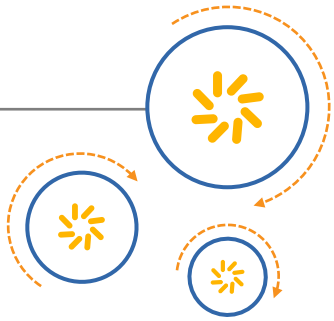
RF360 Europe GmbH

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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RF360 Europe GmbH, Anzinger Str. 13, München, Germany

SAW Components

SAW RF filter for base stations

Trunked Radio

Series/type:	**B4232**
Ordering code:	**B39861B4232H410**
Date:	Apr 05, 2016
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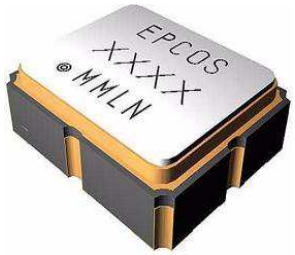
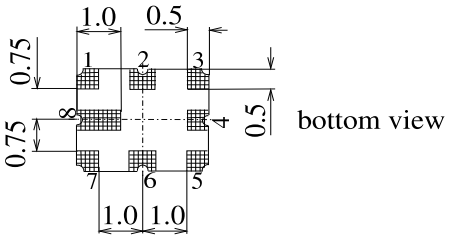
Application

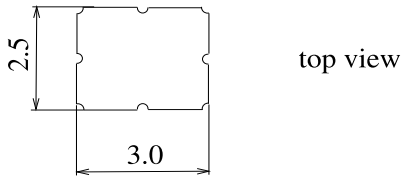
- Low-loss 2-in-1 RF filter for Trunked Radio
- Device with two integrated Rx filters
- Low amplitude ripple
- Usable passband filter 1: 19.0 MHz
- Usable passband filter 2: 14.0 MHz
- No matching required for operation at 50 Ω



Features

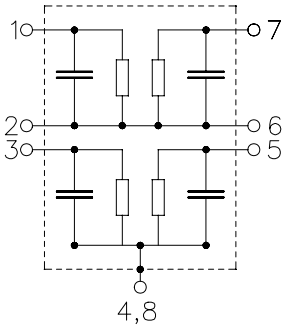
- Package size 3.0 x 2.5x 0.98 mm³
- Package code QCC8E
- RoHS compatible
- Approximate weight 0.027g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 1
- Filter surface passivated





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



Characteristics filter 1

Temperature range for specification: T = 25 +/– 2 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	860.5	—	MHz
Maximum insertion attenuation	α_{max}				
851.0 ... 870.0 MHz		—	2.1	2.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
851.0 ... 870.0 MHz		—	0.7	1.1	dB
Group delay ripple (p-p)	$\Delta\tau$				
851.0 ... 870.0 MHz		—	20.0	50.0	ns
Input return loss					
851.0 ... 870.0 MHz		10.0	11.5	—	dB
Output return loss					
851.0 ... 870.0 MHz		10.0	11.5	—	dB
Absolute attenuation	α_{abs}				
0.1 ... 483.0 MHz		57	60	—	dB
483.0 ... 676.0 MHz		50	60	—	dB
676.0 ... 724.0 MHz		40	64	—	dB
741.4 ... 773.0 MHz		30	59	—	dB
804.0 ... 822.0 MHz		20	42	—	dB
880.0 MHz		7	11	—	dB
898.0 ... 918.0 MHz		20	40	—	dB
946.0 ... 967.0 MHz		30	59	—	dB
1040.0 ... 1070.0 MHz		46	54	—	dB
1070.0 ... 1256.0 MHz		43	50	—	dB
1256.0 ... 2000.0 MHz		30	40	—	dB
Temperature coefficient of frequency	TC_f	—	–36	—	ppm/K

Characteristics filter 1

Temperature range for specification: T = –30 to + 70 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

