

Monolithic Crystal Filters

SINGLE PACKAGE 7.0x5.0 mm 2-POLE

96SMF SERIES (2-POLE MCF IN SINGLE 7.0x5.0 mm PACKAGE)

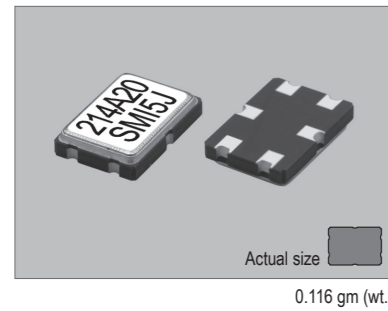
STANDARD SMD MCF

STANDARD SPECIFICATIONS

- 2-POLE FILTERS
- 21.4 MHz, 21.7 MHz & 45 MHz
- PACKAGE SIZE 7.0x5.0 mm

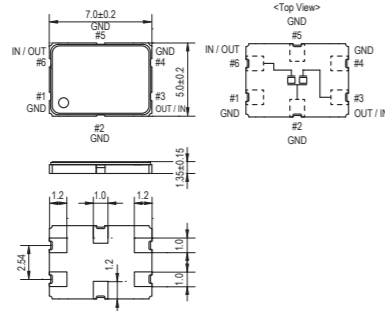
Part Number	Nominal Frequency f ₀ (MHz)	Oscillation Mode	Passband min.		Stopband max.		Attenuation Guaranteed min.		Ripple max.	Loss max.	Terminating Impedance	Operating Temperature	No. of Pole
			(dB)	(kHz)	(dB)	(kHz)	(dB)	(kHz)	(dB)	(dB)	(Ω // pF)	(°C)	
96SMF214A7.5A	21.4	FUND	3	±3.75	18	±25.0	70	-910	1.0	2.0	850 // 6.0	-30 to +80	2
96SMF214A7.5B	21.4	FUND	3	±3.75	18	±14.0	70	-910	1.0	2.0	870 // 6.0	-30 to +80	2
96SMF214A7.5C	21.4	FUND	3	±3.75	15	±12.5	60	-900	1.0	2.0	870 // 6.0	-30 to +80	2
96SMF214A12	21.4	FUND	3	±6.0	15	±20.0	70	-910	0.5	1.5	1200 // 2.0	-30 to +80	2
96SMF214A15A	21.4	FUND	3	±7.5	18	±25.0	70	-910	1.0	2.0	1500 // 1.5	-30 to +80	2
96SMF214A15B	21.4	FUND	3	±7.5	18	±25.0	70	-910	1.0	2.0	1500 // 2.0	-30 to +80	2
96SMF214A15C	21.4	FUND	3	±7.5	18	±25.0	70	-910	0.5	1.5	1500 // 2.5	-30 to +80	2
96SMF214A20	21.4	FUND	3	±10.0	15	±30.0	70	-910	1.0	2.0	1800 // 1.0	-30 to +80	2
96SMF214A30A	21.4	FUND	3	±15.0	15	±45.0	70	-910	1.0	2.0	2000 // 0.5	-30 to +80	2
96SMF214A30B	21.4	FUND	3	±15.0	15	±45.0	60	-910	1.0	2.0	2000 // 0.5	-30 to +80	2
96SMF217A7.5A	21.7	FUND	3	±3.75	20	±18.0	70	-910	1.0	2.0	850 // 6.0	-30 to +80	2
96SMF217A7.5B	21.7	FUND	3	±3.75	18	±14.0	70	-910	1.0	2.0	870 // 6.0	-30 to +80	2
96SMF217A7.5C	21.7	FUND	3	±3.75	15	±12.5	70	-910	1.0	2.0	850 // 3.5	-30 to +80	2
96SMF217A7.5D	21.7	FUND	3	±3.75	18	±12.5	50	-910	1.0	2.0	1500 // 6.0	-30 to +80	2
96SMF217A7.9	21.7	FUND	3	±3.95	18	±12.5	70	-910	1.0	2.0	850 // 8.0	-30 to +80	2
96SMF217A15A	21.7	FUND	3	±7.5	18	±25.0	70	-910	1.0	2.0	1500 // 2.5	-30 to +80	2
96SMF217A15B	21.7	FUND	3	±7.5	18	±25.0	70	-910	0.5	2.0	1500 // 1.5	-30 to +80	2
96SMF217A15C	21.7	FUND	3	±7.5	15	±25.0	70	-910	1.0	2.0	1500 // 2.0	-30 to +80	2
96SMF450A7.5A	45.0	FUND	3	±3.75	10	±12.5	70	-910	1.0	2.0	200 // 4.0	-30 to +80	2
96SMF450A7.5B	45.0	FUND	3	±3.75	20	±25.0	70	-910	1.5	2.0	650 // 3.5	-30 to +80	2
96SMF450A12	45.0	FUND	3	±6.0	15	±20.0	70	-910	1.0	2.0	650 // 5.0	-30 to +80	2
96SMF450A15A	45.0	FUND	3	±7.5	15	±25.0	70	-910	1.0	2.0	560 // 6.0	-30 to +80	2
96SMF450A15B	45.0	FUND	3	±7.5	15	±25.0	70	-910	1.0	2.0	650 // 3.0	-30 to +80	2
96SMF450A15C	45.0	FUND	3	±7.5	15	±25.0	70	-910	1.0	2.0	650 // 4.0	-30 to +80	2
96SMF450A15D	45.0	FUND	3	±7.5	15	±25.0	70	-910	1.0	2.0	650 // 3.5	-30 to +80	2
96SMF450A15E	45.0	3rd	3	±7.5	15	±25.0	60	-910	0.5	1.5	2700 // 1.7	-30 to +80	2
96SMF450A20	45.0	FUND	3	±10.0	15	±35.0	70	-910	1.0	2.0	800 // 3.0	-30 to +80	2
96SMF450A25	45.0	FUND	3	±12.5	15	±50.0	70	-910	1.0	3.0	1000 // 2.0	-30 to +80	2
96SMF450A30A	45.0	FUND	3	±15.0	16	±60.0	70	-910	1.0	2.0	1100 // 0.0	-30 to +80	2
96SMF450A30B	45.0	FUND	3	±15.0	15	±60.0	65	-910	1.0	2.0	1200 // 1.8	-30 to +80	2
96SMF450A40	45.0	FUND	3	±20.0	15	±70.0	70	-910	1.0	3.0	1000 // 1.0	-30 to +80	2
96SMF450A48	45.0	FUND	3	±24.0	-	-	40	-910	1.0	2.0	1000 // 0.7	-30 to +80	2

