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SAW Components

Data Sheet B7652

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

Data Sheet   SMD

Chip sized saw package **QCS10C**

Features

- Low-loss RF filter for mobile telephone EGSM and PCN system , receive path
- Usable passband:
  Filter 1 (EGSM):   35 MHz
  Filter 2 (PCN):   75 MHz
- Unbalanced to balanced operation of both filters
- Impedance transformation from 50 Ω to 200 Ω for EGSM filter
- Suitable for GPRS Class 1 to 12
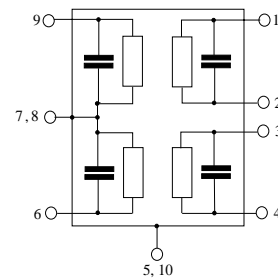- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)

bottom view

side view

top view

Dimensions in mm, approx. weight 0,015g
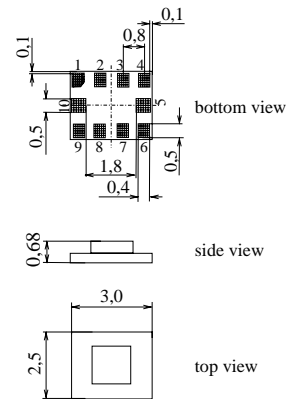
Terminals

- Ni, gold-plated

Pin configuration

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

Type	Ordering code	Marking and Package according to	Packing according to
B7652	B39182-B7652-G210	C61157-A7-A129	F61074-V8156-Z000

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

Maximum ratings

Operable temperature range	T	– 20 / + 70	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50	V	
Input power at GSM850, GSM900, GSM1800, GSM1900 Tx bands:				
Filter 1 (EGSM-Rx)	P_{IN}	15	dBm	peak power of GSM signal,
Filter 2 (PCN-Rx)	P_{IN}	12	dBm	duty cycle 4:8

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Low-Loss Dual Band Filter for Mobile Communication	**942,5 / 1842,5 MHz**
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Characteristics Filter 1 (EGSM)

Operating temperature range: T = $25 \pm 2˚C$
Terminating source impedance: Z_S = $50\ \Omega$
Terminating load impedance: Z_L = $200\ \Omega \parallel 68nH$

				min.	typ.	max.	
Center frequency			f_c	—	942,50	—	MHz
Maximum insertion attenuation			α_{max}				
	925,0 ... 960,0	MHz		—	2,3	2,8	dB
Amplitude ripple (p-p)			$\Delta\alpha$				
	925,0 ... 960,0	MHz		—	1,1	1,6	dB
Input return loss							
	925,0 ... 960,0	MHz		8,0	10,0	—	dB
Output return loss							
	925,0 ... 960,0	MHz		8,0	12,0	—	dB
Output phase balance $(\phi(S_{31})-\phi(S_{21})+180˚)$							
	925,0 ... 960,0	MHz		-10,0	0	10,0	degree
Output amplitude balance $(|S_{31}/S_{21}|)$							
	925,0 ... 960,0	MHz		-1,0	0	1,0	dB
Attenuation			α_{min}				
	10,0 ... 880,0	MHz		45,0	49,0	—	dB
	880,0 ... 905,0	MHz		32,0	37,0	—	dB
	905,0 ... 915,0	MHz		20,0	28,0	—	dB
	980,0 ...1050,0	MHz		24,0	26,0	—	dB
	1050,0 ...1920,0	MHz		40,0	44,0	—	dB
	1920,0 ...3840,0	MHz		38,0	43,0	—	dB
	3840,0 ...6000,0	MHz		30,0	35,0	—	dB

