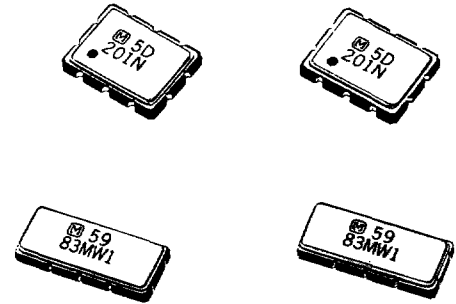


# Panasonic SAWフィルタ (セルラー電話用) SAW Filters for Cellular Telephone

## セルラー電話IF用SAWフィルタ SAW Filters for Cellular Telephone

EFCH□□MMQ□□



自動車・携帯電話IF用SAWフィルタは表面弾性波の共振現象を応用した共振子形SAWフィルタで、低損失、高選択特性を有し、従来の水晶フィルタに比べ大幅な小形化が図られています。群遅延特性も平坦で、自動車電話、携帯電話の1st. IFフィルタに好適です。

SAW Filter for Cellular Telephone which incorporates highly-precise interdigitated electrodes on the quartz substrate achieves low insertion loss, high selectivity and excellent characteristics of group delay deviation. Thus the filter has wide applications to bandpass filtering circuits for cellular telephones and portable wireless equipment.

### ■ 特 長

- フルモノリシック構造による優れた耐振性・耐衝撃性
- 低挿入損失、高選択度特性
- 群遅延特性が平坦
- 回路の無調整化と省スペース化に貢献
- 小形、薄形

### Features

- Stable against severe conditions of vibration and shock thanks to the unique monolithic construction of the filter
- Low insertion loss and excellent selectivity
- Excellent characteristics of the group delay deviation
- Contributes to circuit simplification and adjustment free
- Saves the hight on PC board

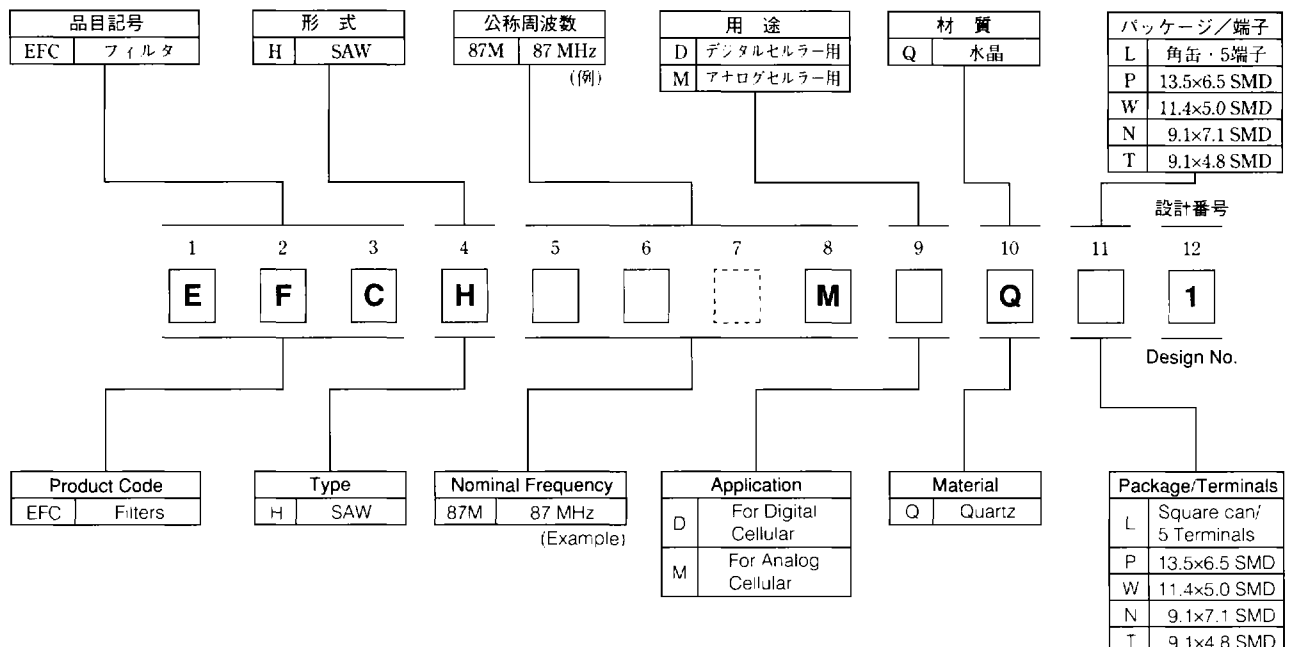
### ■ 主な用途

- 自動車電話、携帯電話の1st. IF用フィルタ

### Recommended Applications

- The first IF-stage band-pass filter for cellular telephone or portable wireless equipment