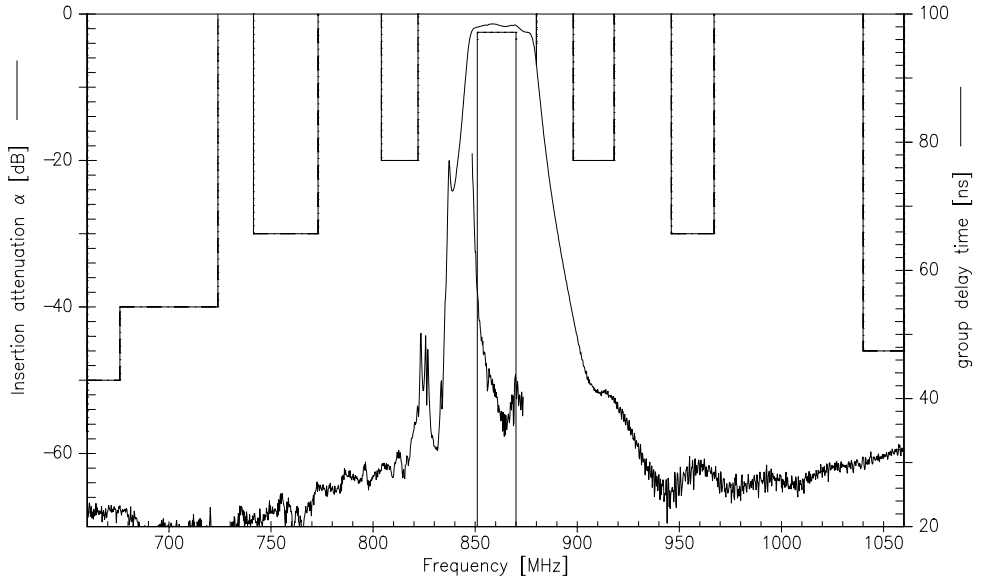
		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	860.5	—	MHz
Maximum insertion attenuation	α_{max}				
851.0 ... 870.0 MHz		—	2.4	2.7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
851.0 ... 870.0 MHz		—	1.0	1.3	dB
Group delay ripple (p-p)	$\Delta\tau$				
851.0 ... 870.0 MHz		—	30.0	50.0	ns
Input return loss					
851.0 ... 870.0 MHz		10.0	11.0	—	dB
Output return loss					
851.0 ... 870.0 MHz		10.0	11.0	—	dB
Absolute attenuation	α_{abs}				
0.1 ... 483.0 MHz		57	60	—	dB
483.0 ... 676.0 MHz		50	60	—	dB
676.0 ... 724.0 MHz		40	64	—	dB
741.4 ... 773.0 MHz		30	59	—	dB
804.0 ... 822.0 MHz		20	42	—	dB
880.0 MHz		4	7	—	dB
898.0 ... 918.0 MHz		20	38	—	dB
946.0 ... 967.0 MHz		30	59	—	dB
1040.0 ... 1070.0 MHz		46	54	—	dB
1070.0 ... 1256.0 MHz		43	50	—	dB
1256.0 ... 2000.0 MHz		30	40	—	dB
Temperature coefficient of frequency	TC_f	—	–36	—	ppm/K

Maximum ratings

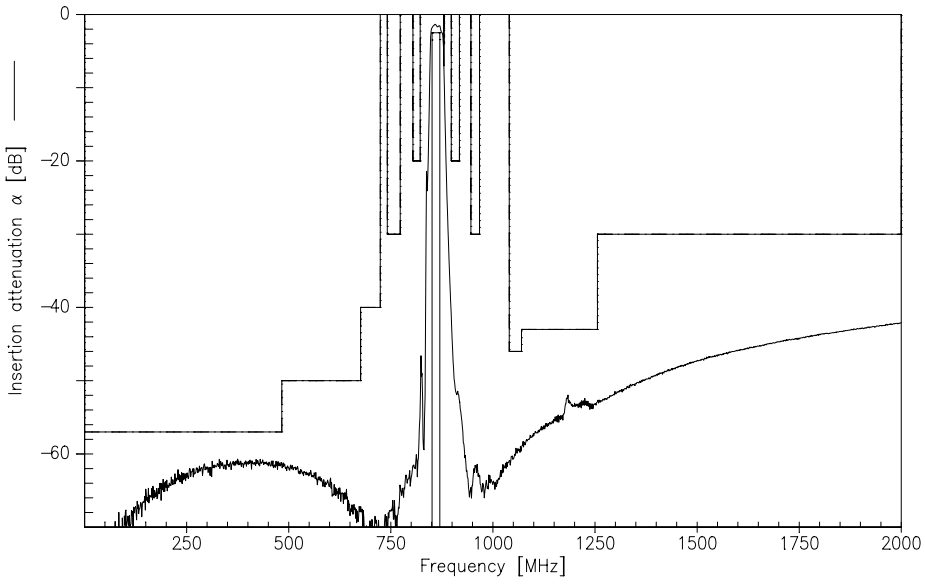
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	100[1)]	V	Machine Model ,10 pluses
Input power	P_{IN}			
851.0 ... 870.0 MHz		15	dBm	cw,source and load impedance 50 Ω
762.0 ... 776.0 MHz		15	dBm	cw,source and load impedance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

