



SAW Components

Data Sheet B3663

Data Sheet

A large, stylized, 3D-rendered graphic of the word "EPCOS" in a light gray, sans-serif font. The letters are tilted and appear to be floating or emerging from a dark, textured background that resembles a globe or a complex circuit board. The overall effect is a sense of depth and modernity.



SAW Components	B3663
Low-Loss Filter	140,01 MHz

Data Sheet

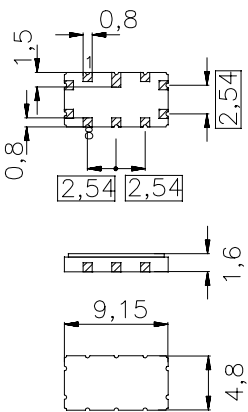
Ceramic SMD package QCC10B

Features

- Low-loss IF filter
- Ceramic SMD package
- Balanced or unbalanced operation possible
- Low insertion attenuation, high selectivity

Terminals

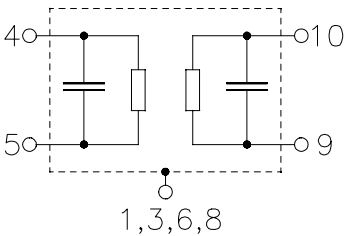
- Gold-plated



Dimensions in mm, approx. weight 0,23 g

Pin configuration

4, 5	Input
9,10	Output
1,3,6,8	Case ground
2,7	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B3663	B39141-B3663-Z710	C61157-A7-A49	F61064-V8035-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30/+ 80	°C
Storage temperature range	T_{stg}	- 40/+ 85	°C
DC voltage	V_{DC}	0	V
Source power	P_s	10	dBm



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Characteristics

Operating temperature range:

$T = -10 \dots +80 \text{ }^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50 \text{ } \Omega$ unbalanced and matching network

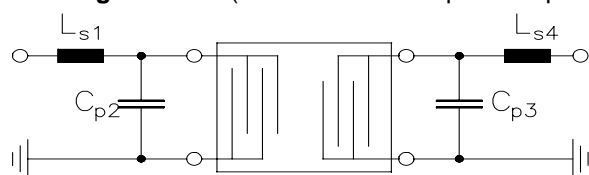
Terminating load impedance:

$Z_L = 50 \text{ } \Omega$ unbalanced and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	140,010	—	MHz
Minimum insertion loss	α_{\min}	—	3,7	5,5	dB
3dB bandwidth		30	73	—	kHz
Amplitude variation (p-p) $f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$	$\Delta\alpha$	—	0,3	3,0	dB
Amplitude ripple (peak to adjacent valley) $f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$	$\Delta\alpha$	—	0,0	0,5	dB
Absolute group delay (at f_N)	τ	—	11	15	μs
Group delay ripple (p-p) $f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$	$\Delta\tau$	—	2	6	μs
Relative attenuation (relative to α_{\min}) $f_N \pm 60 \text{ kHz}$	α_{rel}	4	20	—	dB
$f_N \pm 120 \text{ kHz}$		25	45	—	dB
$f_N \pm 210 \text{ kHz}$		45	67	—	dB
$f_N - 1 \text{ MHz}$		68	73	—	dB
$f_N + 1 \text{ MHz}$		48	68	—	dB
Temperature coefficient of frequency ¹⁾	TC_f	—	-0,036	—	ppm/K ²
Turnover temperature	T_0	—	35	—	$^{\circ}\text{C}$

¹⁾ Temperature dependance of f_c : $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

Matching network (element values depend on pcb layout, optimized for test board)



$L_{s1} = 180 \text{ nH}$ $C_{p2} = 3,3 \text{ pF}$ $C_{p3} = 2,7 \text{ pF}$ $L_{s4} = 180 \text{ nH}$



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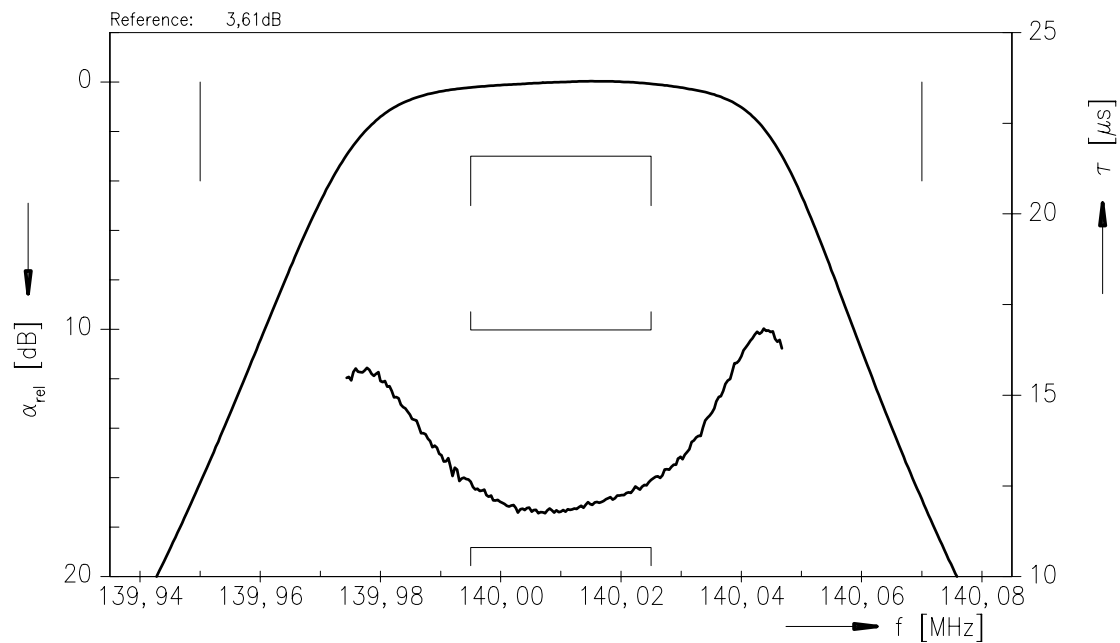
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Low-Loss Filter