### ■ 品番構成 Explanation of Part Numbers



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## ■ 定格・性能 Ratings and Characteristics

Part No.	Item システム System	公称中心周波数 Nominal Center Frequency ( $f_0$ )	挿入損失 Insertion Loss	通過帯域幅 Pass-band Width	減衰量 Attenuation	
					$15\text{ dB min. } (f_0 \pm 60\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH83MMQP1	AMPS	83.16 MHz	5 dB max.	$\pm 15\text{ kHz}$	$15\text{ dB min. } (f_0 \pm 60\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH83MMQW1	AMPS	83.16 MHz	5 dB max.	$\pm 15\text{ kHz}$	$15\text{ dB min. } (f_0 \pm 60\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH83MMQL1	AMPS	83.16 MHz	5 dB max.	$\pm 15\text{ kHz}$	$15\text{ dB min. } (f_0 \pm 60\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH85MMQW2	AMPS	85.38 MHz	5 dB max.	$\pm 15\text{ kHz}$	$25\text{ dB min. } (f_0 \pm 60\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH91MMQP2	E-TACS	91.9875 MHz	5 dB max.	$\pm 12\text{ kHz}$	$12\text{ dB min. } (f_0 \pm 50\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH91MMQW1	E-TACS	91.9875 MHz	5 dB max.	$\pm 12\text{ kHz}$	$12\text{ dB min. } (f_0 \pm 50\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH90MMQW1	NTT	90.00 MHz	5 dB max.	$\pm 5\text{ kHz}$	$20\text{ dB min. } (f_0 \pm 50\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH90MMQW3	N-TACS	90.05 MHz	5 dB max.	$\pm 12\text{ kHz}$	$12\text{ dB min. } (f_0 \pm 50\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$
EFCH130MDQT2	PDC	130.00 MHz	5 dB max.	$\pm 19\text{ kHz}$	$20\text{ dB min. } (f_0 \pm 100\text{ kHz})$	$72\text{ dB min. } (f_0 - 900\text{ kHz})$
EFCH246MDQN2	GSM/PCN	246.00 MHz	8 dB max.	$\pm 80\text{ kHz}$	$22\text{ dB min. } (f_0 \pm 400\text{ kHz})$	$35\text{ dB min. } (f_0 - 600\text{ kHz})$
EFCH246MDQN3	GSM/PCN	246.00 MHz	8 dB max.	$\pm 80\text{ kHz}$	$22\text{ dB min. } (f_0 \pm 400\text{ kHz})$	$35\text{ dB min. } (f_0 - 600\text{ kHz})$
EFCH82MMQW1	AMPS/ADC	82.20 MHz	5 dB max.	$\pm 15\text{ kHz}$	$15\text{ dB min. } (f_0 \pm 60\text{ kHz})$	$70\text{ dB min. } (f_0 - 910\text{ kHz})$

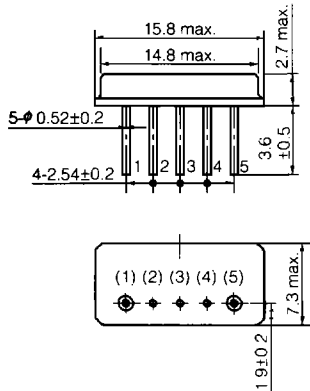
● Operating Temperature Range:  $-30$  to  $85\text{ }^\circ\text{C}$

\* AMPS: Advanced Mobile Phone System

\*\* ETACS: Extended Total Access Communication System

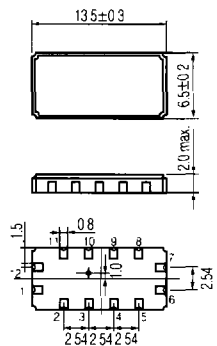
## ■ 形状寸法 Dimensions in mm (not to scale)

EFCH□□MMQL□



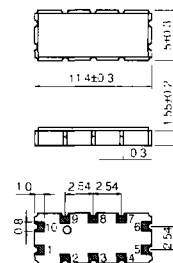
Terminal  
(1) Input  
(2) Ground  
(3) Ground  
(4) Ground  
(5) Output

EFCH□□MMQP□



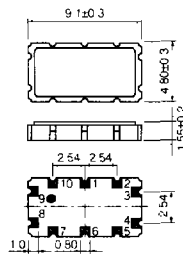
Terminal  
(1) Input or Output  
(2) Ground  
(3) Ground  
(4) Ground  
(5) Ground  
(6) Ground  
(7) Output or Input  
(8) Ground  
(9) Ground  
(10) Ground  
(11) Ground  
(12) Ground

