Crystal Filter

NDK Crystal Bridge to the Future

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

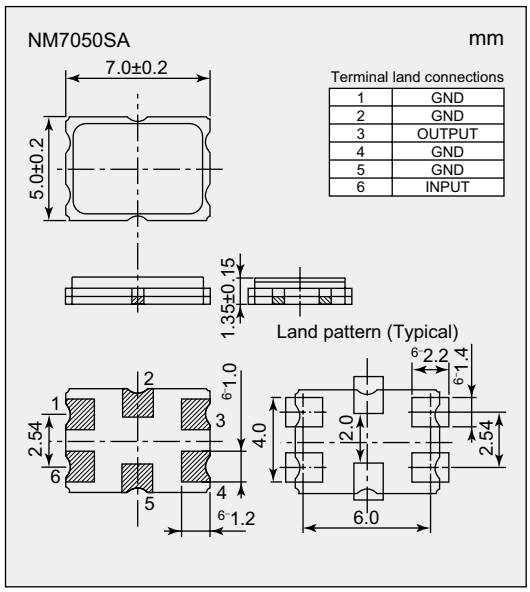
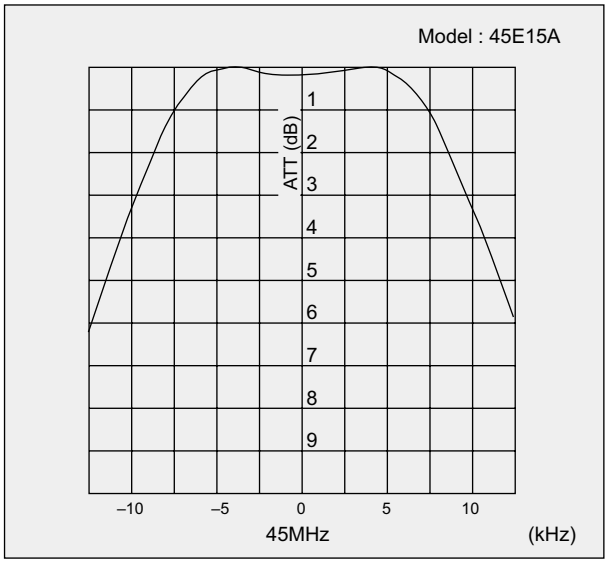
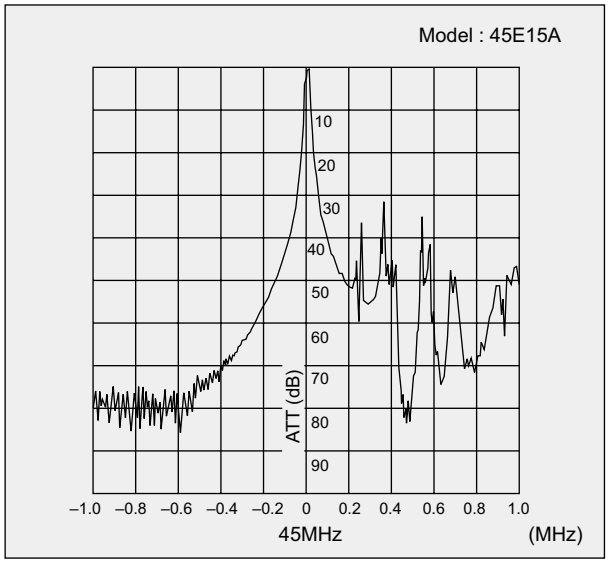
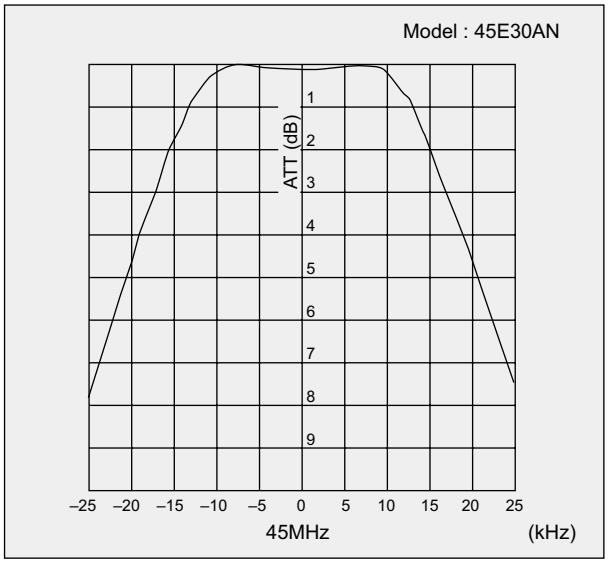
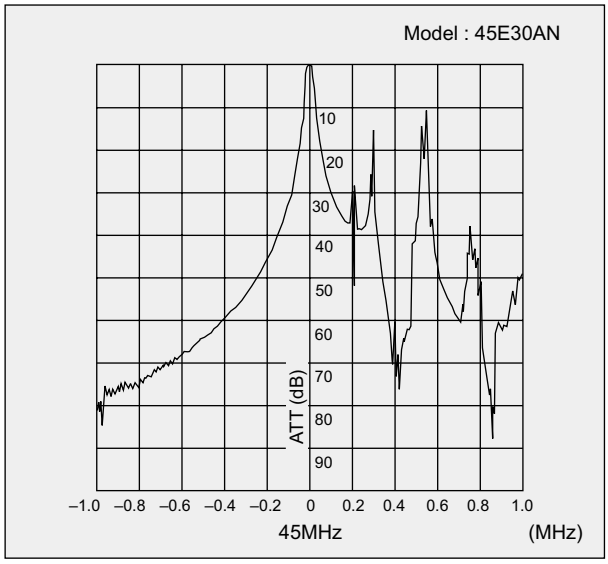
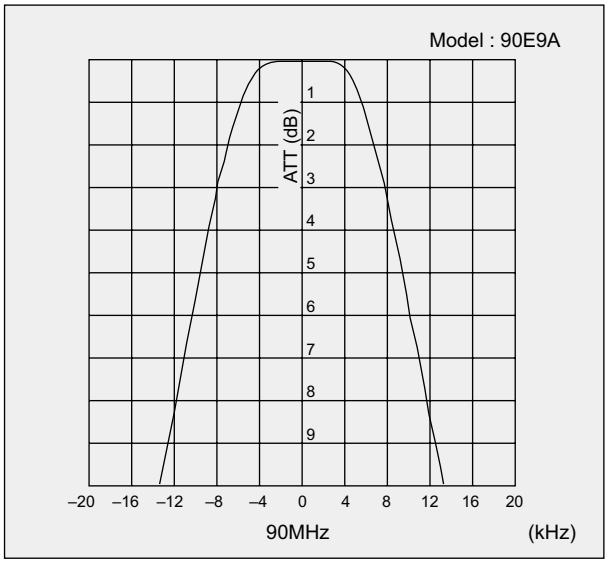
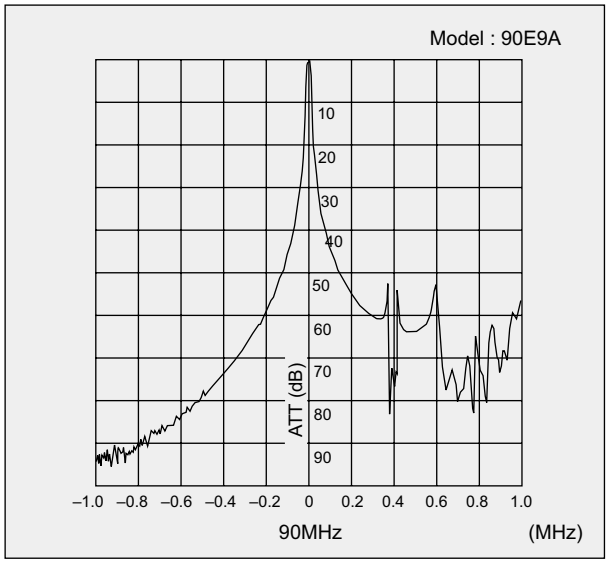
RoHS Compliant
Directive 2011/65/EU

■ 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 loss (insertion attenuation)	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 kΩ // 5 pF	1.5 kΩ // 1 pF	2.5 kΩ // 1.2 pF	850 Ω // 6 pF	1.5 kΩ // 1 pF	2 kΩ // 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					
Ordering code	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			
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			
Ordering code	45E7.5AB-45M-MN15-367	45E15A-45M-MN15-297	45E30AN-45M-MN15-369	90E9A-90M-MN15-226

■ Dimensions



■ Characteristics