

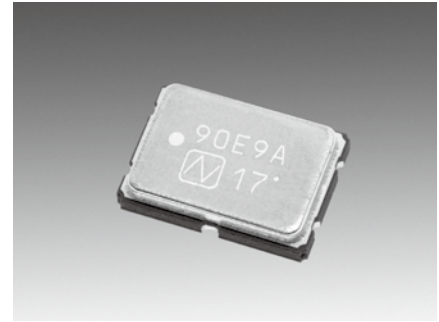
2 Pole MCF

(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 90 MHz, Overtone: 60 to 150 MHz
- Also supports 3-pole MCF.



Pb Free

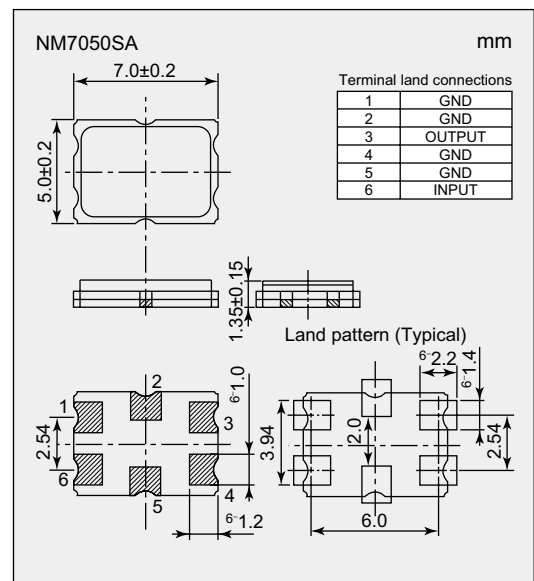
RoHS Compliant
Directive 2011/65/EU

■ Specifications

Model	21E7.5AD	21E15AB	21E30AD	21E7.5A	21E15AA	21E30AF
Number of Poles	2					
Nominal Frequency	21.4 MHz			21.7 MHz		
3 dB Passband Width	Min. ± 3.75 kHz	Min. ± 7.5 kHz	Min. ± 15 kHz	Min. ± 3.75 kHz	Min. ± 7.5 kHz	Min. ± 15 kHz
Stop Bandwidth	Max. ± 12.5 kHz at 15 dB	Max. ± 25 kHz at 15 dB	Max. ± 50 kHz at 15 dB	Max. ± 12.5 kHz at 15 dB	Max. ± 25 kHz at 15 dB	Max. ± 50 kHz at 15 dB
Ripple	Max. 1 dB	Max. 1 dB	Max. 1.5 dB	Max. 1 dB	Max. 1 dB	Max. 1.5 dB
Insertion Attenuation (Insertion Loss)	Max. 2 dB	Max. 1.5 dB	Max. 1.5 dB	Max. 2 dB	Max. 1.5 dB	Max. 1.5 dB
Guaranteed Attenuation	Min. 60 dB at -910 kHz	Min. 60 dB at -910 kHz	Min. 50 dB at -910 kHz	Min. 60 dB at -910 kHz	Min. 60 dB at -910 kHz	Min. 50 dB at -910 kHz
Spurious Characteristics	Min. 15 dB Within ± 1 MHz	Min. 15 dB Within ± 1 MHz	Min. 15 dB Within ± 1 MHz	Min. 15 dB Within ± 1 MHz	Min. 15 dB Within ± 1 MHz	Min. 15 dB Within ± 1 MHz
Terminating Impedance	1.5 k Ω // 5 pF	1.5 k Ω // 1 pF	2.5 k Ω // 1.2 pF	850 Ω // 6 pF	1.5 k Ω // 1 pF	2 k Ω // 1.2 pF
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					
Specification Number	MN15-358	MN15-211	MN15-359	MN15-366	MN15-209	MN15-365

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

■ Dimensions



Please specify the model name, frequency, and specification number when you order products.
For further questions regarding specifications, please feel free to contact us.

■ Characteristics