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

Transfer function filter 1 (S21, narrowband)

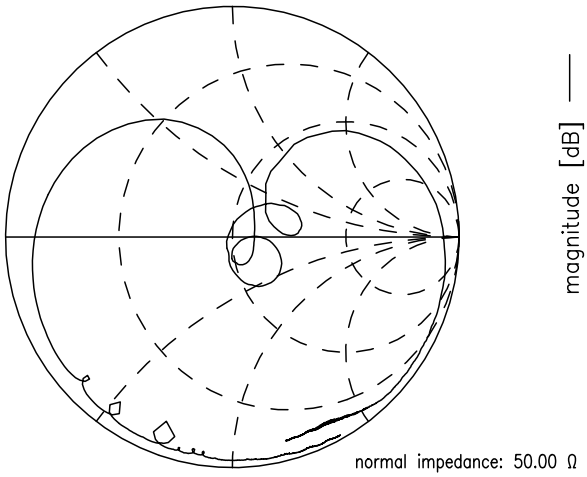


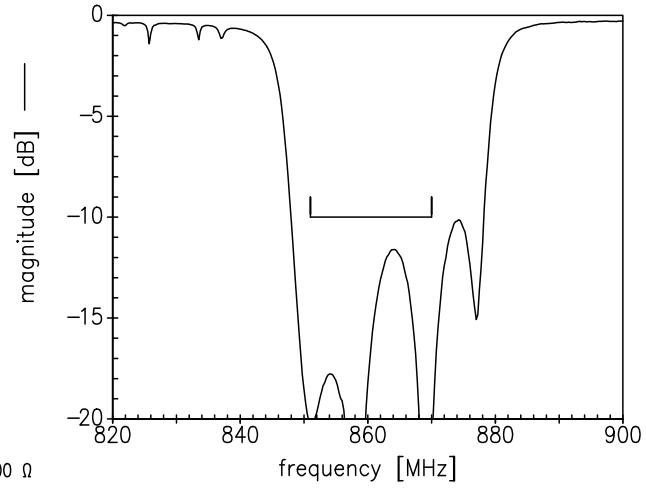
Transfer function filter 1 (S21, wideband)



