



SAW Components

Data Sheet B4233





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B4233

Low-Loss Dual Band Filter for Mobile Communication

390,0 / 420,0 MHz

Data Sheet



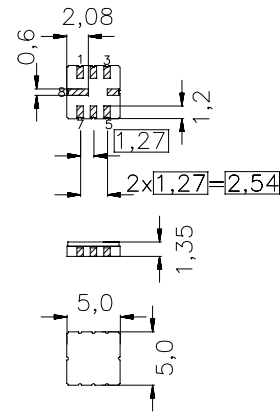
Ceramic package QCC8C

Features

- Low-loss filter for TETRA
- Usable passband: 20 MHz
- Ceramic package for Surface Mounted Technology (SMT)
- RoHS compliant

Terminals

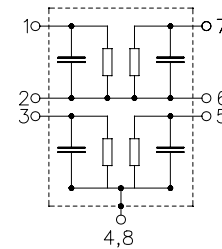
- Ni, gold-plated



Dimensions in mm, approx. weight 0,10 g

Pin configuration

- 1 Input [Filter 1]
- 3 Input [Filter 2]
- 5 Output [Filter 2]
- 7 Output [Filter 1]
- 2, 6 To be grounded
- 4, 8 Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B4233	B39421-B4233-U310	C61157-A7-A56	F61074-V8070-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / + 85	°C	Machine Model, 10 pulses
Storage temperature range	T_{stg}	- 40 / + 85	°C	
DC voltage	V_{DC}	3	V	
ESD voltage	V^*_{ESD}	100*	V	
Source power (CW)	P_S	12	dBm	

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



Characteristics Filter 1

Operating temperature range: $T = +25^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ.	max.	
Center frequency	f_c	—	390,0	—	MHz
Maximum insertion attenuation	α_{\max}	—	1,9	2,2	dB
380,0 ... 400,0	MHz				
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1,1	dB
380,0 ... 400,0	MHz				
Input return loss		10,0	11,0	—	dB
380,0 ... 400,0	MHz				
Output return loss		10,0	12,0	—	dB
380,0 ... 400,0	MHz				
Attenuation	α_{abs}				dB
0,1 ... 150,0	MHz	35,0	42,0	—	
190,0 ... 200,0	MHz	30,0	41,0	—	
228,0 ... 250,0	MHz	30,0	41,0	—	
252,0 ... 275,0	MHz	30,0	39,0	—	
275,0 ... 287,0	MHz	33,0	37,0	—	
304,0 ... 320,0	MHz	30,0	34,0	—	
320,0 ... 335,0	MHz	30,0	33,0	—	
342,0 ... 360,0	MHz	20,0	25,0	—	
418,0 ... 440,0	MHz	20,0	22,0	—	
442,0 ... 455,0	MHz	25,0	31,0	—	
456,0 ... 480,0	MHz	30,0	39,0	—	
492,0 ... 531,0	MHz	30,0	42,0	—	
532,0 ... 560,0	MHz	33,0	39,0	—	
570,0 ... 600,0	MHz	25,0	35,0	—	
632,0 ... 668,0	MHz	35,0	46,0	—	
684,0 ... 1000,0	MHz	27,0	34,0	—	



