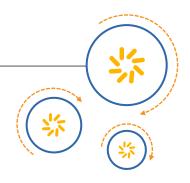


RF360 Europe GmbH

A Qualcomm - TDK Joint Venture



SAW Components

SAW RF filter for base stations

Trunked Radio

Series/type: B4232

Ordering code: B39861B4232H410

Date: Apr 05, 2016

Version: 2.1

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B4232

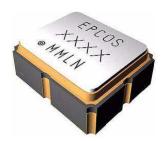
SAW RF filter 769.0/860.5 MHz

Data sheet



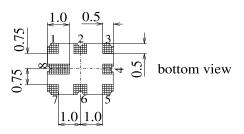
Application

- Low-loss 2-in-1 RF filter for Trunked Radio
- Device with two integrated Rx filters
- Low amplitude ripple
- Usable passband filter 1: 19.0 MHz
- Usable passband filter 2: 14.0 MHz
- No matching required for operation at 50 Ω



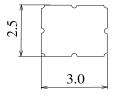
Features

- Package size 3.0 x 2.5x 0.98 mm³
- Package code QCC8E
- RoHS compatible
- Approximate weight 0.027g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitivity Level 1
- Filter surface passivated





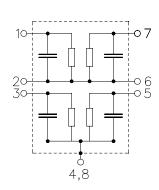
side view



top view

Pin configuration

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





SAW RF filter 769.0/860.5 MHz

SMD **Data sheet**

Characteristics filter 1

Temperature range for specification: T = 25 +/- 2 °C

Terminating source impedance: $Z_S =$ 50Ω Terminating load impedance: 50Ω

			min.	typ. @ 25 °C	max.	
Nominal frequency		f _N	_	860.5	_	MHz
Maximum insertion attenuation		α_{max}				
	MHz	Milax	_	2.1	2.5	dB
Amplitude ripple (p-p)		$\Delta \alpha$				
851.0 870.0 I	MHz		_	0.7	1.1	dB
Group delay ripple (p-p)		Δau				
851.0 870.0 l	MHz		_	20.0	50.0	ns
Input return loss						
-	MHz		10.0	11.5	_	dB
Output return loss						
851.0 870.0 l	MHz		10.0	11.5	_	dB
Absolute attenuation		α_{abs}				
0.1 483.0 l	MHz		57	60	_	dB
483.0 676.0 l	MHz		50	60		dB
676.0 724.0 l	MHz		40	64		dB
741.4 773.0	MHz		30	59		dB
804.0 822.0 l	MHz		20	42	_	dB
880.0	MHz		7	11	_	dB
898.0 918.0 l	MHz		20	40	_	dB
946.0 967.0 l	MHz		30	59	<u> </u>	dB
1040.0 1070.0 l	MHz		46	54	_	dB
	MHz		43	50	_	dB
	MHz		30	40	_	dB
Temperature coefficient of frequen	ncy	TC _f	_	-36	_	ppm/K



SAW RF filter 769.0/860.5 MHz

Data sheet <u>SMD</u>

Characteristics filter 1

Temperature range for specification: $T = -30 \text{ to} + 70 ^{\circ}\text{C}$

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

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	_	860.5	_	MHz
Maximum insertion attenuation	$lpha_{\sf max}$				
	Hz	_	2.4	2.7	dB
Amplitude ripple (p-p)	$\Delta \alpha$				
	Hz	_	1.0	1.3	dB
Group delay ripple (p-p)	Δau				
	Hz	_	30.0	50.0	ns
Input return loss					
-	Hz	10.0	11.0	_	dB
Output return loss					
<u>-</u>	Hz	10.0	11.0	_	dB
Absolute attenuation	$lpha_{\sf abs}$				
0.1 483.0 M	Hz	57	60		dB
483.0 676.0 M	Hz	50	60	_	dB
	Hz	40	64	_	dB
741.4 773.0 M	Hz	30	59		dB
804.0 822.0 M	Hz	20	42	_	dB
880.0 M	Hz	4	7	_	dB
898.0 918.0 M	Hz	20	38	_	dB
946.0 967.0 M	Hz	30	59	_	dB
1040.0 1070.0 M	Hz	46	54		dB
	Hz	43	50	_	dB
1256.0 2000.0 M	Hz	30	40	_	dB
Temperature coefficient of frequence	y TC _f	_	-36	_	ppm/K



SAW RF filter 769.0/860.5 MHz

Data sheet



Maximum ratings

Operable temperature range	Т	-40/+85	°C	
Storage temperature range	T_{stg}	-40/+85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100 ¹⁾	V	Machine Model ,10 pluses
Input power	P_{IN}			
851.0 870.0 MHz		15	dBm	cw,source and load impedance 50 Ω
762.0 776.0 MHz		15	dBm	cw,source and load impedance 50 Ω