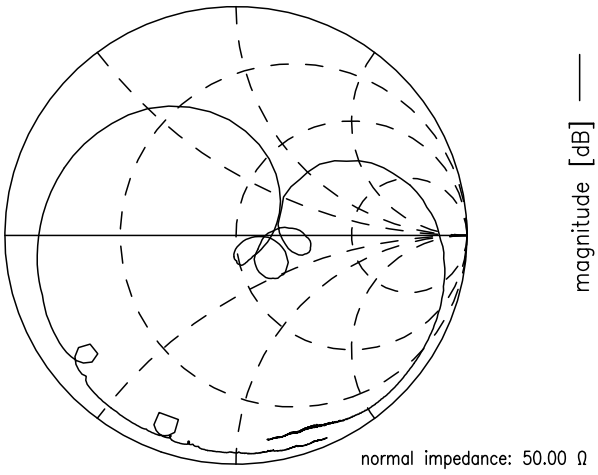
Smith charts

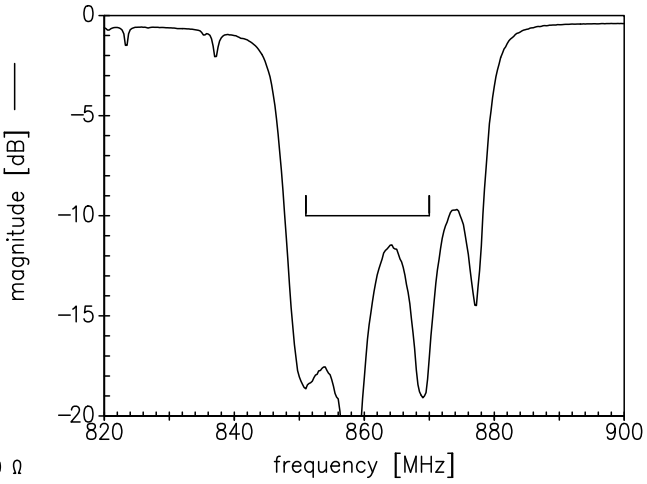
S_{11} function filter 1





S_{22} function filter 1





Characteristics filter 2

Temperature range for specification: T = 25 +/– 2 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

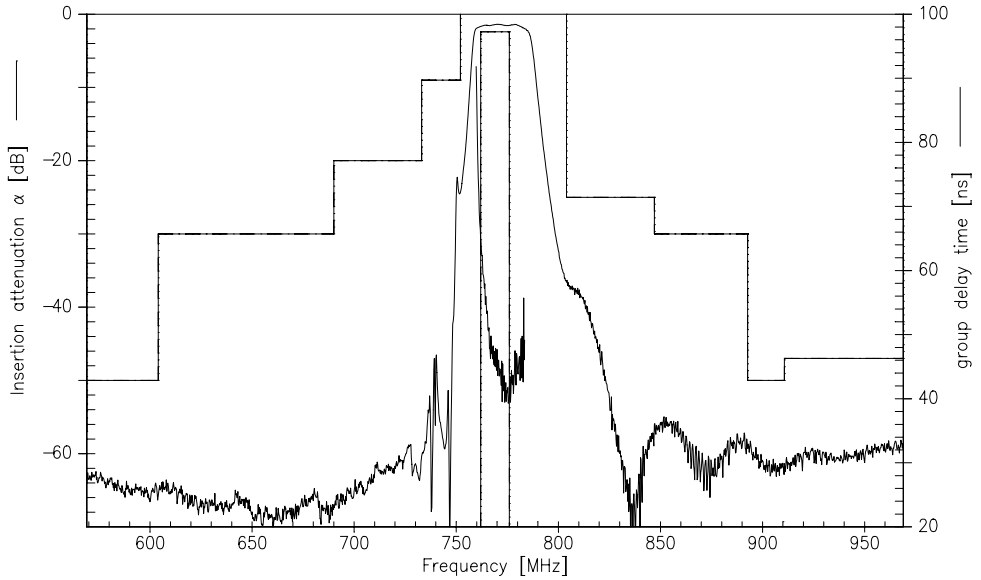
		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	769.0	—	MHz
Maximum insertion attenuation	α_{max}				
762.0 ... 776.0 MHz		—	1.7	2.4	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
762.0 ... 776.0 MHz		—	0.4	1.0	dB
Group delay ripple (p-p)	$\Delta\tau$				
762.0 ... 776.0 MHz		—	22.0	50.0	ns
Input return loss					
762.0 ... 776.0 MHz		12.0	13.0	—	dB
Output return loss					
762.0 ... 776.0 MHz		12.0	13.0	—	dB
Absolute attenuation	α_{abs}				
0.0 ... 431.0 MHz		57	60	—	dB
431.0 ... 604.0 MHz		50	60	—	dB
604.0 ... 690.0 MHz		30	62	—	dB
690.0 ... 733.0 MHz		20	56	—	dB
733.0 ... 752.0 MHz		9	18	—	dB
804.0 ... 847.0 MHz		25	36	—	dB
847.0 ... 892.7 MHz		30	54	—	dB
892.7 ... 910.7 MHz		50	56	—	dB
910.7 ... 995.3 MHz		47	54	—	dB
995.3 ... 1121.0 MHz		42	52	—	dB
Temperature coefficient of frequency	TC_f	—	–36	—	ppm/K

