



SAW Components

Data Sheet B4233

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SAW Components

B4233

Low-Loss Dual Band Filter for Mobile Communication

390,0 / 420,0 MHz

Data Sheet



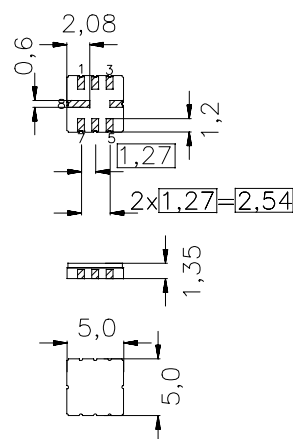
Ceramic package **QCC8C**

Features

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

Terminals

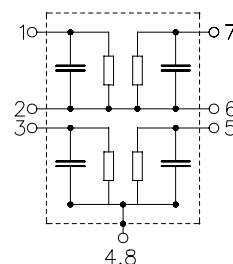
- Ni, gold-plated



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

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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}					
	380,0 ... 400,0 MHz		—	1,9	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
	380,0 ... 400,0 MHz		—	0,7	1,1	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	34,0	—	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	22,0	—	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

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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}			—	2,6	3,3	dB
		380,0 ... 400,0	MHz				
Amplitude ripple (p-p)	$\Delta\alpha$			—	1,4	2,3	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}						
		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

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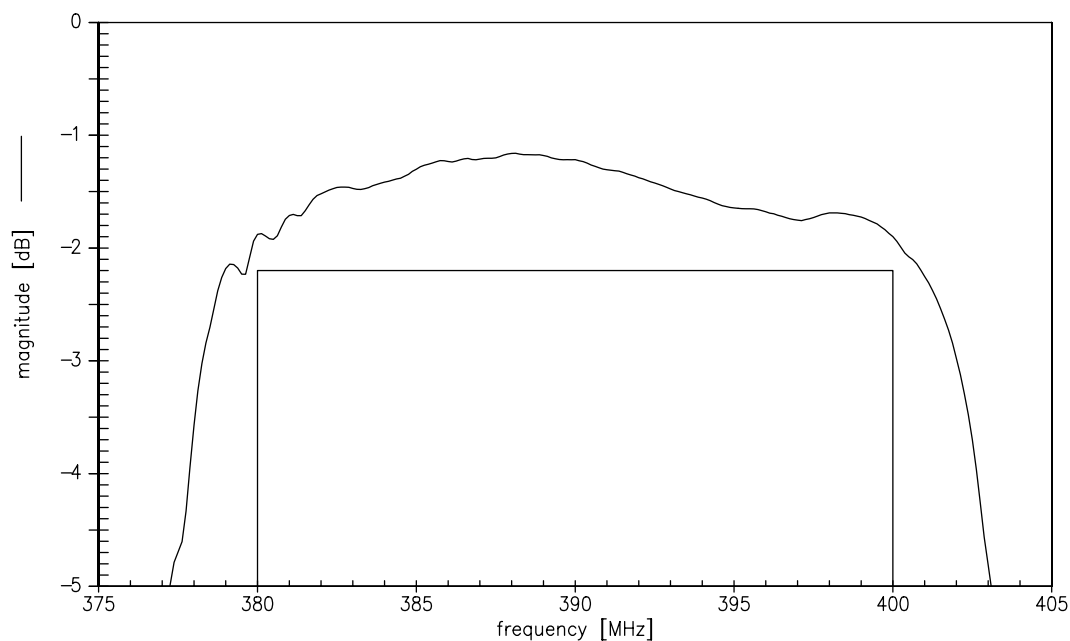
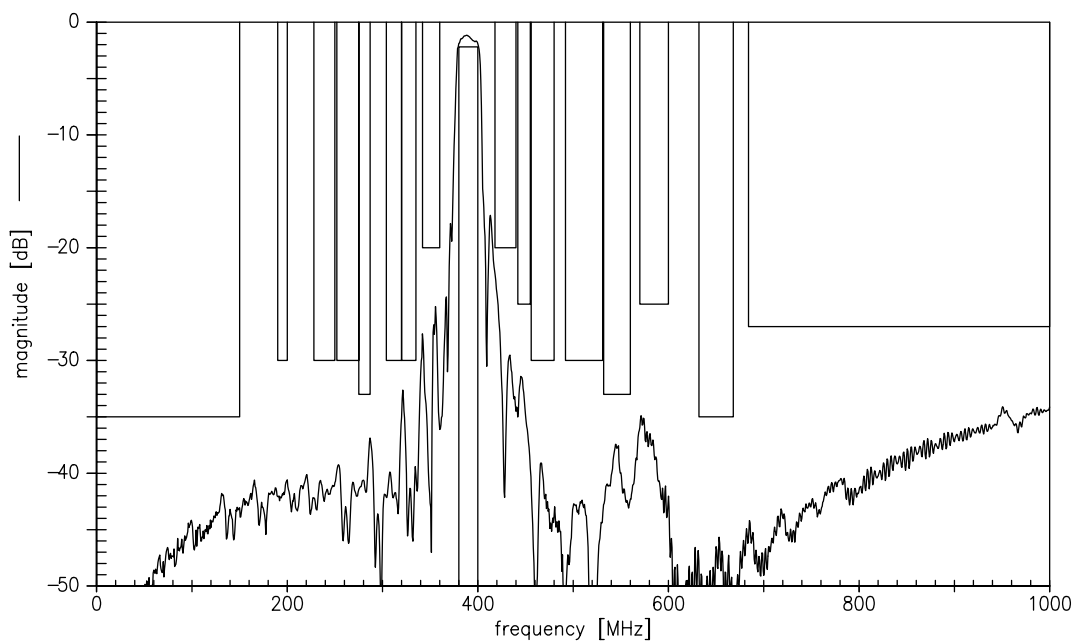
Characteristics Filter 1

