



SAW Components

SAW bandpass filter

Bandpass filter for TV applications

Series/type:	X 7251 M
Ordering code:	B39362-X7251-M100
Date:	September 17, 2009
Version:	2.0



SAW Components

X 7251 M

SAW bandpass filter

36.17 MHz

Data Sheet

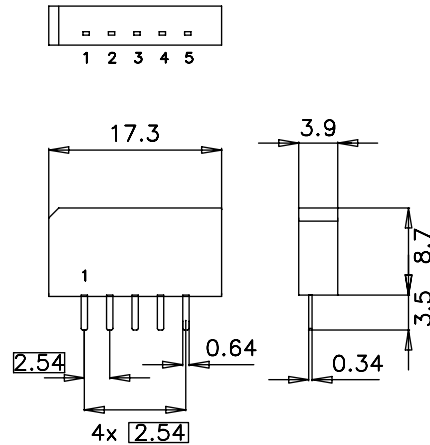
Application

- TV IF filter
- Switchable between usable bandwidths 8.0MHz and 7.0MHz
- Constant group delay



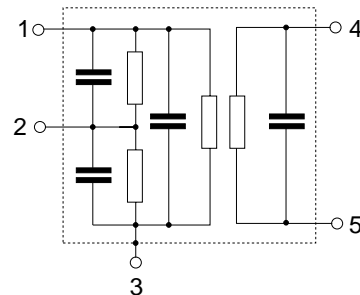
Features

- Plastic package **SIP5K**
- Approximate weight 1.0 g
- RoHS compatible
- Tinned CuFe alloy terminals



Pin configuration

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



Please read *cautions and warnings and important notes* at the end of this document.


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36.17 MHz
Data Sheet
Characteristics of channel 1 (switching pin 2 connected to ground)

Reference temperature: $T_A = 25\text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 2\ \text{k}\Omega \parallel 3\ \text{pF}$

		min.	typ. @ 25 °C	max.	
Insertion attenuation					
	α				
Reference level for the following data	36.17 MHz	19.7	21.2	22.7	dB
Pass bandwidth					
$\alpha_{\text{rel}} \leq 1.5\ \text{dB}$	$B_{1.5\text{dB}}$	7.3	7.6	7.9	MHz
$\alpha_{\text{rel}} \leq 3\ \text{dB}$	$B_{3\text{dB}}$	7.7	8.0	8.3	MHz
$\alpha_{\text{rel}} \leq 15\ \text{dB}$	$B_{15\text{dB}}$	8.7	9.0	9.3	MHz
$\alpha_{\text{rel}} \leq 30\ \text{dB}$	$B_{30\text{dB}}$	9.1	9.7	10.3	MHz
Relative attenuation					
	α_{rel}				
Lower sidelobe	25.00 ... 31.15 MHz	34.0	40.0	—	dB
Upper sidelobe	41.15 ... 42.00 MHz	29.0	36.0	—	dB
	42.00 ... 45.00 MHz	37.0	43.0	—	dB
Reflected wave signal suppression					
1.6 μs ... 6.0 μs after main pulse (test pulse 250 ns, carrier frequency 36.17 MHz)		42.0	50.0	—	dB
Feedthrough signal suppression					
1.2 μs ... 1.1 μs before main pulse (test pulse 250 ns, carrier frequency 36.17 MHz)		—	50.0	—	dB
Group delay ripple (p-p)					
	$\Delta\tau$				
	32.25 ... 40.05 MHz	—	50	—	ns
Impedance at 36.17 MHz					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	1.9 \parallel 14.7	—	$\text{k}\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	3.1 \parallel 3.6	—	$\text{k}\Omega \parallel \text{pF}$
Temperature coefficient of frequency					
	TC_f	—	-72	—	ppm/K



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Characteristics of channel 2 (switching pin 2 connected to pin 1)

