

# SAW Components

Data Sheet X 7257 M





# SAW ComponentsX 7257 MBandpass Filter36,125 MHz

**Data Sheet** 

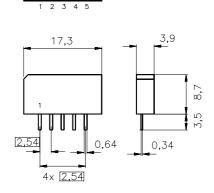


# Features

- TV IF filter
- Switchable between two bandwidths

# Terminals

■ Tinned CuFe alloy

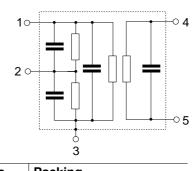


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#### Dimensions in mm, approx. weight 1,0 g

#### **Pin configuration**

- 1 Input
- 2 Switching input
- 3 Chip carrier ground
- 4 Output
- 5 Output



Туре	Ordering code	Marking and package according to	Packing according to
X 7257 M		C61157-A1-A15	F61074-V8067-Z000

#### **Maximum ratings**

Operable temperature range	T <sub>A</sub>	-25/+65	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	5	V	between any terminals
AC voltage	$V_{\rm pp}$	10	V	between any terminals



SAW Components	X 7257 M		
Bandpass Filter	36,125 MHz		
Data Sheet			
Characteristics of channel 1 (switching input pin 2 connected to ground)			

Reference temperature:

Reference temperature:	$T_{A} = 25 \degree C$
Terminating source impedance:	$Z_{\rm S} = 50 \Omega$
Terminating load impedance:	$Z_{L} = 2 \text{ k}\Omega \parallel 3 \text{ pF}$

