SAW Components

SAW Duplexer

Automotive telematics

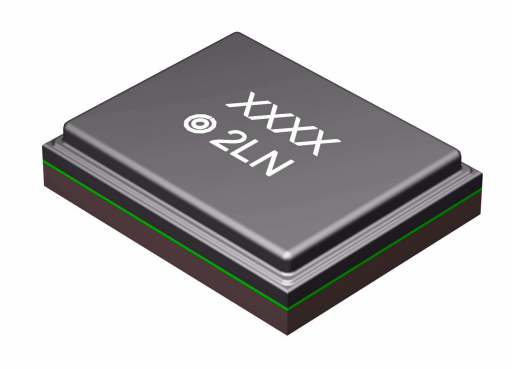
Series/type:	**B4414**
Ordering code:	**B39741B4414P810**
Date:	October 01, 2014
Version:	2.1

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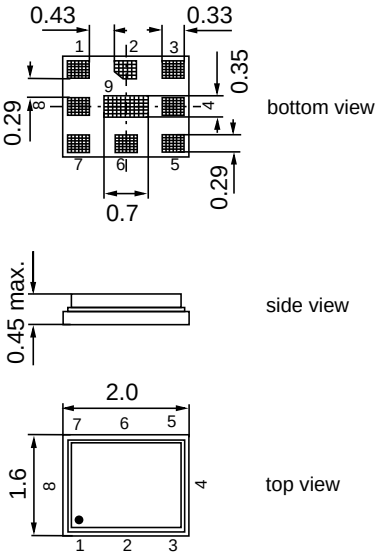
Application

- SAW duplexer for LTE Band 12/17 systems and 13 RX
- High out of band Rx-Tx isolation
- Low amplitude ripple
- Usable passband in TX 18 MHz
- Usable passband in RX 28 MHz



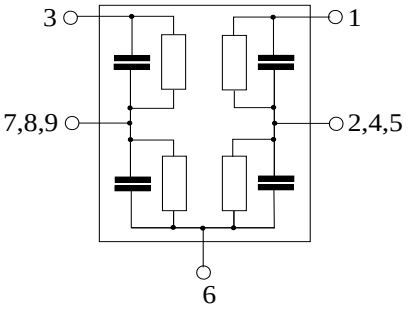
Features

- Package size 2.0 x 1.6 mm²
- Package height max. 0.45 mm
- RoHS compatible
- Approx. weight 0.005 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- AEC-Q200 qualified component family (operable temperature range –40˚C to +85˚C)
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



Pin configuration

- 3 TX Input
- 1 RX Output
- 6 Antenna
- 7, 8, 9 To be grounded
- 2, 4, 5 To be grounded



Characteristics

Temperature range for specification: T = –40 ˚C to +85 ˚C
ANT terminating impedance: Z_{ANT} = 50 Ω || 12 nH
RX terminating impedance: Z_{RX} = 50 Ω || 25 nH
TX terminating impedance: Z_{TX} = 50 Ω || 20 nH

Characteristics TX - ANT				min.	typ. @ 25˚C	max.	
Center frequency		f_C		—	707.0	—	MHz
Maximum insertion attenuation		α_{max}					
698.0 ... 716.0	MHz			—	1.9	3.0	dB
Amplitude ripple (p-p)		$\Delta\alpha$					
698.0 ... 716.0	MHz			—	1.0	1.9	dB
VSWR							
TX port 698.0 ... 716.0	MHz			—	1.8	2.1	
ANT port 698.0 ... 716.0	MHz			—	1.8	2.1	
Attenuation		α					
100.0 ... 680.0	MHz			30	35	—	dB
728.0 ... 760.0	MHz			45	49	—	dB
760.0 ... 787.0	MHz			41	44	—	dB
787.0 ... 824.0	MHz			26	33	—	dB
824.0 ... 894.0	MHz			32	36	—	dB
894.0 ... 1710.0	MHz			30	36	—	dB
1710.0 ... 1990.0	MHz			35	41	—	dB
1990.0 ... 2110.0	MHz			22	28	—	dB
2110.0 ... 2155.0	MHz			33	41	—	dB
2155.0 ... 2864.0	MHz			30	35	—	dB