Characteristics Filter 1

Operating temperature range: $T = -30$ to $+60^{\circ}\text{C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	390,0	—	MHz
Maximum insertion attenuation	α_{\max}	380,0 ... 400,0 MHz	—	2,6	3,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$	380,0 ... 400,0 MHz	—	1,4	2,3	dB
Input return loss		380,0 ... 400,0 MHz	10,0	11,0	—	dB
Output return loss		380,0 ... 400,0 MHz	10,0	12,0	—	dB
Attenuation	α_{abs}					
		0,1 ... 150,0 MHz	35,0	42,0	—	dB
		190,0 ... 200,0 MHz	30,0	41,0	—	dB
		228,0 ... 250,0 MHz	30,0	41,0	—	dB
		252,0 ... 275,0 MHz	30,0	39,0	—	dB
		275,0 ... 287,0 MHz	33,0	37,0	—	dB
		304,0 ... 320,0 MHz	30,0	33,0	—	dB
		320,0 ... 335,0 MHz	30,0	33,0	—	dB
		342,0 ... 360,0 MHz	20,0	25,0	—	dB
		418,0 ... 440,0 MHz	20,0	21,0	—	dB
		442,0 ... 455,0 MHz	25,0	31,0	—	dB
		456,0 ... 480,0 MHz	30,0	39,0	—	dB
		492,0 ... 531,0 MHz	30,0	42,0	—	dB
		532,0 ... 560,0 MHz	33,0	39,0	—	dB
		570,0 ... 600,0 MHz	25,0	35,0	—	dB
		632,0 ... 668,0 MHz	35,0	46,0	—	dB
		684,0 ... 1000,0 MHz	27,0	34,0	—	dB



Characteristics Filter 1

Operating temperature range: $T = -30$ to $+85^{\circ}\text{C}$

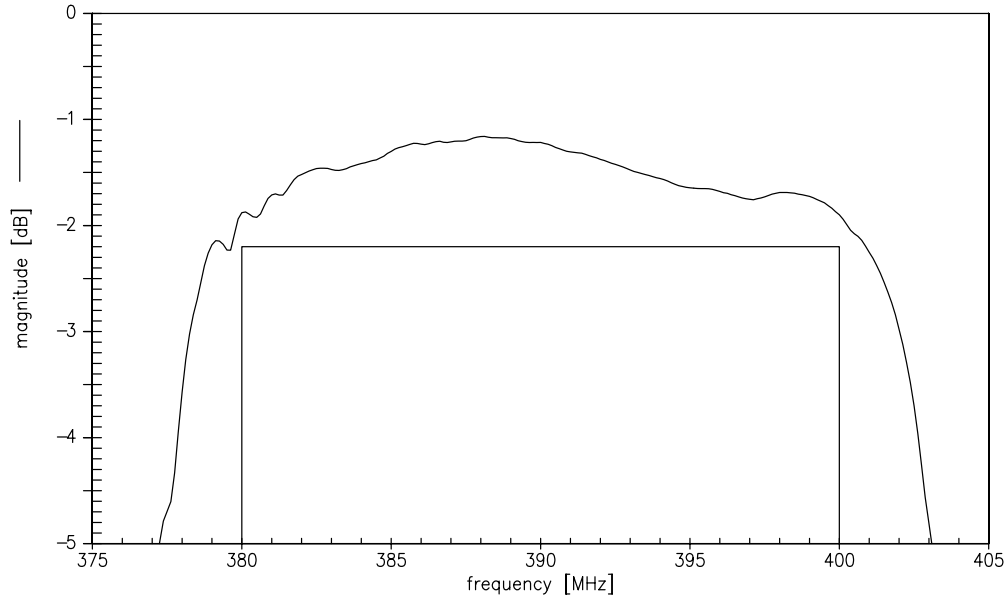
Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 50\ \Omega$

