A7-A142	F61074-V8174-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	− 40 / + 85	˚C	
Storage temperature range	T_{stg}	− 40 / +85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD} *	50	V	Machine Model, 10 pulses
Input power at Tx bands:				
GSM850, GSM900 GSM1800, GSM1900	P_{IN}	15	dBm	peak power of GSM signal, duty cycle 4:8

* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses

Characteristics Filter 1 (GSM900)

Operating temperature range: T = +25 ± 2 ˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced) || 68 nH

		min.	typ.	max.	
Center frequency	f_c	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	1,8	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,6	1,2	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,9	2,1	
Output VSWR					
925,0 ... 960,0 MHz		—	1,9	2,1	
Output amplitude balance ($|S_{31}/S_{21}|$)					
925,0 ... 960,0 MHz		-2,0	—	2,0	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180˚$)					
925,0 ... 960,0 MHz		-10,0	—	10,0	degree
Absolute attenuation	α_{abs}				
10,0 ... 480,0 MHz		45,0	53,0	—	dB
480,0 ... 880,0 MHz		30,0	38,0	—	dB
880,0 ... 905,0 MHz		24,0	27,0	—	dB
905,0 ... 915,0 MHz		20,0	25,0	—	dB
980,0 ...1050,0 MHz		23,0	30,0	—	dB
1050,0 ...3500,0 MHz		30,0	34,0	—	dB
3500,0 ...4500,0 MHz		22,0	26,0	—	dB
4500,0 ...6000,0 MHz		15,0	17,0	—	dB

Characteristics Filter 1 (GSM900)

Operating temperature range: T = -20 to +75˚ C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced) || 68 nH

			min.	typ.	max.	
Center frequency		f_c	—	942,5	—	MHz
Maximum insertion attenuation		α_{max}				
	925,0 ... 960,0 MHz		—	1,8	2,5	dB
Amplitude ripple (p-p)		$\Delta\alpha$				
	925,0 ... 960,0 MHz		—	0,9	1,5	dB
Input VSWR						
	925,0 ... 960,0 MHz		—	1,9	2,1	
Output VSWR						
	925,0 ... 960,0 MHz		—	1,9	2,1	
Output amplitude balance ($|S_{31}/S_{21}|$)						
	925,0 ... 960,0 MHz		-2,5	—	2,5	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180˚$)						
	925,0 ... 960,0 MHz		-12,0	—	12,0	degree
Absolute attenuation		α_{abs}				
	10,0 ... 480,0 MHz		45,0	50,0	—	dB
	480,0 ... 880,0 MHz		30,0	38,0	—	dB
	880,0 ... 905,0 MHz		24,0	27,0	—	dB
	905,0 ... 915,0 MHz		11,0	18,0	—	dB
	980,0 ...1050,0 MHz		23,0	30,0	—	dB
	1050,0 ...3500,0 MHz		30,0	34,0	—	dB
	3500,0 ...4500,0 MHz		22,0	26,0	—	dB
	4500,0 ...6000,0 MHz		15,0	17,0	—	dB

Transfer function of filter 1 (Narrow Band)
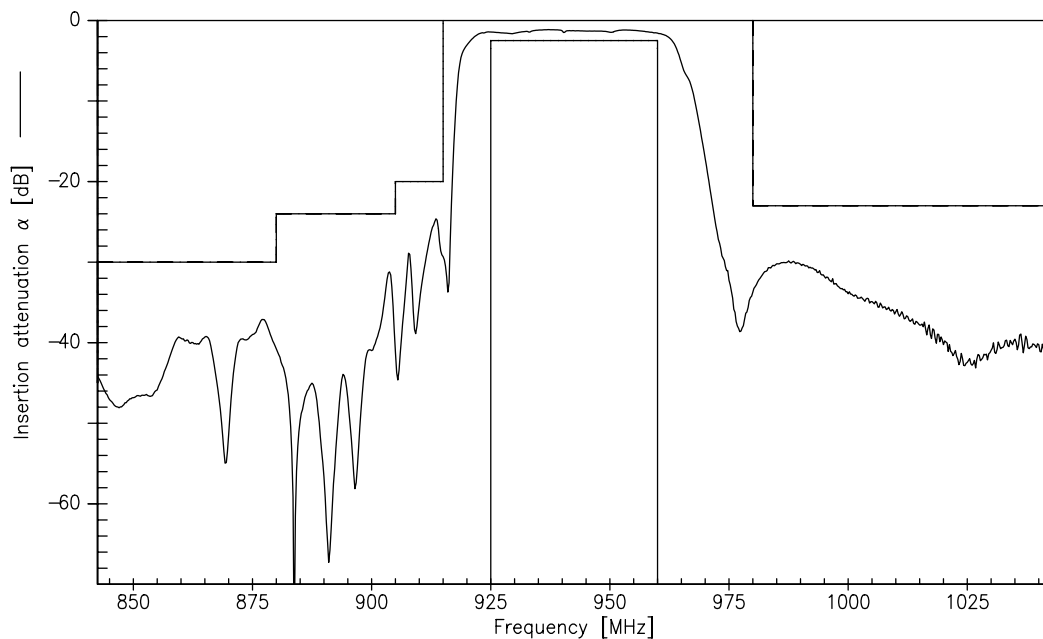
Transfer function of filter 1 (Wide Band)