Characteristics

Temperature range for specification: T = –40 ˚C to +85 ˚C
ANT terminating impedance: Z_{ANT} = 50 Ω || 12 nH
RX terminating impedance: Z_{RX} = 50 Ω || 25 nH
TX terminating impedance: Z_{TX} = 50 Ω || 20 nH

Characteristics RX - ANT					min.	typ. @ 25˚C	max.	
Center frequency				f_C	—	742.0	—	MHz
Maximum insertion attenuation				α_{max}				
	728.0	...	756.0	MHz	—	2.1	3.0	dB
Amplitude ripple (p-p)				$\Delta\alpha$				
	728.0	...	756.0	MHz	—	0.9	1.9	dB
VSWR								
RX port	728.0	...	756.0	MHz	—	1.8	2.1	
ANT port	728.0	...	756.0	MHz	—	1.7	2.1	
Attenuation				α				
	100.0	...	698.0	MHz	50	62	—	dB
	698.0	...	716.0	MHz	48	55	—	dB
	780.0	...	784.0	MHz	34	42	—	dB
	784.0	...	824.0	MHz	40	46	—	dB
	824.0	...	2864.0	MHz	40	50	—	dB

Characteristics

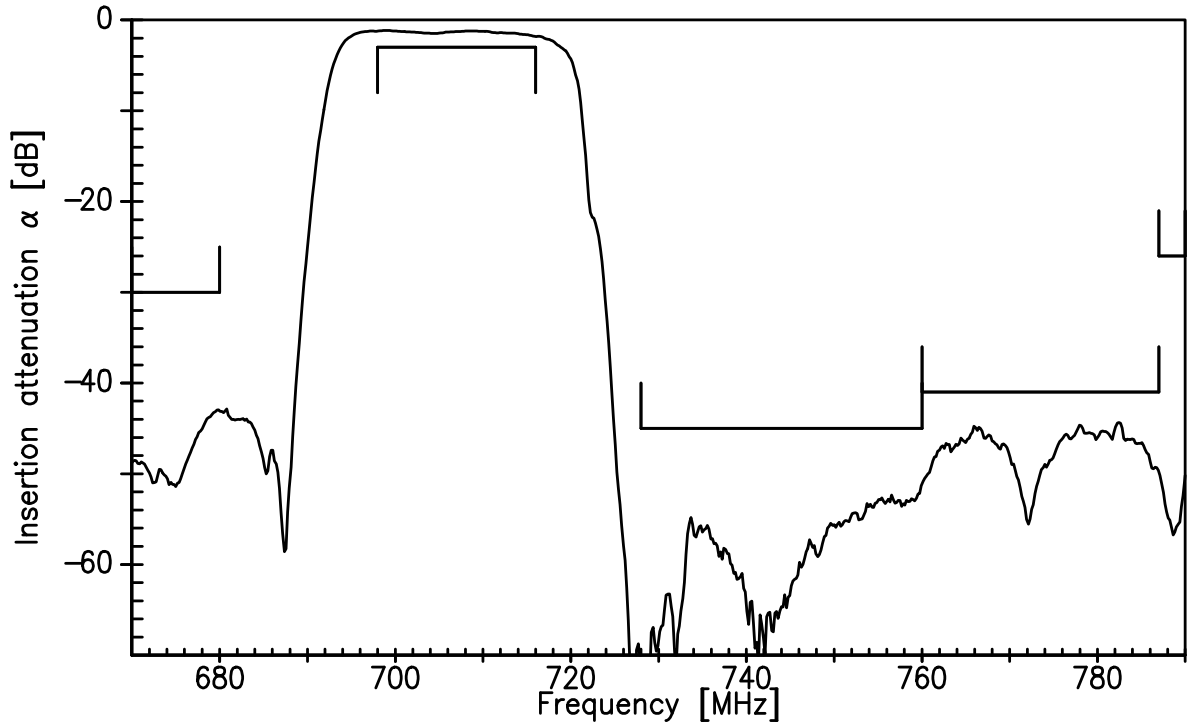
Temperature range for specification: T = –40 ˚C to +85 ˚C
ANT terminating impedance: Z_{ANT} = 50 Ω || 12 nH
RX terminating impedance: Z_{RX} = 50 Ω || 25 nH
TX terminating impedance: Z_{TX} = 50 Ω || 20 nH

