

## 2 Pole MCF

(Surface-mount Type)

### ■ Features

This is a crystal filter that supports surface mounting. Adoption of a ceramic container has enabled the dimensions of the filter to be 7 x 5 x 1.35 mm. Supports a wide frequency range.

- Supports IR reflow and VSP.  
(Contact us for information on the temperature profile.)
- Supports surface mounting. (Packed with embossed tape)
- Excellent heat- and shock-resistance.
- Good guaranteed attenuation.
- Frequency range Fundamental: 20 to 100 MHz, Overtone: 45 to 150 MHz
- Also supports 3-pole MCF.



Pb Free

RoHS Compliant  
Directive 2002/95/EC

### ■ Specifications

Model	21E7.5AD	21E15AB	21E30AD	21E7.5A	21E15AA	21E30AF
Number of poles	2	2	2	2	2	2
Nominal frequency	21.4MHz	21.4MHz	21.4MHz	21.7MHz	21.7MHz	21.7MHz
3dB Passband width	±3.75kHz min.	±7.5kHz min.	±15kHz min.	±3.75kHz min.	±7.5kHz min.	±15kHz min.
Stop bandwidth	±12.5 kHz max. at 15 dB	±25 kHz max. at 15 dB	±50 kHz max. at 15 dB	±12.5 kHz max. at 15 dB	±25 kHz max. at 15 dB	±50 kHz max. at 15 dB
Ripple	1dB max.	1dB max.	1.5dB max.	1dB max.	1dB max.	1.5dB max.
Insertion loss (insertion attenuation)	2dB max.	1.5dB max.	1.5dB max.	2dB max.	1.5dB max.	1.5dB max.
Guaranteed attenuation	60 dB min. at -910 kHz	60 dB min. at -910 kHz	50 dB min. at -910 kHz	60 dB min. at -910 kHz	60 dB min. at -910 kHz	50 dB min. at -910 kHz
Spurious characteristics	15 dB min.	15 dB min.	15 dB min.	15 dB min.	15 dB min.	15 dB min.
Terminating impedance	1500Ω//5pF	1500Ω//1pF	2500Ω//1.2pF	850Ω//6pF	1500Ω//1pF	2000Ω//1.2pF
Operating temperature range	-20 to +70°C	-20 to +70°C	-20 to +70°C	-20 to +70°C	-20 to +70°C	-20 to +70°C
Package type	NM7050SA	NM7050SA	NM7050SA	NM7050SA	NM7050SA	NM7050SA
Code for placing an order	21E7.5AD-21.4M- MN15-358	21E15AB-21.4M- MN15-211	21E30AD-21.4M- MN15-359	21E7.5A-21.7M- MN15-366	21E15AA-21.7M- MN15-209	21E30AF-21.7M- MN15-365

Model	45E7.5AB	45E15A	45E30AN	90E9A
Number of poles	2	2	2	2
Nominal frequency	45MHz	45MHz	45MHz	90MHz
3dB Passband width	±3.75kHz min.	±7.5kHz min.	±15kHz min.	±4kHz min.
Stop bandwidth	±25 kHz max. at 20 dB	±25 kHz max. at 13 dB	±60 kHz max. at 20 dB	±50 kHz max. at 25 dB
Ripple	1dB max.	1dB max.	1dB max.	0.5dB max.
Insertion loss (insertion attenuation)	2dB max.	3dB max.	2dB max.	5dB max.
Guaranteed attenuation	60 dB min. at -910 kHz	70 dB min. at -910 kHz	60 dB min. at -910 kHz	70 dB min. at -910 kHz
Spurious characteristics	10 dB min.	10 dB min.	5 dB min.	20 dB min.
Terminating impedance	200Ω//4pF	1000Ω//4pF	650Ω//1.5pF	200Ω//8pF
Operating temperature range	-20 to +70°C	-30 to +70°C	-20 to +70°C	-20 to +70°C
Package type	NM7050SA	NM7050SA	NM7050SA	NM7050SA
Code for placing an order	45E7.5AB-45M- MN15-367	45E15A-45M- MN15-297	45E30AN-45M- MN15-369	90E9A-90M- MN15-226

### ■ Dimensions