$\begin{array}{c c c c c c c c c c c c c c c c c c c $				min.	typ.	max.	
following data Pass bandwidth $\alpha_{rel} \leq 3  dB$ $\alpha_{rel} \leq 3  dB$ $\beta_{30  dB}$ $\beta_{30  dB}$ $\beta_{30  dB}$ $\beta_{30  dB}$ $ 8,0$ $-$ MHz $\alpha_{rel} \leq 30  dB$ $\beta_{30  dB}$ $ 9,5$ $-$ MHz Relative attenuation $\alpha_{rel}$ $-0,2$ $1,0$ $2,2$ $dB$ $32,32$ MHz $-0,1$ $1,1$ $2,3$ $dB$ $32,13$ MHz $ 2,8$ $ dB$ $40,13$ MHz $ 3,2$ $ dB$ Lower sidelobe $25,00$ $$ $30,90$ MHz $34,0$ $42,0$ $ dB$ Upper sidelobe $42,00$ $$ $45,00$ MHz $33,0$ $39,0$ $ dB$ Reflected wave signal suppression $1,4 \ \mu s \dots 6,0 \ \mu s$ after main pulse $(\text{test pulse 250 ns, carrier frequency 36,125 MHz)$ Feedthrough signal suppression $1,3 \ \mu s \dots 1,2 \ \mu s$ before main pulse $(\text{test pulse 250 ns, carrier frequency 36,125 MHz)$ Group delay ripple $(p-p)$ $\Delta \tau$ $32,32 \dots 39,93 \ MHz$ $ 60$ $-$ ns Impedance at 36,125 MHz $\ln \mu t: \ Z_{IN} = R_{IN} \parallel C_{IN}$ $ 1,6 \parallel 16,0$ $ k\Omega \parallel$	Insertion attenuation	ı	α				
Pass bandwidth $\alpha_{rel} \leq 3  dB$ $B_{3dB}$ - $8,0$ -       MHz $\alpha_{rel} \leq 30  dB$ $B_{30dB}$ - $9,5$ -       MHz         Relative attenuation $\alpha_{rel}$ - $0,2,2$ dB $32,32$ MHz $-0,2$ $1,0$ $2,2$ dB $32,32$ MHz $-0,1$ $1,1$ $2,3$ dB $32,13$ MHz $ 2,8$ -       dB         Lower sidelobe $25,00$ $30,90$ MHz $34,0$ $42,0$ -         Lower sidelobe $25,00$ $30,90$ MHz $34,0$ $42,0$ -       dB         Upper sidelobe $42,00$ $45,00$ MHz $33,0$ $39,0$ -       dB         Reflected wave signal suppression $1,4 \ \mu s \dots 6,0 \ \mu s$ after main pulse $40,0$ $49,0$ -       dB         (test pulse 250 ns, carrier frequency $36,125$ MHz)       - $50,0$ -       dB         Group delay ripple (p-p) $\Delta \tau$ - $60$ -       ns $32,32 \dots 39,93$ MHz       - $60$ -       ns <t< td=""><td>Reference level for the</td><td>e 36,125 MH</td><td>lz</td><td>20,1</td><td>21,6</td><td>23,1</td><td>dB</td></t<>	Reference level for the	e 36,125 MH	lz	20,1	21,6	23,1	dB
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	following data						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Pass bandwidth						
Relative attenuation $\alpha_{rel}$ $-0,2$ 1,0       2,2       dB         32,32       MHz $-0,1$ 1,1       2,3       dB         32,13       MHz $-0,1$ 1,1       2,3       dB         40,13       MHz $-$ 2,8 $-$ dB         Lower sidelobe       25,00 $30,90$ MHz       34,0       42,0 $-$ dB         Upper sidelobe       42,00 $45,00$ MHz       33,0       39,0 $-$ dB         Reflected wave signal suppression       1,4 µs 6,0 µs after main pulse       40,0       49,0 $-$ dB         (test pulse 250 ns, carrier frequency 36,125 MHz)       -       50,0 $-$ dB         Group delay ripple (p-p) $\Delta \tau$ $-$ 60 $-$ ns         Impedance at 36,125 MHz $-$ 60 $-$ ns	α <sub>rel</sub> ≤3 dB		B <sub>3dB</sub>	_	8,0	_	MHz
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\alpha_{rel} \leq 30 \text{ dB}$		$B_{30dB}$		9,5	-	MHz
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Relative attenuation		$\alpha_{rel}$				
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		32,32 MH	2	- 0,2	1,0	2,2	dB
40,13 MHz       —       3,2       —       dB         Lower sidelobe       25,00 30,90 MHz       34,0       42,0       —       dB         Upper sidelobe       42,00 45,00 MHz       33,0       39,0       —       dB         Reflected wave signal suppression       40,0       49,0       —       dB         1,4 $\mu$ s 6,0 $\mu$ s after main pulse       40,0       49,0       —       dB         (test pulse 250 ns, carrier frequency 36,125 MHz)       40,0       49,0       —       dB         Feedthrough signal suppression       —       50,0       —       dB         1,3 $\mu$ s 1,2 $\mu$ s before main pulse       —       50,0       —       dB         (test pulse 250 ns, carrier frequency 36,125 MHz)       —       60       —       ns         Group delay ripple (p-p) $\Delta \tau$ —       60       —       ns         Impedance at 36,125 MHz       —       60       —       ns		33,93 MHz	Z	- 0,1	1,1	2,3	dB