Characteristics RX - TX		min.	typ. @ 25˚C	max.	
Isolation	α				
698.0 ... 716.0 MHz		47	58	—	dB
716.0 ... 728.0 MHz		40	47	—	dB
728.0 ... 756.0 MHz		47	53	—	dB

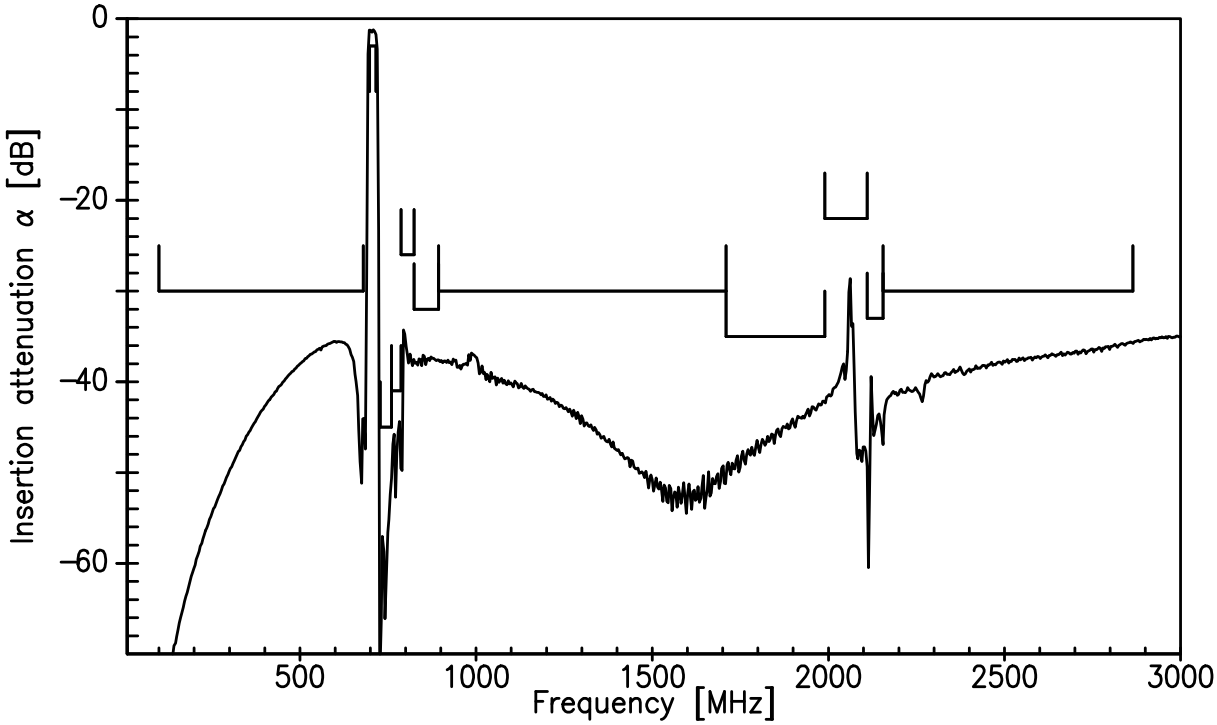
Maximum ratings

Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40 +85	˚C	
DC voltage	V_{DC}	0	V	
Input power at	P_{IN}			source and load impedance 50 Ω
698.0 ... 716.0 MHz		29	dBm	} continuous wave
728.0 ... 756.0 MHz		14	dBm	*T* = 55˚C, 5000 h