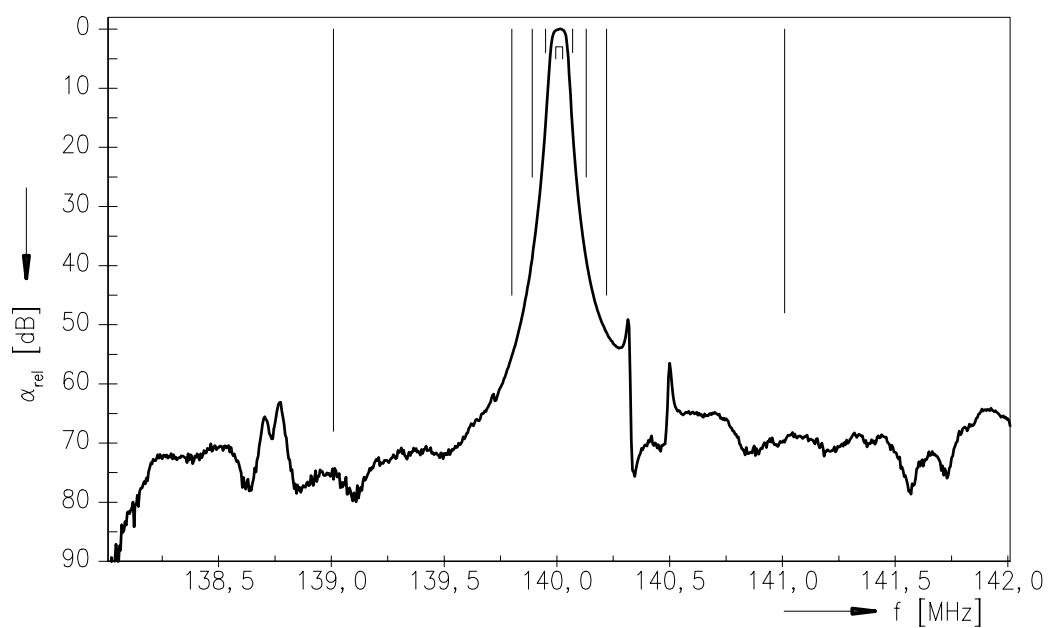
140,01 MHz

Data Sheet

Frequency response



Frequency response





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Low-Loss Filter

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Characteristics

Operating temperature range:

$T = -10 \dots +80 \text{ }^{\circ}\text{C}$

Terminating source impedance:

$Z_S = 50 \text{ } \Omega$ unbalanced and matching network

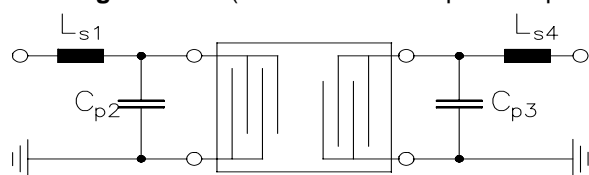
Terminating load impedance:

$Z_L = 50 \text{ } \Omega$ unbalanced and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	140,010	—	MHz
Minimum insertion loss	α_{\min}	—	3,7	5,5	dB
3dB bandwidth		30	78	—	kHz
Amplitude variation (p-p) $f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$	$\Delta\alpha$	—	0,3	3,0	dB
Amplitude ripple (peak to adjacent valley) $f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$	$\Delta\alpha$	—	0,2	0,8	dB
Absolute group delay (at f_N)	τ	—	11	15	μs
Group delay ripple (p-p) $f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$	$\Delta\tau$	—	2	8	μs
Relative attenuation (relative to α_{\min}) $f_N \pm 60 \text{ kHz}$	α_{rel}	2	20	—	dB
$f_N \pm 120 \text{ kHz}$		25	45	—	dB
$f_N \pm 210 \text{ kHz}$		45	67	—	dB
$f_N - 1 \text{ MHz}$		68	73	—	dB
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Temperature coefficient of frequency ¹⁾	TC_f	—	-0,036	—	ppm/K ²
Turnover temperature	T_0	—	35	—	$^{\circ}\text{C}$