¹⁾ acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

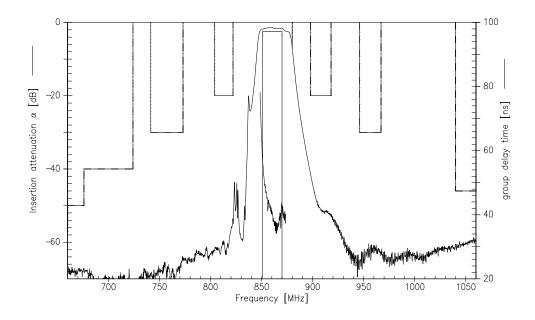


SAW Components B4232
SAW RF filter 769.0/860.5 MHz

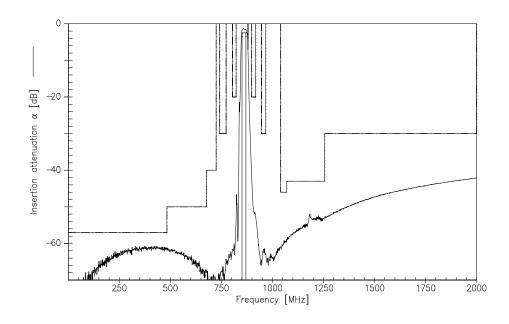
Data sheet



Transfer function filter 1 (S21, narrowband)



Transfer function filter 1 (S21, wideband)





B4232

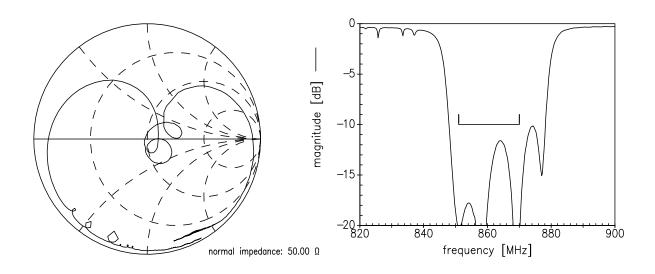
SAW RF filter 769.0/860.5 MHz

Data sheet

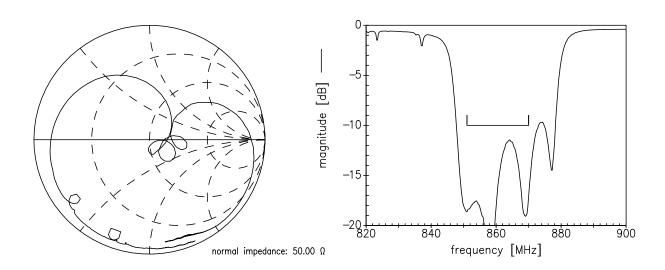


Smith charts

S₁₁ function filter 1



S₂₂ function filter 1





SAW RF filter 769.0/860.5 MHz

Data sheet <u>SMD</u>

Characteristics filter 2

Temperature range for specification: $T = 25 + -2 ^{\circ}C$

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

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	_	769.0	_	MHz
Maximum insertion attenuation 762.0 776.0 MHz	α _{max}	_	1.7	2.4	dB
Amplitude ripple (p-p) 762.0 776.0 MHz	$\Delta lpha$ z	_	0.4	1.0	dB
Group delay ripple (p-p) 762.0 776.0 MHz	Δτ Z	_	22.0	50.0	ns
Input return loss 762.0 776.0 MHz	Z	12.0	13.0	_	dB
Output return loss 762.0 776.0 MHz	Z	12.0	13.0	_	dB
Absolute attenuation 0.0 431.0 MHz 431.0 604.0 MHz 604.0 690.0 MHz 690.0 733.0 MHz 733.0 752.0 MHz 804.0 847.0 MHz 847.0 892.7 MHz 892.7 910.7 MHz 910.7 995.3 MHz 995.3 1121.0 MHz	Z Z Z Z Z Z	57 50 30 20 9 25 30 50 47 42	60 60 62 56 18 36 54 56 54 56	— — — — — — — —	dB dB dB dB dB dB dB dB
Temperature coefficient of frequency	TC _f	_	-36		ppm/K