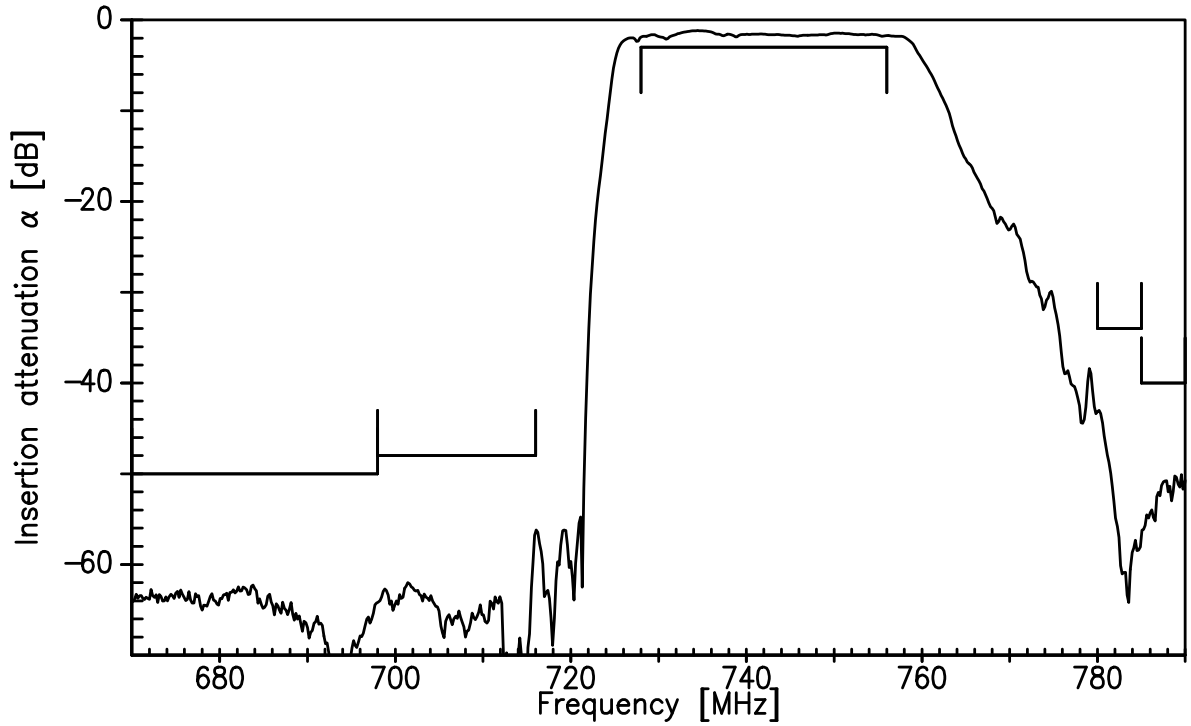
Frequency Response TX-ANT



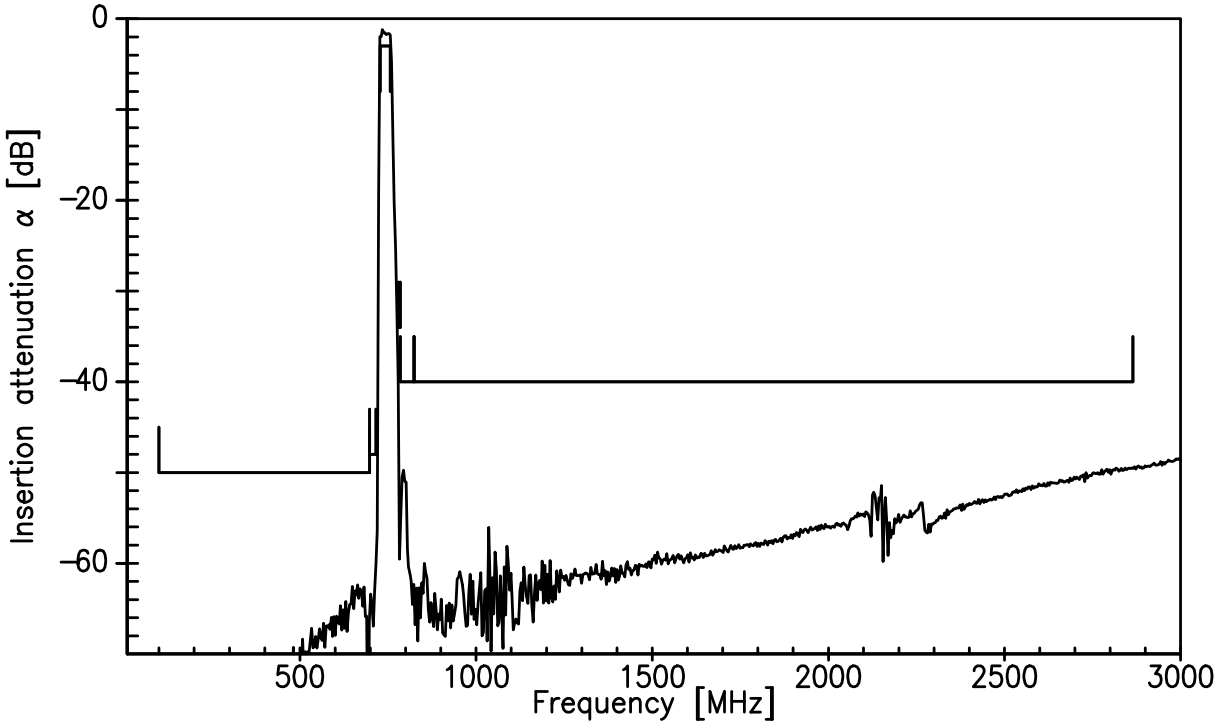
Frequency Response TX-ANT (wideband)