EFCH90MMQW□



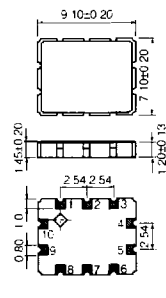
Terminal  
(1) Input/Output  
(2) GND  
(3) GND  
(4) GND  
(5) GND  
(6) GND  
(7) Output/Input  
(8) GND  
(9) GND  
(10) GND  
(11) GND  
(12) GND

EFCH130MDQT2



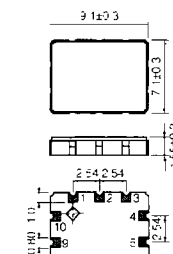
Terminal  
(1) GND  
(2) GND  
(3) GND  
(4) Input/Output  
(5) GND  
(6) GND  
(7) GND  
(8) GND  
(9) Output/Input  
(10) GND

EFCH246MDQN2



Terminal  
(1) Input  
(2) Input  
(3) GND  
(4) GND  
(5) GND  
(6) Output  
(7) Output  
(8) HOT  
(9) GND  
(10) GND

EFCH246MDQN3



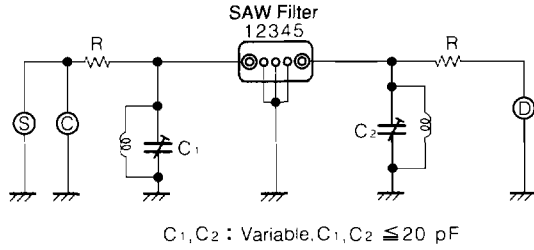
Terminal  
(1) Input  
(2) GND  
(3) GND  
(4) GND  
(5) GND  
(6) Output  
(7) GND  
(8) HOT  
(9) GND  
(10) GND

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## ■ 測定回路 Test Circuits Diagram

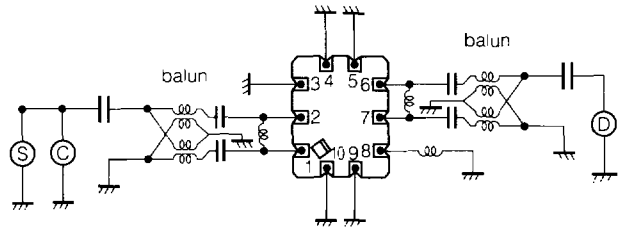
EFCH□□MMQ□□



$C_1, C_2$  : Variable.  $C_1, C_2 \leq 20$  pF

S: Standard signal generator  
(Output impedance 50  $\Omega$ )  
C: Frequency counter  
D: Detector  
(Input impedance 50  $\Omega$ )

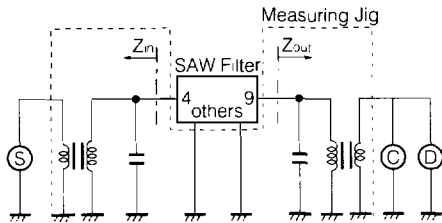
EFCH246MDQN2



balun  
50  $\Omega$ -200  $\Omega$

S: Standard Signal Generator  
(Output Impedance 50  $\Omega$ )  
C: Frequency Counter  
D: Detector  
(Input Impedance 50  $\Omega$ )

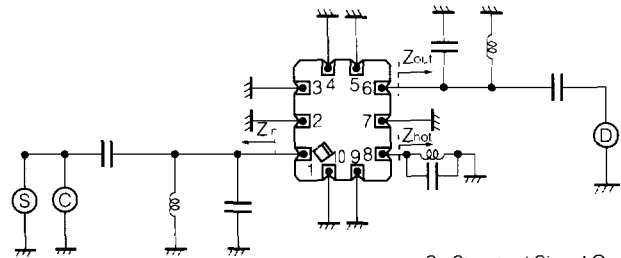
EFCH130MDQT2



$Z_{in}$ : 740  $\Omega$ //-1.7 pF  
 $Z_{out}$ : 740  $\Omega$ //-1.7 pF

S: Standard Signal Generator  
(Output Impedance 50  $\Omega$ )  
C: Frequency Counter  
D: Detector  
(Input Impedance 50  $\Omega$ )