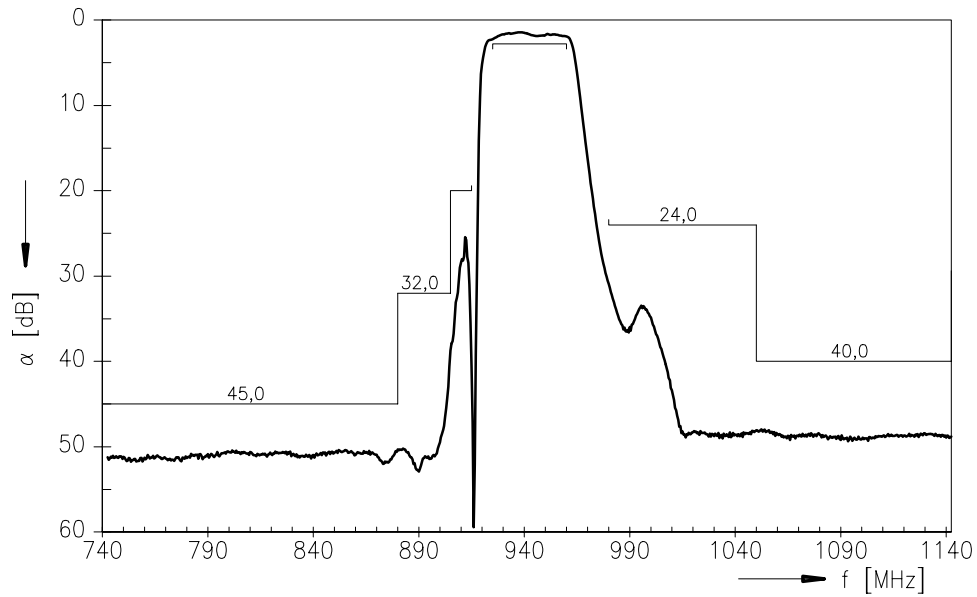| SAW Components	B7652
Low-Loss Dual Band Filter for Mobile Communication	**942,5 / 1842,5 MHz**

Data Sheet

SMD

Characteristics Filter 1 (EGSM)

Operating temperature range: T = -20 to +70°C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω ‖ 68nH

			min.	typ.	max.	
Center frequency		f_c	—	942,50	—	MHz
Maximum insertion attenuation		α_{max}				
	925,0 ... 960,0	MHz	—	2,6	3,3	dB
Amplitude ripple (p-p)		$\Delta\alpha$				
	925,0 ... 960,0	MHz	—	1,3	2,0	dB
Input return loss						
	925,0 ... 960,0	MHz	8,0	9,5	—	
Output return loss						
	925,0 ... 960,0	MHz	8,0	11,0	—	
Output phase balance $(\phi(S_{31})-\phi(S_{21})+180°)$						
	925,0 ... 960,0	MHz	-10,0	0	10,0	degree
Output amplitude balance $(|S_{31}/S_{21}|)$						
	925,0 ... 960,0	MHz	-1,0	0	1,0	dB
Attenuation		α_{min}				
	10,0 ... 880,0	MHz	45,0	49,0	—	dB
	880,0 ... 905,0	MHz	30,0	35,0	—	dB
	905,0 ... 915,0	MHz	18,0	25,0	—	dB
	980,0 ...1050,0	MHz	23,0	25,0	—	dB
	1050,0 ...1920,0	MHz	40,0	44,0	—	dB
	1920,0 ...3840,0	MHz	38,0	43,0	—	dB
	3840,0 ...6000,0	MHz	30,0	35,0	—	dB

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Transfer function Filter 1 (EGSM)