Lower sidelobe 25,00 30,90 MHz $34,0$ $42,0$ — dB Upper sidelobe $42,00$ $45,00$ MHz $33,0$ $39,0$ — dB <b>Reflected wave signal suppression</b> $1,4 \ \mu s \dots 6,0 \ \mu s$ after main pulse $40,0$ $49,0$ — dB (test pulse 250 ns, carrier frequency $36,125$ MHz) $40,0$ $49,0$ — dB <b>Feedthrough signal suppression</b> $1,3 \ \mu s \dots 1,2 \ \mu s$ before main pulse $(-50,0)$ — dB (test pulse 250 ns, carrier frequency $36,125$ MHz) $-50,0$ — dB (test pulse 250 ns, carrier frequency $36,125$ MHz) $-50,0$ — ms <b>Group delay ripple</b> $(p-p)$ $\Delta \tau$ $-60$ — ns <b>Impedance</b> at $36,125$ MHz $-60$ — ns		32,13 MHz	Z	—	2,8	-	dB
Upper sidelobe42,00 45,00 MHz33,0 $39,0$ dBReflected wave signal suppression 1,4 µs 6,0 µs after main pulse (test pulse 250 ns, carrier frequency 36,125 MHz)40,049,0dBFeedthrough signal suppression 1,3 µs 1,2 µs before main pulse (test pulse 250 ns, carrier frequency 36,125 MHz)50,0dBGroup delay ripple (p-p) $32,32 39,93$ MHz $\Delta \tau$ $32,32 39,93$ MHz60nsImpedance at 36,125 MHz $Input: Z_{IN} = R_{IN} \parallel C_{IN}$ 1,6 \parallel 16,0 $k\Omega \parallel$		40,13 MHz	Z	—	3,2	-	dB
Reflected wave signal suppression 1,4 µs 6,0 µs after main pulse (test pulse 250 ns, carrier frequency 36,125 MHz) $40,0$ $49,0$ $$ $dB$ Feedthrough signal suppression 1,3 µs 1,2 µs before main pulse (test pulse 250 ns, carrier frequency 36,125 MHz) $$ $50,0$ $$ $dB$ Group delay ripple (p-p) $32,32 39,93$ MHz $$ $60$ $$ nsImpedance at 36,125 MHz Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ $$ $1,6 \parallel 16,0$ $$ $k\Omega \parallel$	Lower sidelobe	25,00 30,90 MHz	Z	34,0	42,0	_	dB
1,4 $\mu$ s 6,0 $\mu$ s after main pulse40,049,0—dB(test pulse 250 ns, carrier frequency 36,125 MHz)—50,0—dBFeedthrough signal suppression1,3 $\mu$ s 1,2 $\mu$ s before main pulse—50,0—dB(test pulse 250 ns, carrier frequency 36,125 MHz)—50,0—dBGroup delay ripple (p-p) $\Delta \tau$ 32,32 39,93 MHz—60—nsImpedance at 36,125 MHzInput: $Z_{IN} = R_{IN} \parallel C_{IN}$ —1,6 \parallel 16,0— $K\Omega \parallel$	Upper sidelobe	42,00 45,00 MHz	2	33,0	39,0	-	dB
(test pulse 250 ns, carrier frequency 36,125 MHz)Feedthrough signal suppression 1,3 µs 1,2 µs before main pulse (test pulse 250 ns, carrier frequency 36,125 MHz)—50,0—dBGroup delay ripple (p-p) $32,32 39,93 MHz$ —60—nsImpedance at 36,125 MHz 	Reflected wave sign	al suppression					
Feedthrough signal suppression 1,3 µs 1,2 µs before main pulse (test pulse 250 ns, carrier frequency 36,125 MHz)—50,0—dBGroup delay ripple (p-p) $32,32 39,93$ MHz—60—nsImpedance at 36,125 MHz Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ —1,6 \parallel 16,0—k $\Omega \parallel$	1,4 μs 6,0 μs after ι	main pulse		40,0	49,0	-	dB
1,3 µs1,2 µs before main pulse-50,0-dB(test pulse 250 ns, carrier frequency 36,125 MHz) $\Delta \tau$ -60-nsGroup delay ripple (p-p) $\Delta \tau$ -60-ns32,3239,93 MHz-60-nsImpedance at 36,125 MHzInput: $Z_{IN} = R_{IN} \parallel C_{IN}$ -1,6 \parallel 16,0-k $\Omega \parallel$	(test pulse 250 ns, ca	rrier frequency 36,125 MH	z)				
(test pulse 250 ns, carrier frequency 36,125 MHz) $\Delta \tau$ Group delay ripple (p-p) $\Delta \tau$ 32,32 39,93 MHz-60-Impedance at 36,125 MHzInput: $Z_{IN} = R_{IN} \parallel C_{IN}$ -1,6 \parallel 16,0- $k\Omega \parallel$	Feedthrough signal	suppression					
Group delay ripple (p-p) $\Delta \tau$ -       60       -       ns         Impedance at 36,125 MHz       -       60       -       ns         Imput: $Z_{IN} = R_{IN} \parallel C_{IN}$ -       1,6 \parallel 16,0       -       k $\Omega \parallel$	1,3 μs 1,2 μs before	e main pulse		—	50,0	_	dB
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	(test pulse 250 ns, ca	rrier frequency 36,125 MH	z)				
Impedance at 36,125 MHz Input: $Z_{IN} = R_{IN}    C_{IN}$ — 1,6   16,0 — $k\Omega   $	Group delay ripple (	р-р)	$\Delta \tau$				
Input: $Z_{IN} = R_{IN}    C_{IN} - 1,6    16,0 - k\Omega   $		32,32 39,93 MHz	Z		60		ns
	•						
Output: $Z_{OUT} = R_{OUT}    C_{OUT}    =    2,4    4,3    -    k\Omega   $				_		-	kΩ    pl
	Outp	out: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$			2,4    4,3	-	k $\Omega \parallel p$
Temperature coefficient of frequency TC <sub>f</sub> 72 - ppm/	Temperature coeffic	ient of frequency	TC <sub>f</sub>	—	-72	-	ppm/K