Reference temperature: $T_A = 25 (45) \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$
 Terminating load impedance: $Z_L = 2 \text{ k}\Omega \parallel 3 \text{ pF}$

		min.	typ. @ 25 °C	max.	
Insertion attenuation	α				
Reference level for the following data	36.17 MHz	19.4	20.9	22.4	dB
Pass bandwidth					
$\alpha_{\text{rel}} \leq 1.5 \text{ dB}$	$B_{1.5\text{dB}}$	6.4	6.7	7.0	MHz
$\alpha_{\text{rel}} \leq 3 \text{ dB}$	$B_{3\text{dB}}$	6.7	7.0	7.3	MHz
$\alpha_{\text{rel}} \leq 15 \text{ dB}$	$B_{15\text{dB}}$	7.8	8.1	8.4	MHz
$\alpha_{\text{rel}} \leq 30 \text{ dB}$	$B_{30\text{dB}}$	8.1	8.7	9.3	MHz
Relative attenuation	α_{rel}				
Lower sidelobe	25.00 ... 31.55 MHz	33.0	39.0	—	dB
Upper sidelobe	40.75 ... 45.00 MHz	32.0	38.0	—	dB
Reflected wave signal suppression					
1.6 μs ... 6.0 μs after main pulse (test pulse 250 ns, carrier frequency 36.17 MHz)		42.0	50.0	—	dB
Feedthrough signal suppression					
1.2 μs ... 1.1 μs before main pulse (test pulse 250 ns, carrier frequency 36.17 MHz)		—	50.0	—	dB
Group delay ripple (p-p)	$\Delta\tau$				
32.75 ... 39.55 MHz		—	50	—	ns
Impedance at 36.17 MHz					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	1.9 \parallel 15.9	—	$\text{k}\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	3.1 \parallel 3.6	—	$\text{k}\Omega \parallel \text{pF}$
Temperature coefficient of frequency	TC_f	—	-72	—	ppm/K



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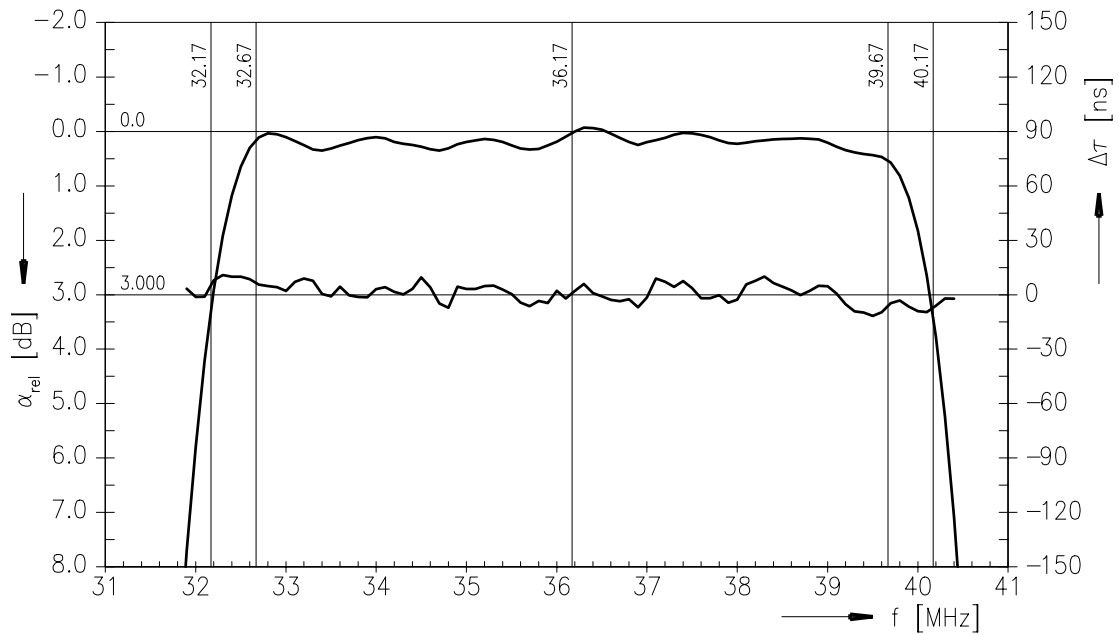
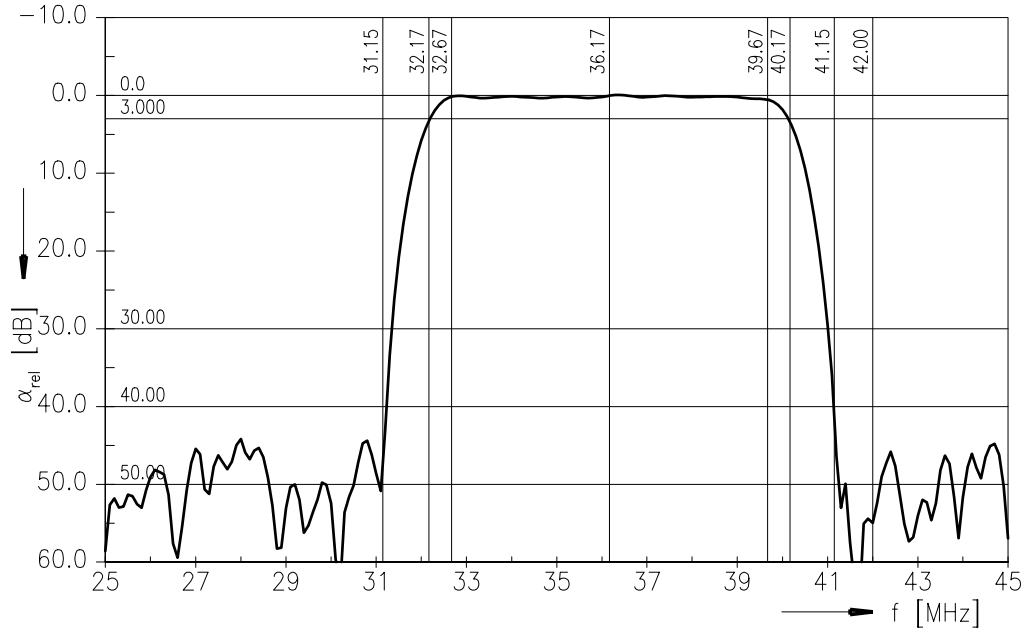
Maximum ratings