EFCH246MDQN3

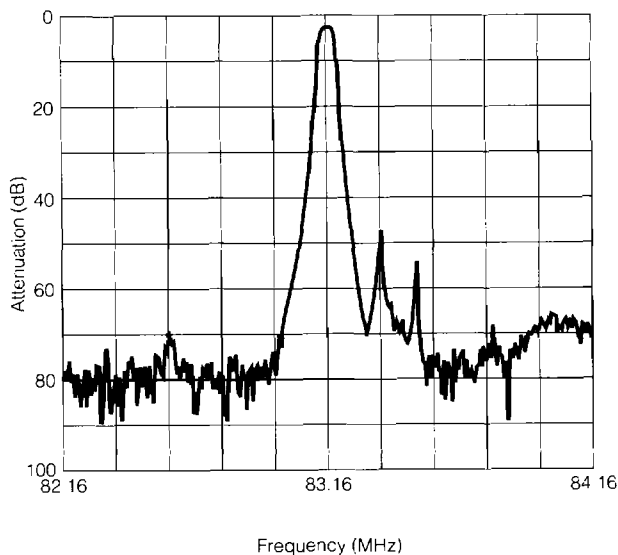


$Z_{in}$ : 300  $\Omega$ //-3 pF  
 $Z_{out}$ : 300  $\Omega$ //-3 pF  
 $Z_{not}$ : 1.1 k $\Omega$ //-5 pF

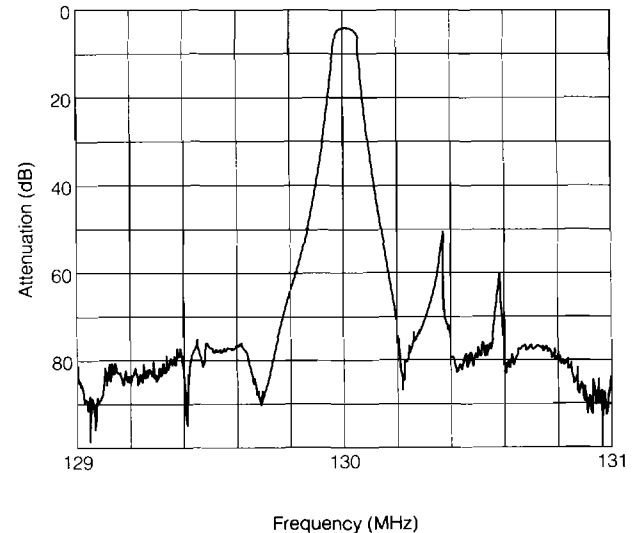
S: Standard Signal Generator  
(Output Impedance 50  $\Omega$ )  
C: Frequency Counter  
D: Detector  
(Input Impedance 50  $\Omega$ )

## ■ 特性例 Typical Characteristics

Attenuation vs. Frequency  
EFCH83MMQW1



EFCH130MDQT2

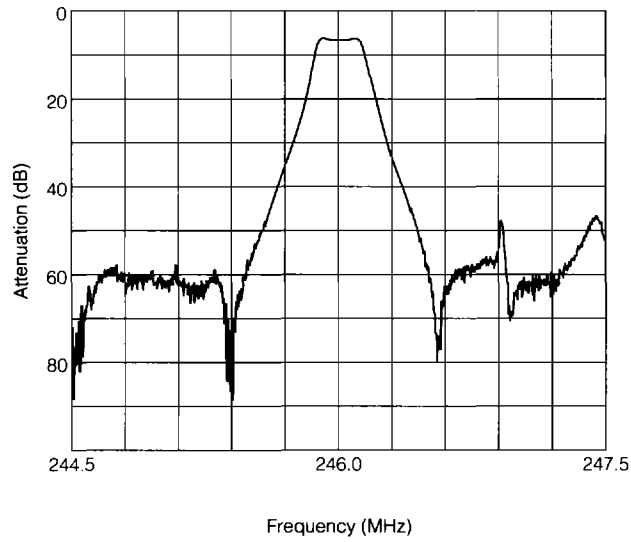


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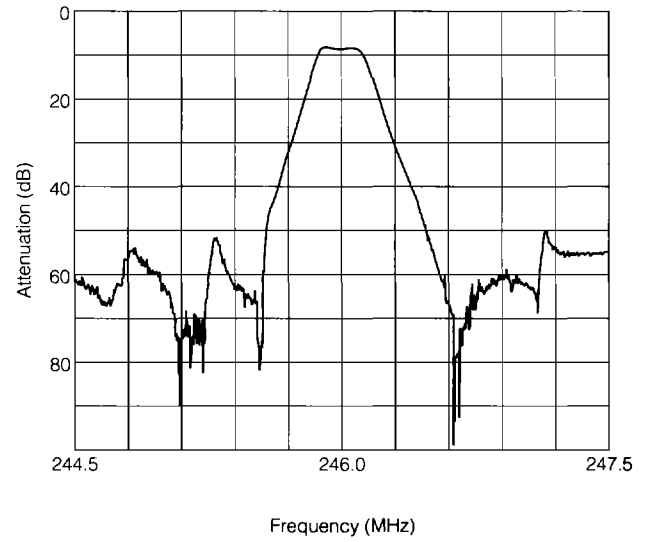
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## ■ 特性例 Typical Characteristics

EFCH246MDQN2



EFCH246MDQN3



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