![EPCOS logo]

SAW Components	**B4235**
Low-Loss Dual Band Filter for Mobile Communication	**942,5/1842,5 MHz**

Data Sheet   SMD

Characteristics Filter 2 (GSM1800)

Operating temperature range: T = +25 ± 2 ˚C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced) || 12.0 nH

		min.	**typ.**	**max.**	
Center frequency	f_c	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ...1880,0 MHz		—	2,4	2,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ...1880,0 MHz		—	1,2	1,5	dB
Input VSWR					
1805,0 ...1880,0 MHz		—	2,4	2,6	
Output VSWR					
1805,0 ...1880,0 MHz		—	2,2	2,4	
Output amplitude balance ($|S_{31}/S_{21}|$)					
1805,0 ...1880,0 MHz		-1,5	—	1,5	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180˚$)					
1805,0 ...1880,0 MHz		-10,0	—	10,0	degree
Absolute attenuation	α_{abs}				
10,0 ...1000,0 MHz		40,0	50,0	—	dB
1000,0 ...1705,0 MHz		26,0	28,0	—	dB
1705,0 ...1785,0 MHz		13,0	17,0	—	dB
1920,0 ...1980,0 MHz		15,0	24,0	—	dB
1980,0 ...2030,0 MHz		24,0	28,0	—	dB
2030,0 ...5000,0 MHz		30,0	34,0	—	dB
5000,0 ...6000,0 MHz		25,0	30,0	—	dB

Characteristics Filter 2 (GSM1800)