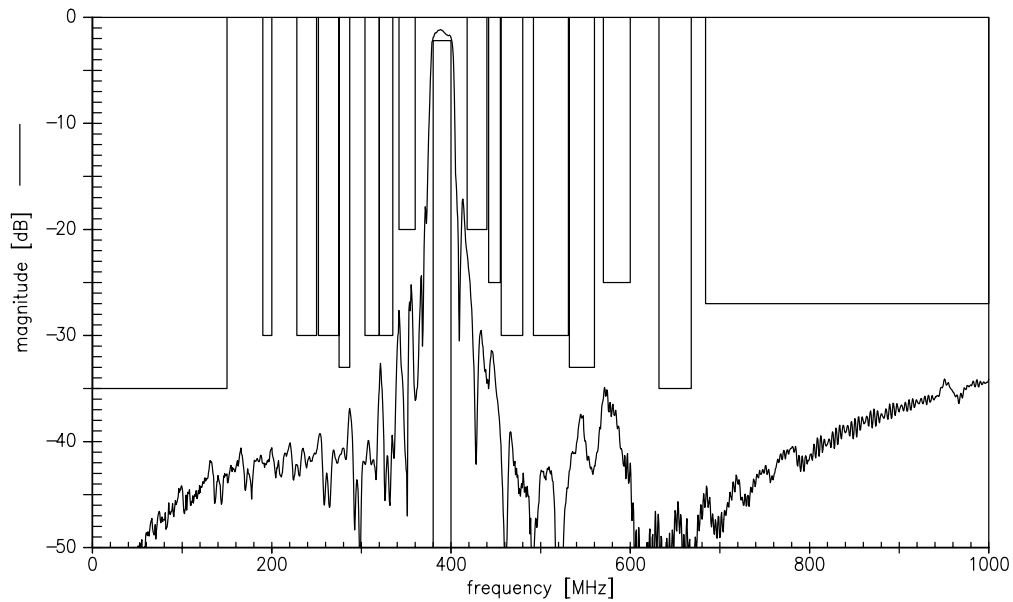
			min.	typ.	max.	
Center frequency	f_c		—	390,0	—	MHz
Maximum insertion attenuation	α_{\max}	380,0 ... 400,0 MHz	—	2,7	3,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$	380,0 ... 400,0 MHz	—	1,5	2,3	dB
Input return loss		380,0 ... 400,0 MHz	10,0	11,0	—	dB
Output return loss		380,0 ... 400,0 MHz	10,0	12,0	—	dB
Attenuation	α_{abs}					
		0,1 ... 150,0 MHz	35,0	42,0	—	dB
		190,0 ... 200,0 MHz	30,0	41,0	—	dB
		228,0 ... 250,0 MHz	30,0	41,0	—	dB
		252,0 ... 275,0 MHz	30,0	39,0	—	dB
		275,0 ... 287,0 MHz	33,0	37,0	—	dB
		304,0 ... 320,0 MHz	30,0	33,0	—	dB
		320,0 ... 335,0 MHz	30,0	33,0	—	dB
		342,0 ... 360,0 MHz	20,0	25,0	—	dB
		418,0 ... 440,0 MHz	20,0	21,0	—	dB
		442,0 ... 455,0 MHz	25,0	31,0	—	dB
		456,0 ... 480,0 MHz	30,0	39,0	—	dB
		492,0 ... 531,0 MHz	30,0	42,0	—	dB
		532,0 ... 560,0 MHz	33,0	39,0	—	dB
		570,0 ... 600,0 MHz	25,0	35,0	—	dB
		632,0 ... 668,0 MHz	35,0	46,0	—	dB
		684,0 ... 1000,0 MHz	27,0	34,0	—	dB



Transfer function of filter 1 (passband)



Transfer function of filter 1 (narrow band)





Characteristics Filter 2

Operating temperature range: $T = +25^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	420,0	—	MHz
Maximum insertion attenuation	α_{\max}	410,0 ... 430,0 MHz	—	1,9	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$	410,0 ... 430,0 MHz	—	0,6	1,0	dB
Input return loss		410,0 ... 430,0 MHz	10,0	11,5	—	dB
Output return loss		410,0 ... 430,0 MHz	10,0	13,5	—	dB
Attenuation	α_{abs}					
		0,1 ... 150,0 MHz	35,0	42,0	—	dB
		204,0 ... 216,0 MHz	30,0	41,0	—	dB
		246,0 ... 270,0 MHz	30,0	41,0	—	dB
		272,0 ... 301,0 MHz	35,0	41,0	—	dB
		328,0 ... 344,0 MHz	30,0	42,0	—	dB
		345,0 ... 360,0 MHz	25,0	31,0	—	dB
		369,0 ... 387,0 MHz	18,0	23,0	—	dB
		451,0 ... 473,0 MHz	20,0	23,0	—	dB
		477,0 ... 491,0 MHz	25,0	35,0	—	dB
		492,0 ... 516,0 MHz	30,0	39,0	—	dB
		532,0 ... 573,0 MHz	30,0	38,0	—	dB
		574,0 ... 602,0 MHz	33,0	39,0	—	dB
		602,0 ... 1000,0 MHz	27,0	34,0	—	dB



