



SAW Components

Data Sheet B3853





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B3853

Low-Loss Filter

141,0 MHz

Data Sheet

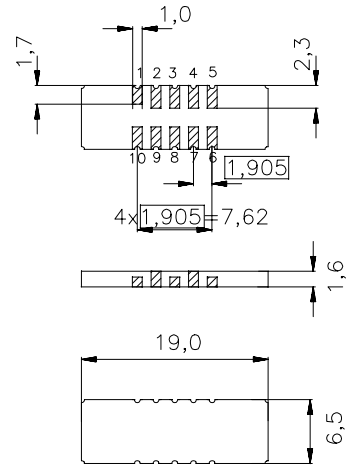
Features

- Low-loss IF filter for CDMA base station
- Temperature stable
- Ceramic SMD package
- Unbalanced or balanced operation

Terminals

- Gold plated

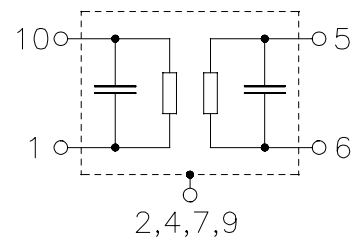
Ceramic package DCC18



Dimensions in mm, approx. weight 0,8 g

Pin configuration

- | | |
|------------|----------------------------------|
| 1 | Input or balanced input |
| 10 | Input ground or balanced input |
| 6 | Output or balanced output |
| 5 | Output ground or balanced output |
| 3, 8 | Ground |
| 2, 4, 7, 9 | Case ground |



Type	Ordering code	Marking and Package according to	Packing according to
B3853	B39141-B3853-U210	C61157-A7-A54	F61074-V8166-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	-40 / +85	°C	
Storage temperature range	T_{stg}	-40 / +85	°C	
DC voltage	V_{DC}	5	V	
Source power	P_s	10	dBm	


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Characteristics

Operating temperature range: $T = 0$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$ and external matching network
 Terminating load impedance: $Z_L = 50 \Omega$ and external matching network

			min.	typ.	max.	
Nominal frequency	f_N		—	141,0	—	MHz
Minimum insertion attenuation	α_N		—	11,0	13,0	dB
3,75 dB bandwidth	$\alpha_{rel} \leq 3,75\text{dB}$	$B_{3,75\text{dB}}$	1,18	1,32	—	MHz
Amplitude ripple (p-p)	$f_N \pm 525$ kHz	$\Delta\alpha$	—	0,2	1,0	dB
Phase Linearity (rms)	$f_N \pm 630$ kHz	$\Delta\phi$	—	1,0	2,0	deg
Absolute group delay	@ f_N	τ	—	2,75	—	μs
Group delay ripple (p-p)	$f_N \pm 525$ kHz	$\Delta\tau$	—	100	300	ns
Relative attenuation (relative to α_N)		α_{rel}				
50 MHz ... 120 MHz			50	60	—	dB
120 MHz ... $f_N - 1350$ kHz			45	52	—	dB
$f_N - 1350$ kHz ... $f_N - 1250$ kHz			41	45	—	dB
$f_N + 1250$ kHz ... $f_N + 1750$ kHz			41	45	—	dB
$f_N + 1750$ kHz ... 175 MHz ¹⁾			45	48	—	dB
175 MHz ... 500 MHz			60	70	—	dB
Return loss	$f_N \pm 525$ kHz		10	15	—	dB
3rd-order intercept point		$IP3$	40	45	—	dB
Temperature coefficient of frequency ²⁾		TC_f	—	-0,036	—	ppm/K ²
Turnover temperature		T_0	—	42,5	—	°C

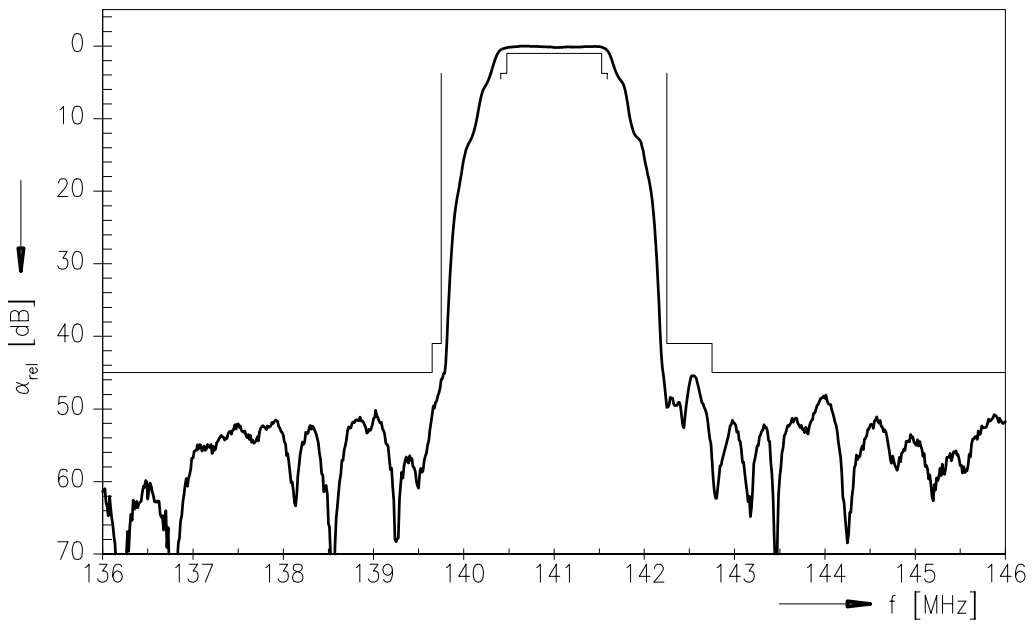
¹⁾ Except for two peaks around 144 and 146 MHz with typically 45dB