haracteristics filter 2

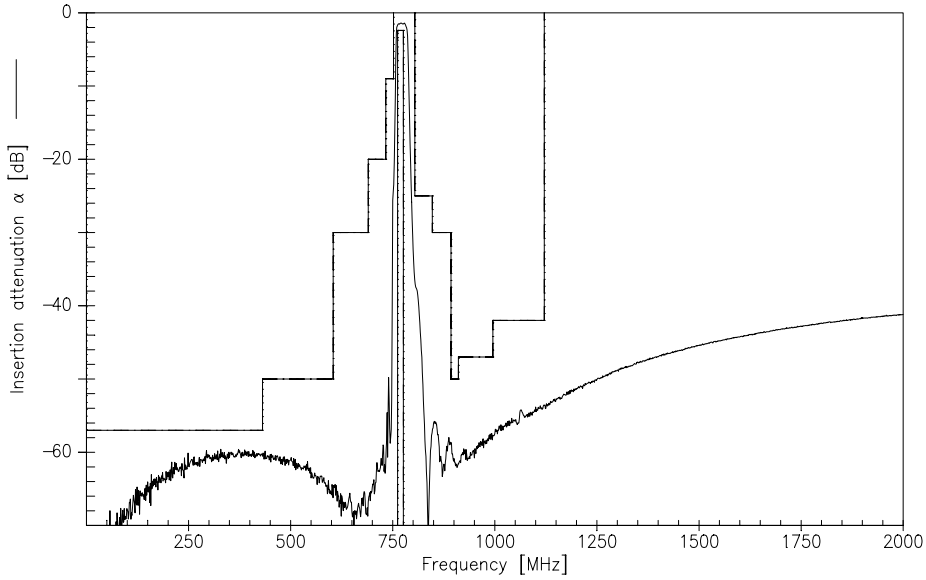
Temperature range for specification: T = –30 to + 70 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Nominal frequency	f_N	—	769.0	—	MHz
Maximum insertion attenuation	α_{max}				
762.0 ... 776.0 MHz		—	1.8	2.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
762.0 ... 776.0 MHz		—	0.5	1.0	dB
Group delay ripple (p-p)	$\Delta\tau$				
762.0 ... 776.0 MHz		—	30.0	50.0	ns
Input return loss					
762.0 ... 776.0 MHz		12.0	13.0	—	dB
Output return loss					
762.0 ... 776.0 MHz		12.0	13.0	—	dB
Absolute attenuation	α_{abs}				
0.1 ... 431.0 MHz		57	60	—	dB
431.0 ... 604.0 MHz		50	60	—	dB
604.0 ... 690.0 MHz		30	62	—	dB
690.0 ... 733.0 MHz		20	56	—	dB
733.0 ... 752.0 MHz		9	16	—	dB
804.0 ... 847.0 MHz		25	34	—	dB
847.0 ... 892.7 MHz		30	54	—	dB
892.7 ... 910.7 MHz		50	56	—	dB
910.7 ... 995.3 MHz		47	54	—	dB
995.3 ... 1121.0 MHz		42	52	—	dB
Temperature coefficient of frequency	TC_f	—	–36	—	ppm/K

Transfer function filter 2 (S21, narrowband)