SAW Components				X 7	257 M
Bandpass Filter				36,12	5 MHz
Data Sheet					
Characteristics of channel 2 (switching	input pin 2 c	onnected t	o pin 1)		
Reference temperature: Terminating source impedance: Terminating load impedance:	$T_{A} = 25^{\circ}$ $Z_{S} = 50 \Omega$ $Z_{L} = 2 k\Omega$	2			
		min.	typ.	max.	

Insertion attenuation	00 405 MI	α	00.5	00.0	00 5	
Reference level for the following data	36,125 MH	IZ	20,5	22,0	23,5	dB
Pass bandwidth						
α <sub>rel</sub> ≤3 dB		$B_{3dB}$	_	6,0	_	MHz
α <sub>rel</sub> ≤30 dB		B <sub>30dB</sub>	_	7,7		MHz
Relative attenuation		$\alpha_{rel}$				
	33,59 MHz	Z	- 1,2	0,0	1,2	dB
	38,65 MHz	Z	- 1,2	0,0	1,2	dB
	33,12 MHz	Z	_	2,7	_	dB
	39,12 MHz	<u>z</u>	_	2,7	_	dB
Lower sidelobe	25,00 32,00 MHz	<u>z</u>	34,0	40,0	_	dB
Upper sidelobe	40,40 42,50 MHz	Z	27,0	33,0	_	dB
	42,50 45,00 MHz	<u>z</u>	33,0	39,0		dB
Reflected wave signal	suppression					
1,4 μs 6,0 μs after ma	iin pulse		40,0	50,0	_	dB
(test pulse 250 ns, carrie	er frequency 36,125 MH	z)				
Feedthrough signal su	ppression					
1,3 μs 1,2 μs before n	nain pulse		_	50,0	_	dB
(test pulse 250 ns, carrie	er frequency 36,125 MH	z)				
Group delay ripple (p-p	))	$\Delta \tau$				
	33,59 38,65 MHz	Z		50		ns
Impedance at 36,125 M	Hz					
	$Z_{\rm IN} = R_{\rm IN} \parallel C_{\rm IN}$		-	1,6   17,0	—	$k\Omega \parallel pF$
Output:	$Z_{OUT} = R_{OUT} \parallel C_{OUT}$		-	2,4    4,3		kΩ    pF
Temperature coefficier	nt of frequency	TC <sub>f</sub>	—	-72	_	ppm/K