Operable temperature range	T	-25 / +65	°C	
Storage temperature range	T _{stg}	-40 / +85	°C	
DC voltage	V _{DC}	5	V	between any terminals
AC voltage	V _{pp}	10	V	between any terminals



Data Sheet

Frequency response of channel 1





SAW Components

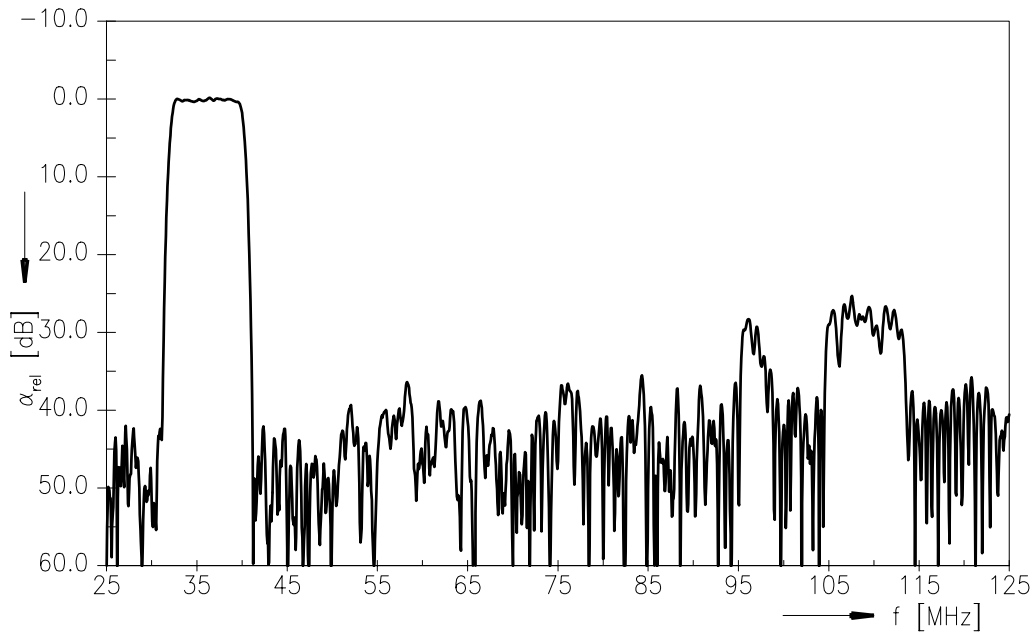
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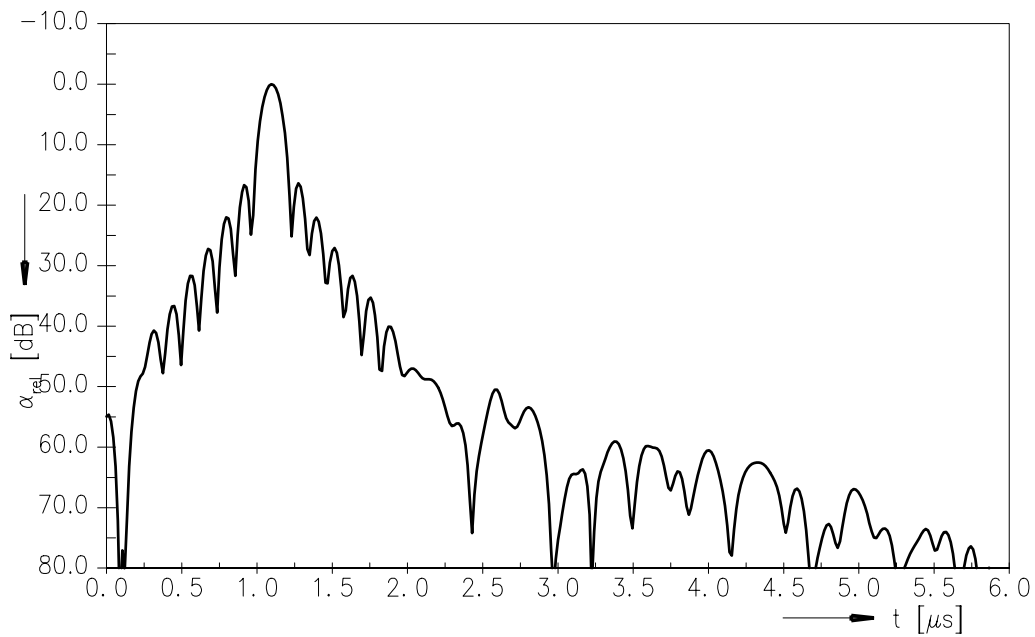
36.17 MHz

Data Sheet

Frequency response of channel 1



Time domain response of channel 1



Please read *cautions and warnings and important notes* at the end of this document.