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}			—	2,7	3,3	dB
		380,0 ... 400,0	MHz				
Amplitude ripple (p-p)	$\Delta\alpha$			—	1,5	2,3	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}						
		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)


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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

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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}			—	2,4	3,3	dB
		410,0 ... 430,0	MHz				
Amplitude ripple (p-p)	$\Delta\alpha$			—	1,1	2,2	dB
		410,0 ... 430,0	MHz				
Input return loss				10,0	11,5	—	dB
		410,0 ... 430,0	MHz				
Output return loss				10,0	13,5	—	dB
		410,0 ... 430,0	MHz				
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

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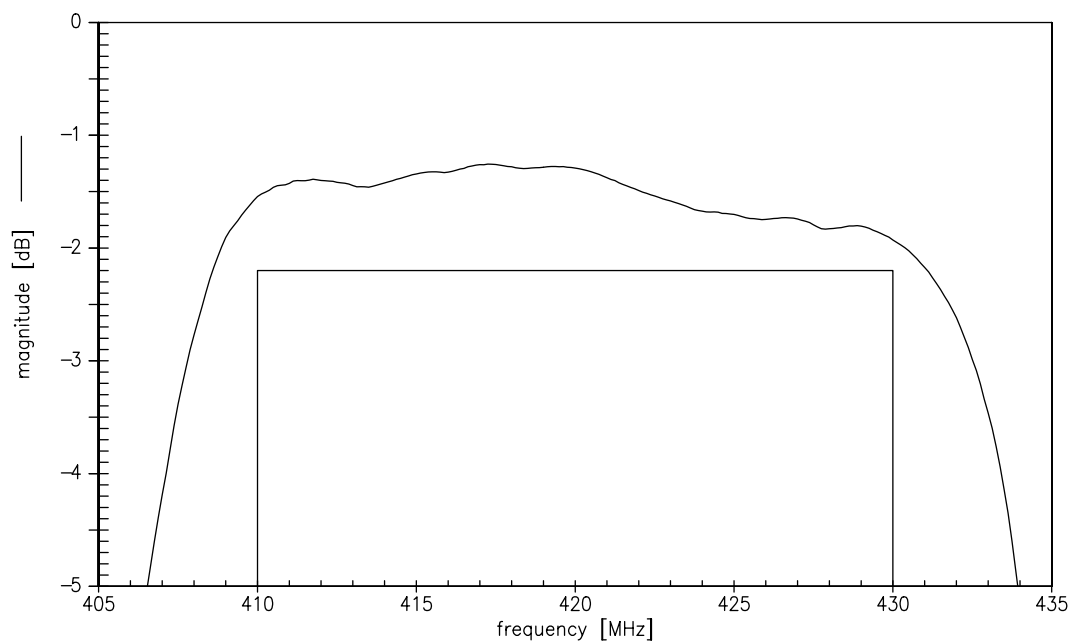
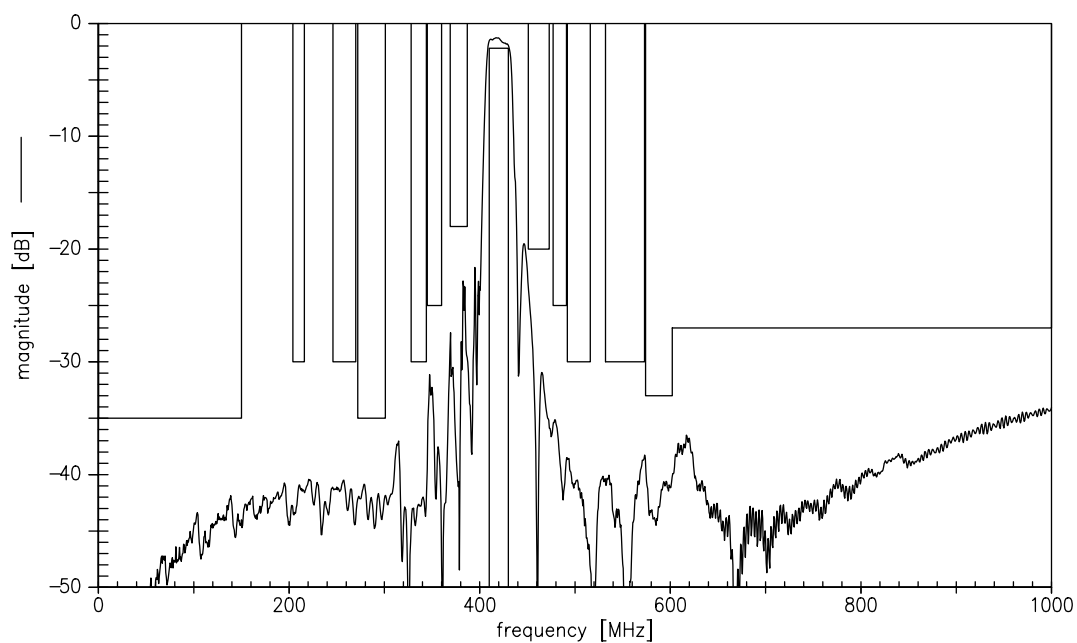
Characteristics Filter 2

 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}			—	2,5	3,3	dB
		410,0 ... 430,0	MHz				
Amplitude ripple (p-p)	$\Delta\alpha$			—	1,2	2,2	dB
		410,0 ... 430,0	MHz				
Input return loss				10,0	11,5	—	dB
		410,0 ... 430,0	MHz				
Output return loss				10,0	13,5	—	dB
		410,0 ... 430,0	MHz				
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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