



**CERAMIC SEAM SEALED SURFACE MOUNT MONOLITHIC CRYSTAL FILTER - S1 Series**

**FEATURES**

- Industry Standard Footprint, Compact Size (7 x 5 mm) with 1.4 mm Height Maximum
- Excellent Vibration Resistance and Shock Resistance
- Withstand IR or Vapor Phase Soldering Reflow, Excellent Solderability
- RoHS Compliant (Pb-Free)

**SPECIFICATIONS**

Model	Nominal Frequency (MHz)	Pass Bandwidth (dB) (kHz)	Stop Bandwidth (dB) (kHz)	Ripple (dB)	Insertion Loss (dB)	Guaranteed Attenuation (dB) f <sub>0</sub> ±kHz	Terminating Impedance (kOhms//pF)	Case Style	No. of Poles
21M7.5A	21.400	3 ±3.75	20 ±18	1.0	2.0	70 -910	0.85 // 6.0	S1	2
21M15A	21.400	3 ±7.5	18 ±25	1.0	2.0	70 -910	1.5 // 2.5	S1	2
21M20A	21.400	3 ±10	10 ±30	1.0	2.0	70 -910	1.8 // 1.0	S1	2
21M30A	21.400	3 ±15	15 ±45	1.0	2.0	70 -910	2.0 // 1.5	S1	2
21M7.5A	21.700	3 ±3.75	15 ±12.5	1.0	2.0	70 -910	1.2 // 5.0	S1	2
21M15A	21.700	3 ±7.5	15 ±25	1.0	2.0	70 -910	1.5 // 1.0	S1	2
45M7.5A	45.000	3 ±3.75	20 ±25	1.0	2.0	70 -910	0.65 // 3.5	S1	2
45M12A	45.000	3 ±6.0	15 ±20	1.0	2.0	70 -910	0.65 // 5.0	S1	2
45M15A	45.000	3 ±7.5	15 ±25	1.0	2.0	70 -910	0.65 // 3.5	S1	2
45M30A	45.000	3 ±15	15 ±60	1.0	2.0	70 -910	1.2 // -3.0	S1	2
29M20A	29.000	3 ±10	10 ±25	1.0	2.0	70 -910	1.8 // 1.5	S1	2
49M20A	49.000	3 ±10	15 ±40	1.0	2.5	70 -910	1.1 // 0	S1	2
77M15A	77.550 (3)	3 ±7.5	18 ±28	1.0	3.0	50 -910	1.5 // -1	S1	2
100M20A	100.00 (3)	3 ±10	10 ±25	1.0	2.0	70 -1600	1.5 // -1.5	S1	2
105M14A	105.00 (3)	3 ±7	20 ±20	1.0	6.0	40 -4000	0.95 // -1.4	S1	2
109M30A	109.65 (3)	3 ±15	22 ±60	0.5	2.5	65 -910	2.0 // -1.3	S1	2
128M30A	128.55 (3)	3 ±15	20 ±53	1.3	2.5	25 300-1K 40 -915	0.95 // -1.6	S1	2

**Typical Part Number** M - Pass Bandwidth - Pole (A:2; B:4) - Case Style - Frequency - Package Option

**P/N Example** M15AS1-45M000-T&R: Model 45M15A Monolithic Crystal Filter in 7x5x1.4 mm SMD package; Nominal frequency 45.000 MHz; Pass bandwidth ±7.5 kHz; 2 Poles; Tape & Reel package.

**OUTLINE DRAWING**