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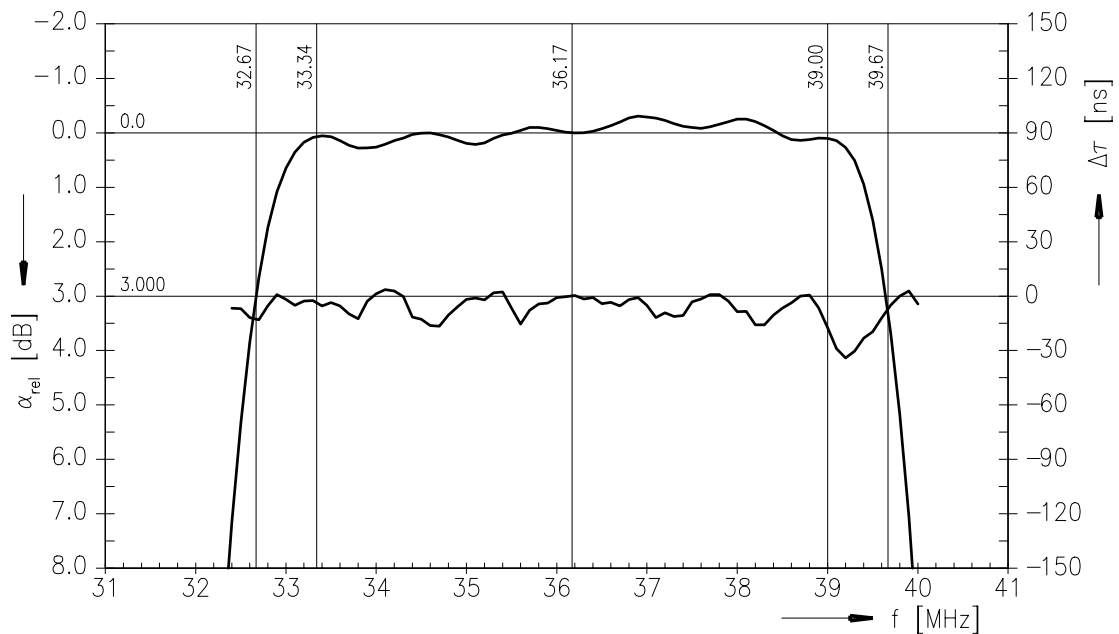
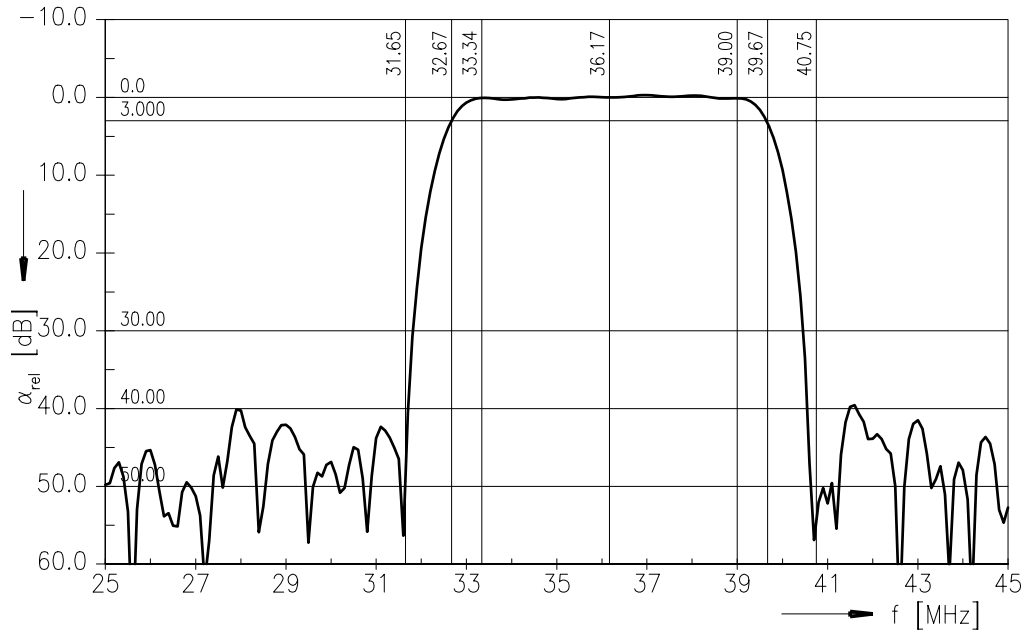
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Data Sheet