Transfer function Filter 1 (EGSM) - wideband
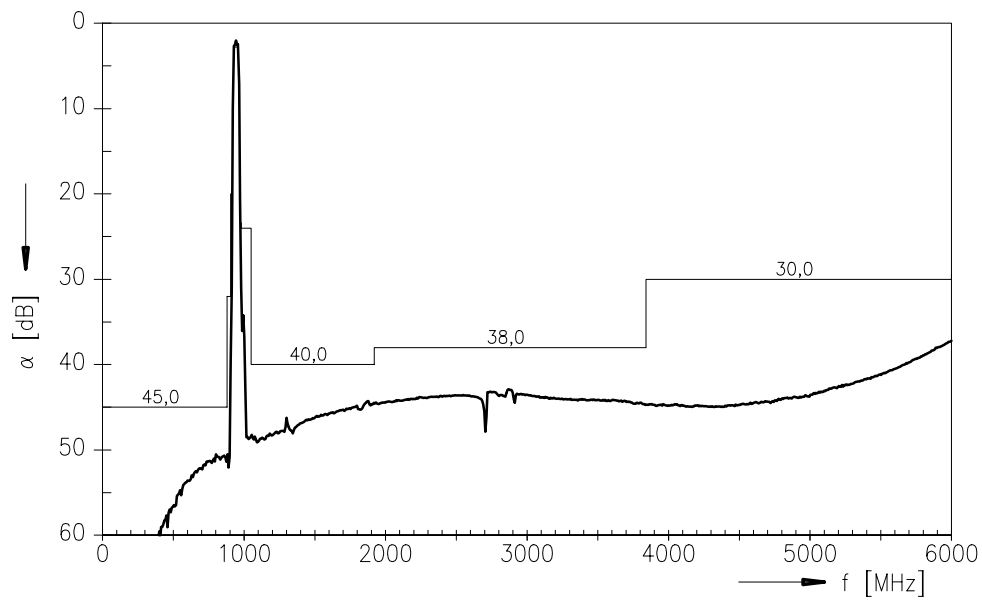
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| **Low-Loss Dual Band Filter for Mobile Communication** | **942,5 / 1842,5 MHz** |

Data Sheet

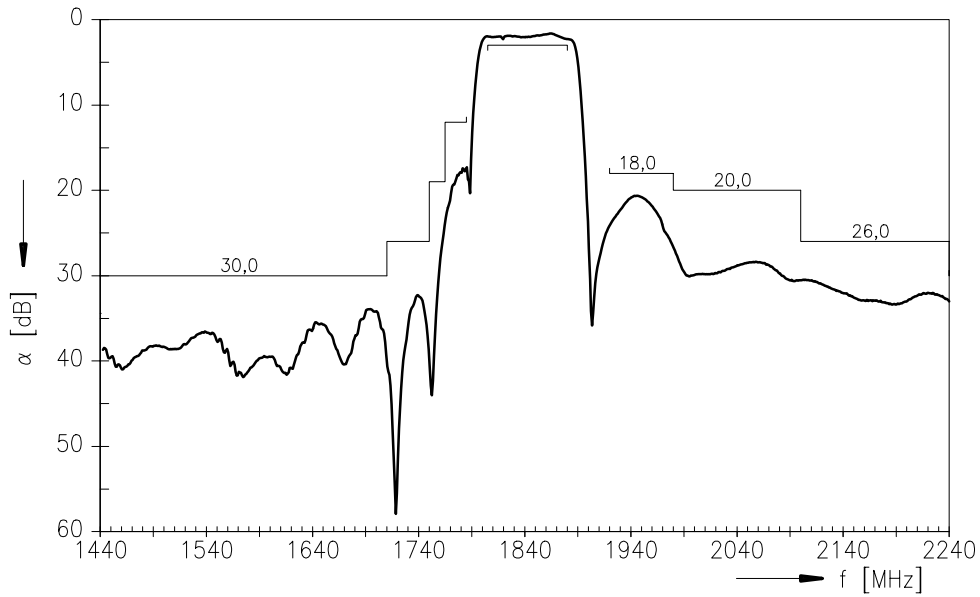### Characteristics Filter 2 (PCN)

Operating temperature range: $T = 25 \pm 2 °C$
Terminating source impedance: $Z_S = 50 \, \Omega$
Terminating load impedance: $Z_L = 50 \, \Omega \, || \, 18nH$

		min.	typ.	max.	
Center frequency	f_c	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ...1880,0 MHz		—	2,3	3,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ...1880,0 MHz		—	0,7	1,4	dB
Input return loss					
1805,0 ...1880,0 MHz		8,0	9,0	—	
Output return loss					
1805,0 ...1880,0 MHz		8,0	10,0	—	
Output phase balance $(\phi(S_{31})-\phi(S_{21})+180°)$					
1805,0 ...1880,0 MHz		-13,0	0	13,0	degree
Output amplitude balance $(|S_{31}/S_{21}|)$					
1805,0 ...1880,0 MHz		-1,5	0	1,9	dB
Attenuation	α_{min}				
10,0 ...1000,0 MHz		35,0	38,0	—	dB
1000,0 ...1710,0 MHz		30,0	35,0	—	dB
1710,0 ...1750,0 MHz		26,0	30,0	—	dB
1750,0 ...1765,0 MHz		19,0	22,0	—	dB
1765,0 ...1785,0 MHz		12,0	14,0	—	dB
1920,0 ...1980,0 MHz		18,0	20,0	—	dB
1980,0 ...2100,0 MHz		20,0	25,0	—	dB
2100,0 ...2800,0 MHz		26,0	29,0	—	dB
2800,0 ...6000,0 MHz		30,0	32,0	—	dB