Data Sheet



Characteristics Filter 2

Operating temperature range: $T = -30$ to $+60^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

			min.	typ.	max.	
Center frequency	f_c		—	420,0	—	MHz
Maximum insertion attenuation	α_{max}	410,0 ... 430,0 MHz	—	2,4	3,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$	410,0 ... 430,0 MHz	—	1,1	2,2	dB
Input return loss		410,0 ... 430,0 MHz	10,0	11,5	—	dB
Output return loss		410,0 ... 430,0 MHz	10,0	13,5	—	dB
Attenuation	α_{abs}					
		0,1 ... 150,0 MHz	35,0	42,0	—	dB
		204,0 ... 216,0 MHz	30,0	41,0	—	dB
		246,0 ... 270,0 MHz	30,0	41,0	—	dB
		272,0 ... 301,0 MHz	35,0	41,0	—	dB
		328,0 ... 344,0 MHz	30,0	35,0	—	dB
		345,0 ... 360,0 MHz	25,0	31,0	—	dB
		369,0 ... 387,0 MHz	18,0	23,0	—	dB
		451,0 ... 473,0 MHz	20,0	21,0	—	dB
		477,0 ... 491,0 MHz	25,0	35,0	—	dB
		492,0 ... 516,0 MHz	30,0	39,0	—	dB
		532,0 ... 573,0 MHz	30,0	38,0	—	dB
		574,0 ... 602,0 MHz	33,0	39,0	—	dB
		602,0 ... 1000,0 MHz	27,0	34,0	—	dB



Data Sheet



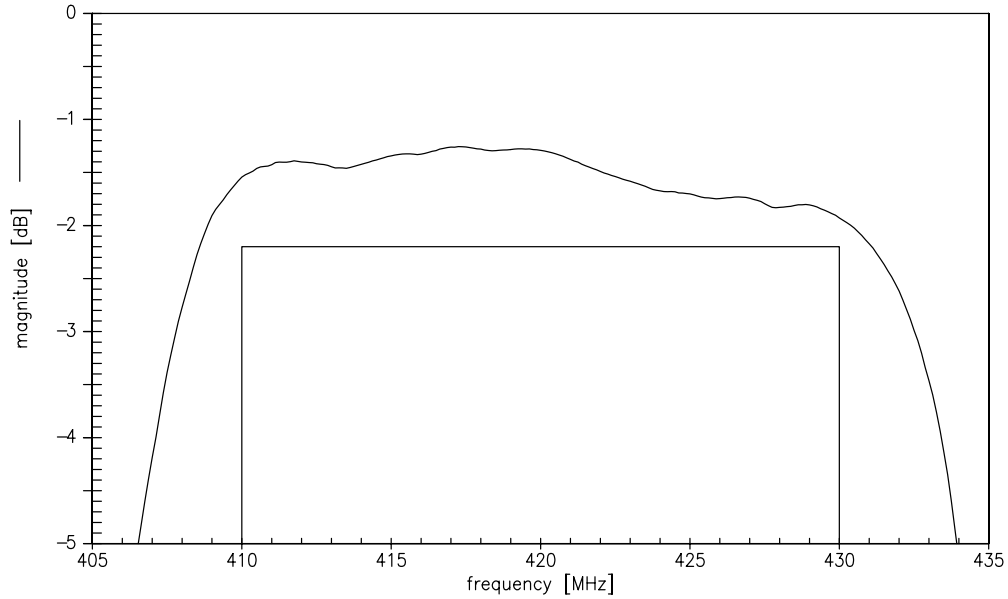
Characteristics Filter 2

Operating temperature range: $T = -30$ to $+85^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