Operating temperature range: T = -20 to +75˚C
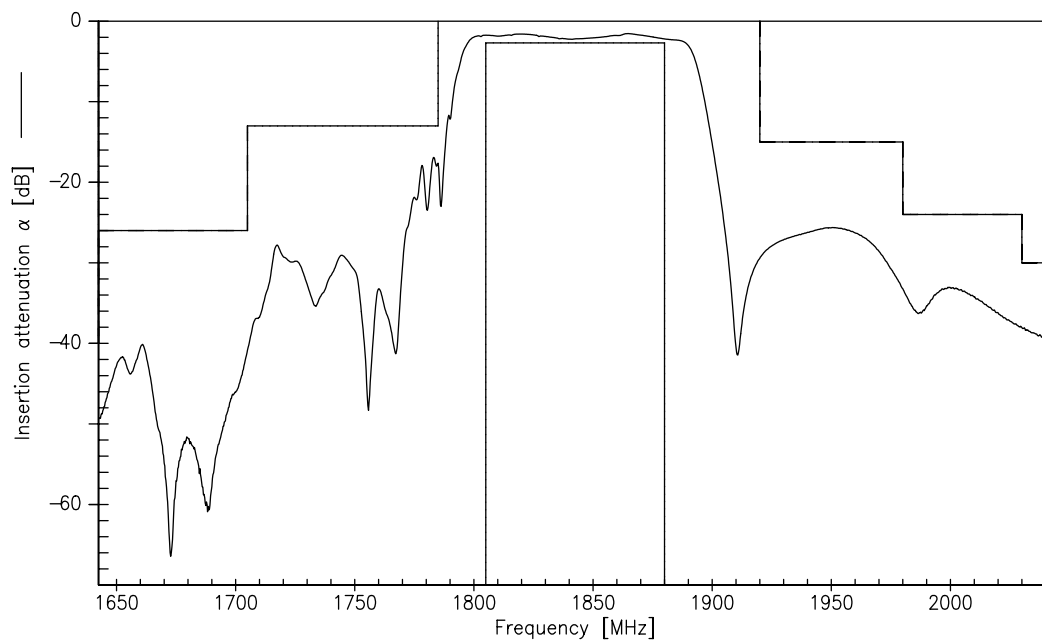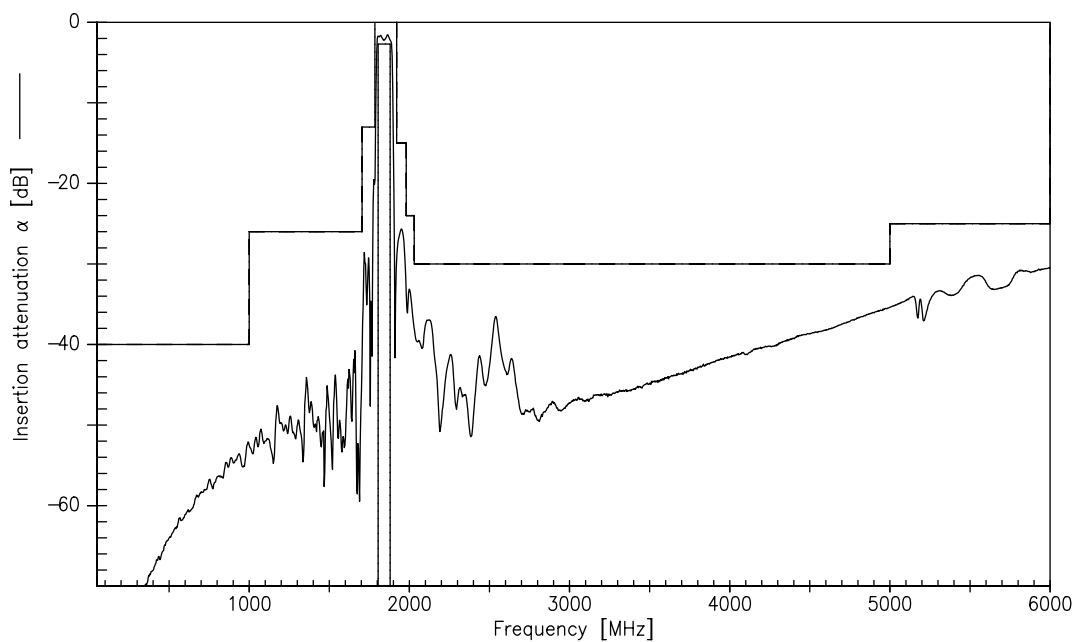Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced) || 12.0 nH

		min.	**typ.**	**max.**	
Center frequency	f_c	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ...1880,0 MHz		—	2,4	2,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ...1880,0 MHz		—	1,5	1,8	dB
Input VSWR					
1805,0 ...1880,0 MHz		—	2,4	2,6	
Output VSWR					
1805,0 ...1880,0 MHz		—	2,2	2,4	
Output amplitude balance ($|S_{31}/S_{21}|$)					
1805,0 ...1880,0 MHz		-1,5	—	1,5	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180˚$)					
1805,0 ...1880,0 MHz		-10,0	—	10,0	degree
Absolute attenuation	α_{abs}				
10,0 ...1000,0 MHz		40,0	50,0	—	dB
1000,0 ...1705,0 MHz		26,0	28,0	—	dB
1705,0 ...1785,0 MHz		10,0	17,0	—	dB
1920,0 ...1980,0 MHz		15,0	24,0	—	dB
1980,0 ...2030,0 MHz		24,0	28,0	—	dB
2030,0 ...5000,0 MHz		30,0	34,0	—	dB
5000,0 ...6000,0 MHz		25,0	30,0	—	dB

Transfer function of filter 2 (Narrow Band)

Transfer function of filter 2 (Wide Band)

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.