¹⁾ Temperature dependance of f_c : $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

Matching network (element values depend on pcb layout)



$L_{s1} = 200 \text{ nH}$ $C_{p2} = 3,3 \text{ pF}$ $C_{p3} = 3,3 \text{ pF}$ $L_{s4} = 200 \text{ nH}$



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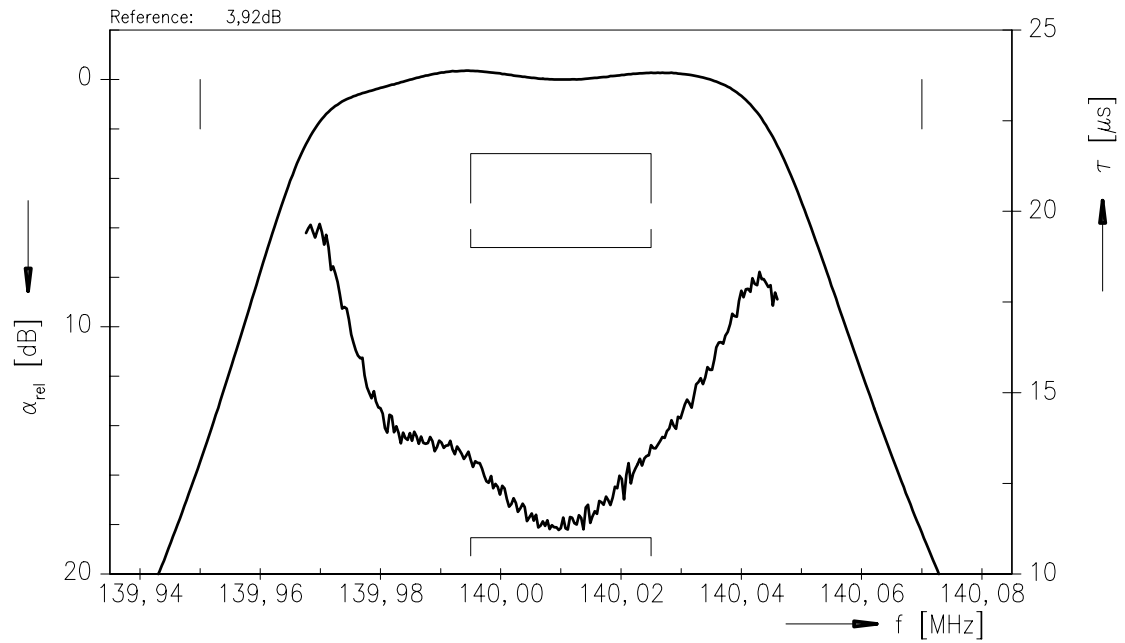
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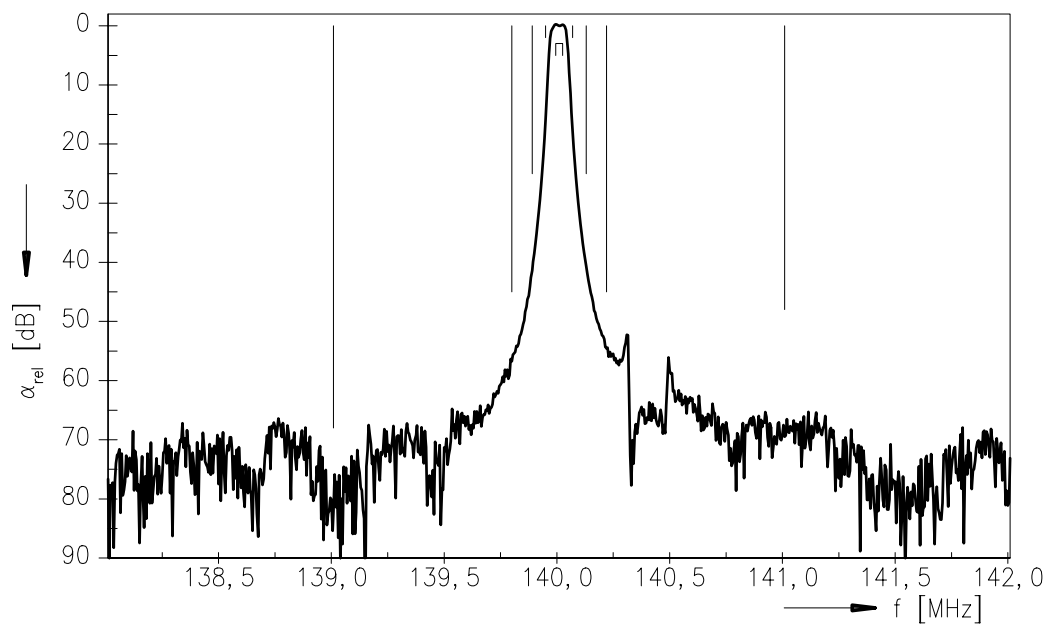
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Frequency response



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