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

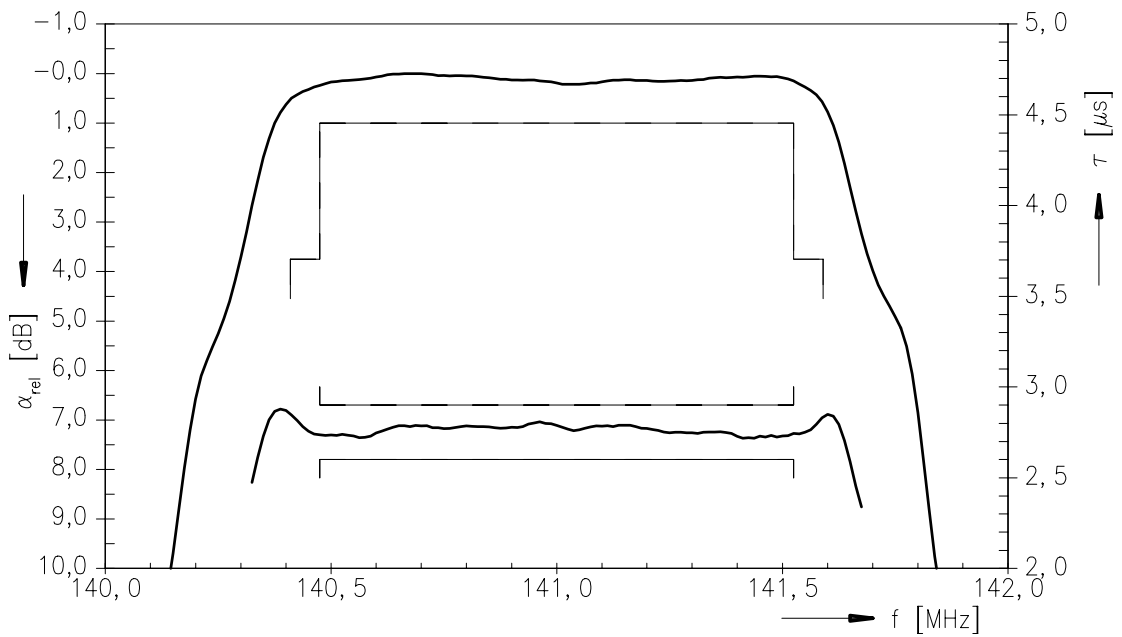


Data Sheet

Normalized frequency response



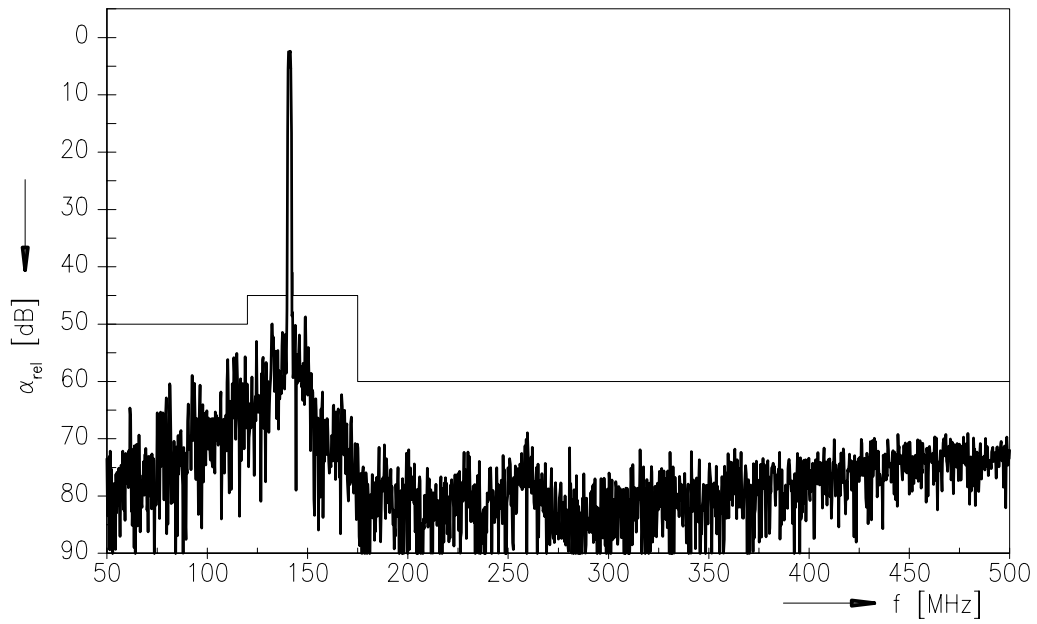
Normalized frequency response (pass band)





Data Sheet

Normalized frequency response (wide band)

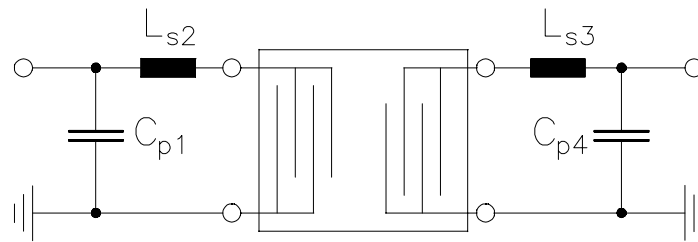




Data Sheet

Matching network to 50 Ω

(Element values depend on PCB layout)



$$C_{p1} = 56 \text{ pF}$$

$$L_{s2} = 68 \text{ nH} // 2.2 \text{ pF}$$

$$L_{s3} = 68 \text{ nH} // 1.2 \text{ pF}$$

$$C_{p4} = 56 \text{ pF}$$



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