Characteristics Filter 2 (PCN)

Operating temperature range:	T	= -20 to +70°C
Terminating source impedance:	Z_S	= 50 Ω
Terminating load impedance:	Z_L	= 50 Ω ‖ 18nH

		min.	typ.	max.	
Center frequency	f_c	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ...1880,0 MHz		—	2,6	3,4	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ...1880,0 MHz		—	1,0	1,8	dB
Input return loss					
1805,0 ...1880,0 MHz		8,0	9,0	—	
Output VSWR					
1805,0 ...1880,0 MHz		8,0	10,0	—	
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1805,0 ...1880,0 MHz		-13,0	0	13,0	degree
Output amplitude balance ($|S_{31}/S_{21}|$)					
1805,0 ...1880,0 MHz		-1,5	0	2,0	dB
Attenuation	α_{min}				
10,0 ...1000,0 MHz		35,0	38,0	—	dB
1000,0 ...1710,0 MHz		30,0	35,0	—	dB
1710,0 ...1750,0 MHz		23,0	27,0	—	dB
1750,0 ...1765,0 MHz		18,0	20,0	—	dB
1765,0 ...1785,0 MHz		8,0	12,0	—	dB
1920,0 ...1980,0 MHz		18,0	20,0	—	dB
1980,0 ...2100,0 MHz		20,0	25,0	—	dB
2100,0 ...2800,0 MHz		26,0	29,0	—	dB
2800,0 ...6000,0 MHz		30,0	32,0	—	dB

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Transfer function Filter 2 (PCN)

Transfer function Filter 2 (PCN) - wideband
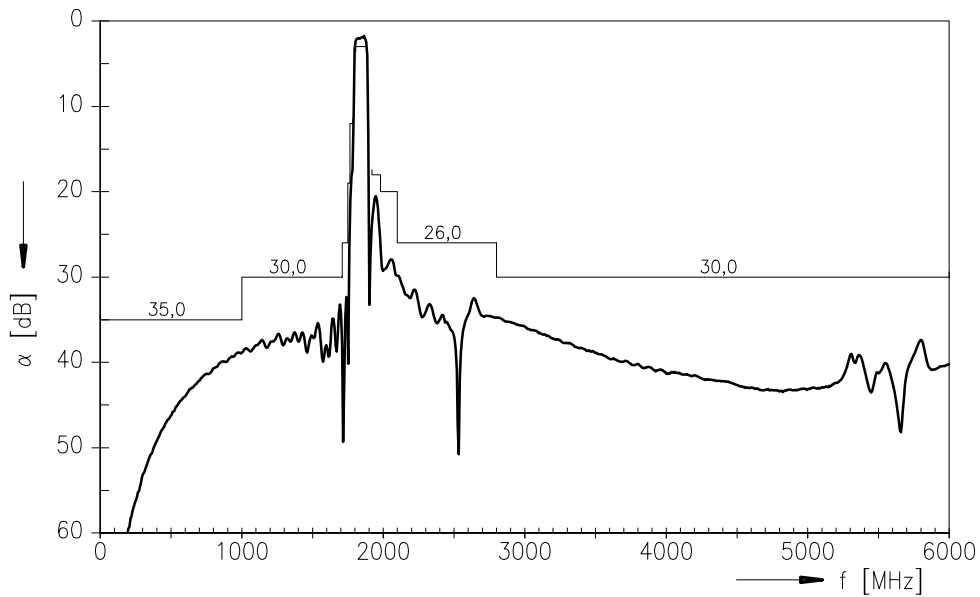
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This brochure replaces the previous edition.

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