B4232

SAW RF filter 769.0/860.5 MHz

Data sheet

SMD

haracteristics filter 2

Temperature range for specification: $T = -30 \text{ to} + 70 ^{\circ}\text{C}$

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

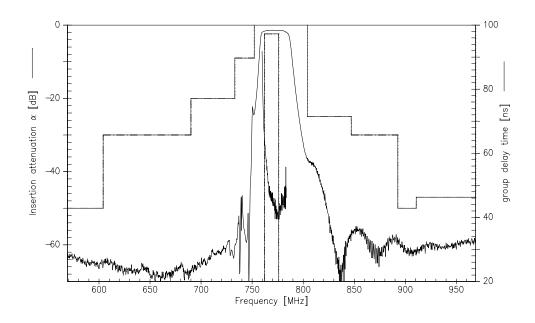
		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	_	769.0	_	MHz
Maximum insertion attenuation 762.0 776.0 MI	α _{max} Hz	_	1.8	2.6	dB
Amplitude ripple (p-p) 762.0 776.0 MI	Δα Hz	_	0.5	1.0	dB
			0.0	1.0	d B
Group delay ripple (p-p) 762.0 776.0 MI	Δτ Hz	_	30.0	50.0	ns
Input return loss	⊣ ~	12.0	12.0		4D
762.0 776.0 MI	72	12.0	13.0	_	dB
Output return loss 762.0 776.0 MI	J ∍	12.0	13.0		dB
	12	12.0	13.0		ub
Absolute attenuation	$lpha_{\sf abs}$				
0.1 431.0 MI	Hz	57	60	<u> </u>	dB
431.0 604.0 MI	Hz	50	60		dB
604.0 690.0 MI	Hz	30	62		dB
690.0 733.0 MI	Hz	20	56		dB
733.0 752.0 MI	Hz	9	16	_	dB
804.0 847.0 MI	Hz	25	34	_	dB
847.0 892.7 MI	Hz	30	54	<u> </u>	dB
892.7 910.7 MI	Ηz	50	56	_	dB
910.7 995.3 MI	Hz	47	54		dB
995.3 1121.0 MI	Hz	42	52	_	dB
Temperature coefficient of frequency	y TC _f	_	-36	<u> </u>	ppm/K



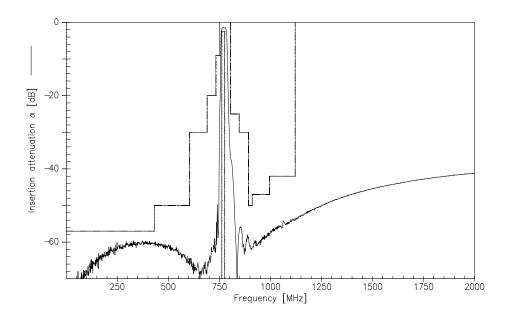
SAW Components B4232
SAW RF filter 769.0/860.5 MHz

Data sheet SMD

Transfer function filter 2 (S21, narrowband)



Transfer function filter 2 (S21, wideband)





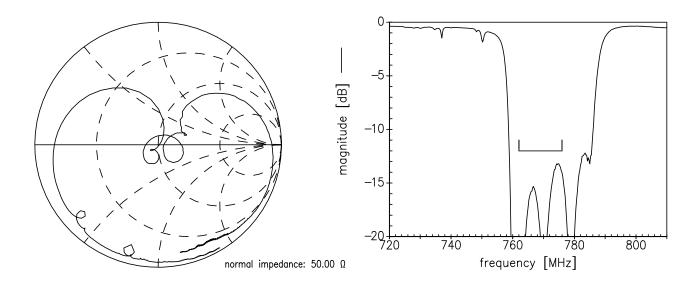
SAW RF filter 769.0/860.5 MHz

Data sheet

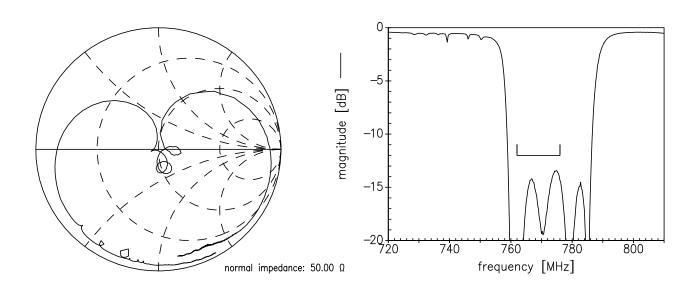


Smith charts

S₁₁ function filter 2



S₂₂ function filter 2





SAW Components B4232
SAW RF filter 769.0/860.5 MHz

Data sheet



References

Туре	B4232
Ordering code	B39861B4232H410
Marking and package	C61157-A7-A92
Packaging	F61074-V8174-Z000
Date codes	L_1126
S-parameters	B4232_LB_NB.s2p , B4232_LB_WB.s2p B4232_UB_NB.s2p , B4232_UB_WB.s2p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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SAW RF filter 769.0/860.5 MHz

Data sheet



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