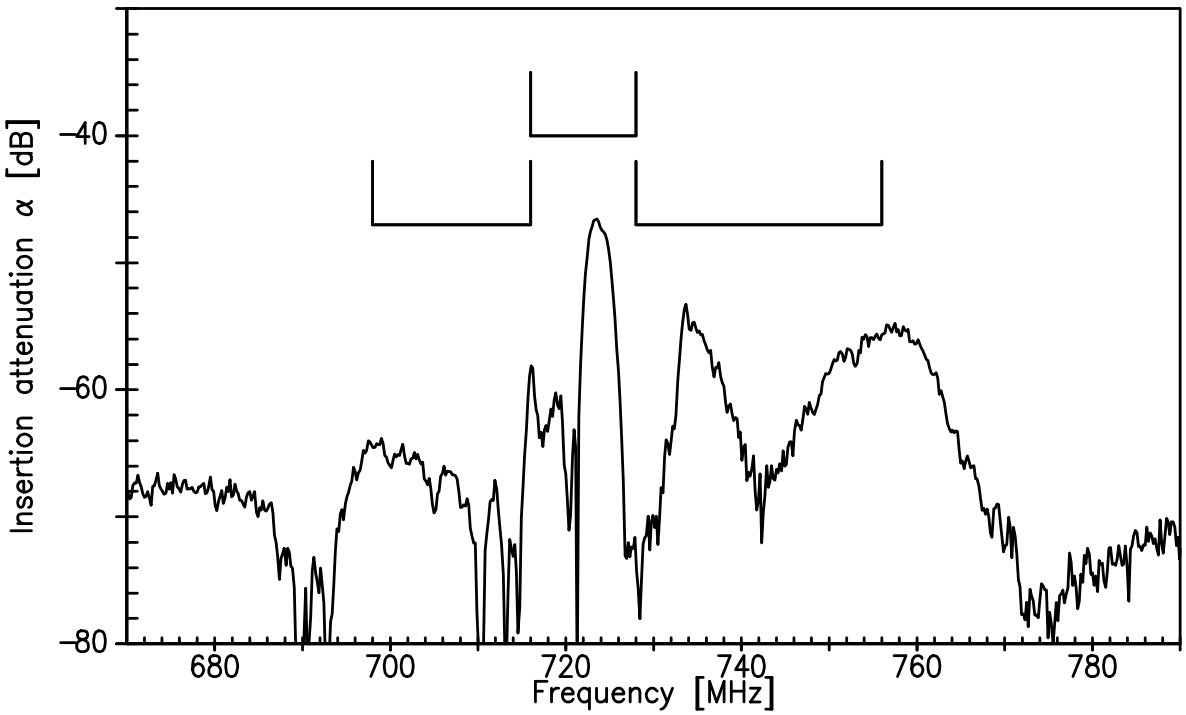
Frequency Response RX-ANT



Frequency Response RX-ANT (wideband)



Frequency Response TX-RX



References

Type	B4414
Ordering code	B39741B4414P810
Marking and package	C61157-A8-A37
Packaging	F61074-V8247-Z000
Date codes	L_1126
S-parameters	B4414_NB_UN.s3p, B4414_WB_UN.s3p 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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