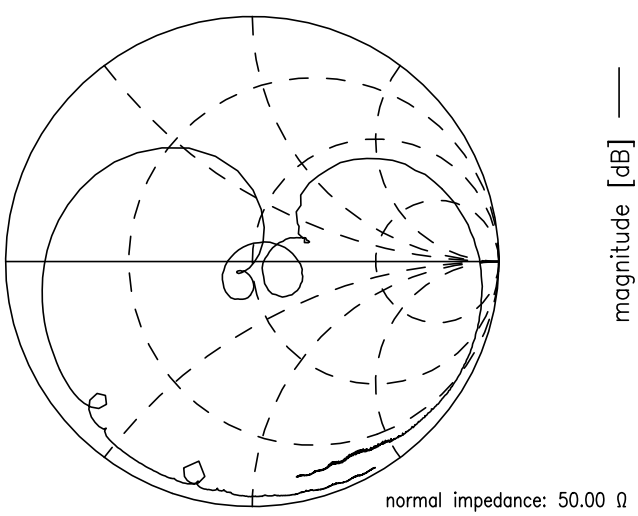


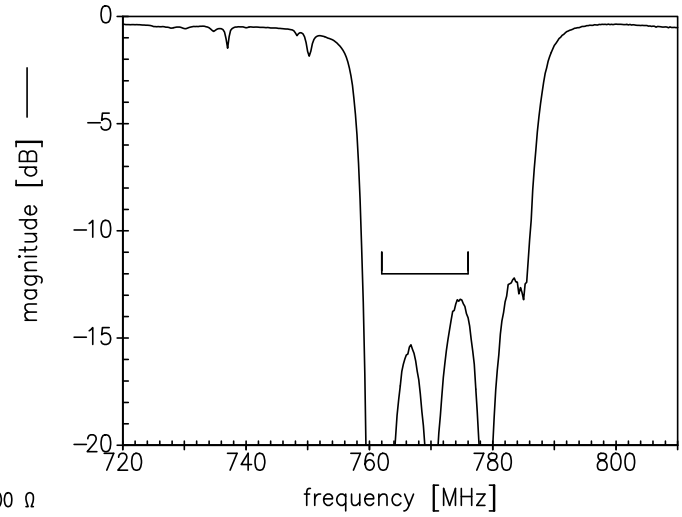
Transfer function filter 2 (S21, wideband)



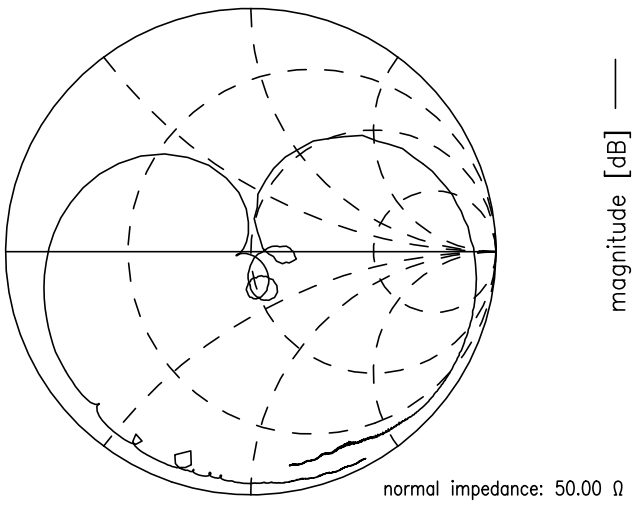
Smith charts

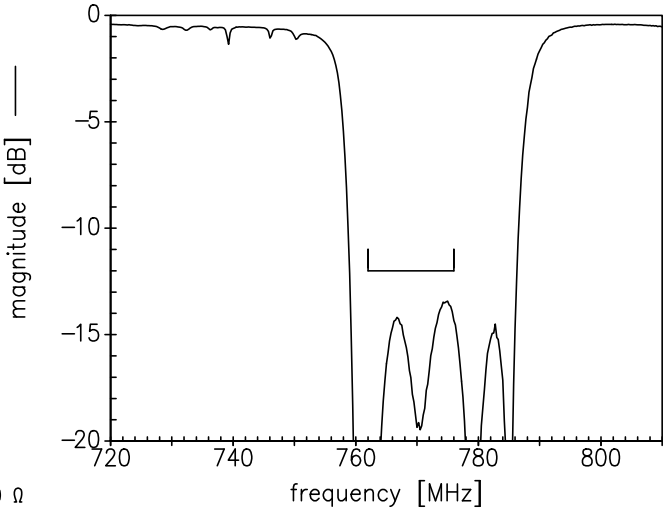
S_{11} function filter 2





S_{22} function filter 2





References

Type	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.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.

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