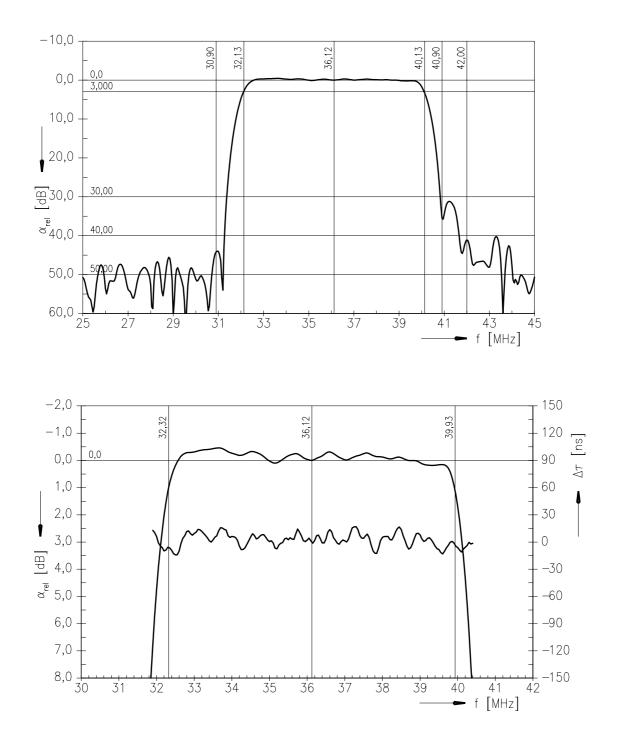
X 7257 M

36,125 MHz

#### Bandpass Filter

Data Sheet

#### Frequency response in channel 1



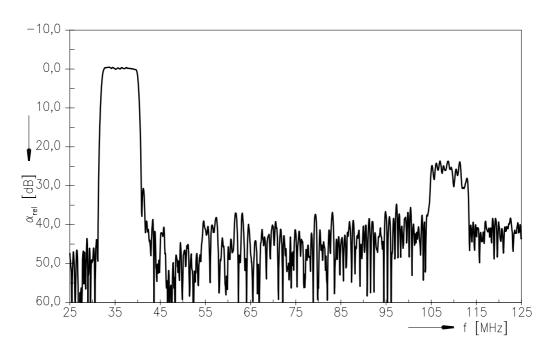
Jan 12, 2005



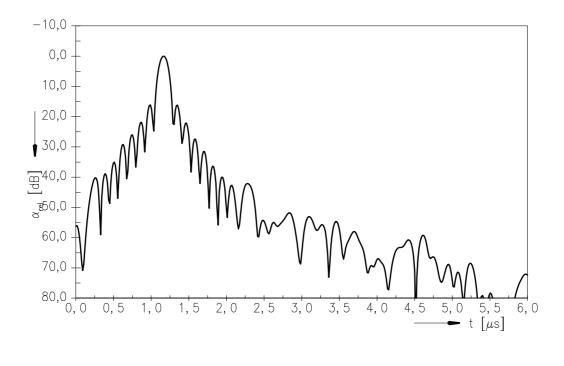
SAW Components	X 7257 M
Bandpass Filter	36,125 MHz
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Data Sheet

# Frequency response of channel 1



Time domain response of channel 1



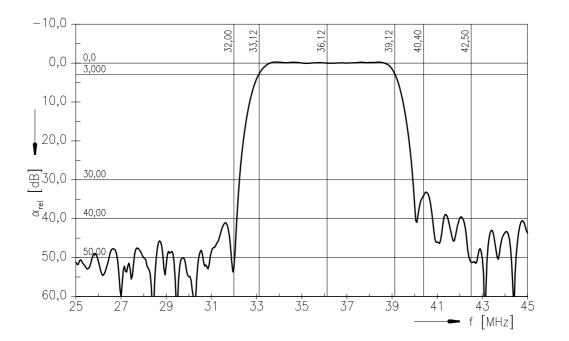
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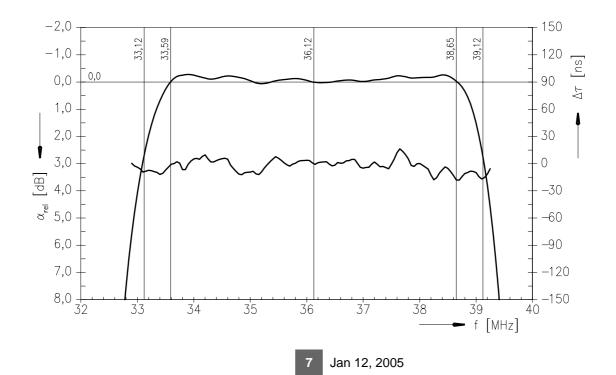


#### Bandpass Filter

Data Sheet

# Frequency response in channel 2





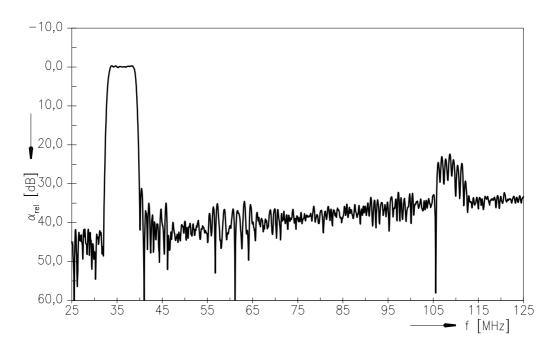
X 7257 M 36,125 MHz



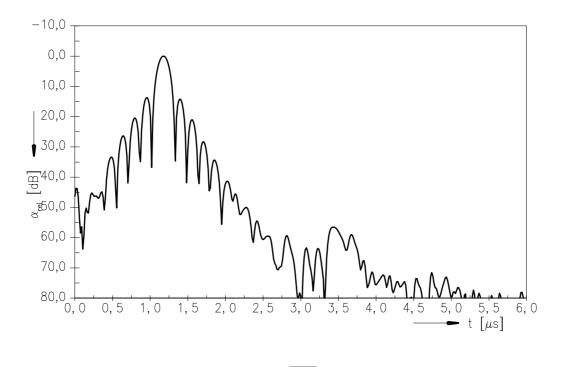
SAW Components	X 7257 M
Bandpass Filter	36,125 MHz

Data Sheet

# Frequency response of channel 2



Time domain response of channel 2



Jan 12, 2005



SAW Components	X 7257 M
Bandpass Filter	36,125 MHz

**Data Sheet** 

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