Frequency response of channel 2



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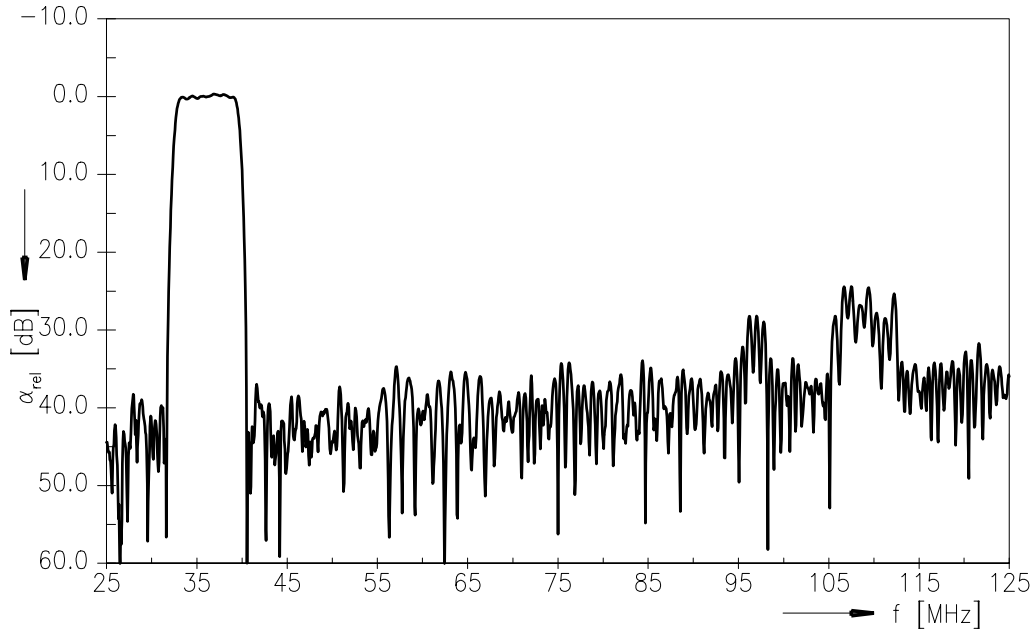
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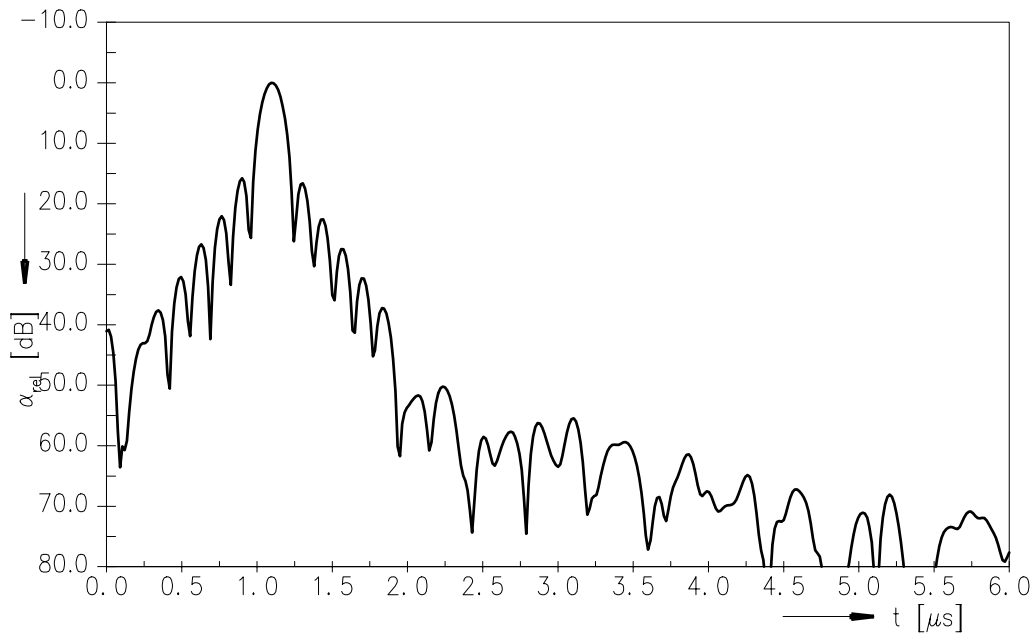
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Data Sheet

Frequency response of channel 2



Time domain response of channel 2



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References

Type	X 7251 M
Ordering code	B39362-X7251-M100
Marking and package	C61157-A1-A15
Packaging	F61074-V8067-Z000
Date codes	L_1126
S-parameters	X7251M_NB.s4p
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

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