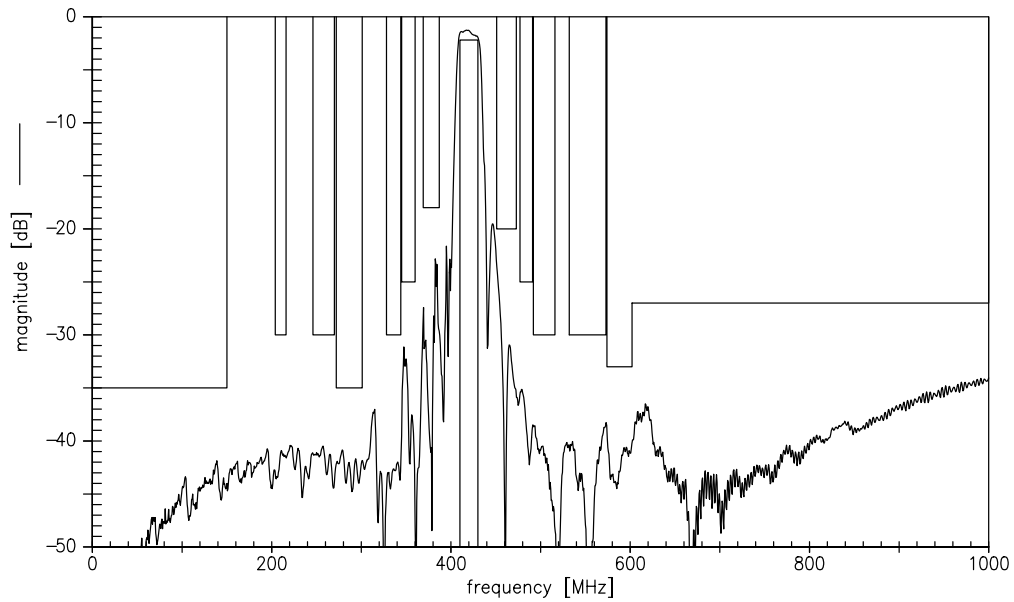
			min.	typ.	max.	
Center frequency	f_c		—	420,0	—	MHz
Maximum insertion attenuation	α_{max}	410,0 ... 430,0 MHz	—	2,5	3,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$	410,0 ... 430,0 MHz	—	1,2	2,2	dB
Input return loss		410,0 ... 430,0 MHz	10,0	11,5	—	dB
Output return loss		410,0 ... 430,0 MHz	10,0	13,5	—	dB
Attenuation	α_{abs}					
		0,1 ... 150,0 MHz	35,0	42,0	—	dB
		204,0 ... 216,0 MHz	30,0	41,0	—	dB
		246,0 ... 270,0 MHz	30,0	41,0	—	dB
		272,0 ... 301,0 MHz	35,0	41,0	—	dB
		328,0 ... 344,0 MHz	30,0	35,0	—	dB
		345,0 ... 360,0 MHz	25,0	31,0	—	dB
		369,0 ... 387,0 MHz	18,0	23,0	—	dB
		451,0 ... 473,0 MHz	20,0	21,0	—	dB
		477,0 ... 491,0 MHz	25,0	35,0	—	dB
		492,0 ... 516,0 MHz	30,0	39,0	—	dB
		532,0 ... 573,0 MHz	30,0	38,0	—	dB
		574,0 ... 602,0 MHz	33,0	39,0	—	dB
		602,0 ... 1000,0 MHz	27,0	34,0	—	dB



Transfer function of filter 2 (passband)



Transfer function of filter 2 (narrow band)





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B4233

Low-Loss Dual Band Filter for Mobile Communication

390,0 / 420,0 MHz

Data Sheet



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