96SMF

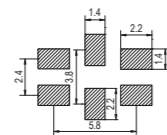


Actual size
0.116 gm (wt.)

96SMF



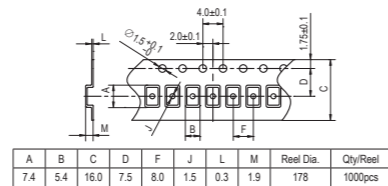
SOLDERING PATTERN



PACKAGE DATA

Item	Package	96SMF
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)

TAPE SPECIFICATIONS



Monolithic Crystal Filters

SINGLE PACKAGE 7.0x5.0 mm 2-POLE

96SMF SERIES (2-POLE MCF IN SINGLE 7.0x5.0 mm PACKAGE)

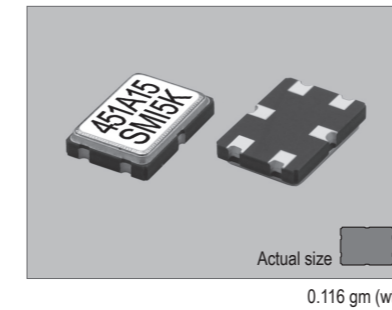
STANDARD SMD MCF

STANDARD SPECIFICATIONS

- 2-POLE FILTERS
- OTHER FREQUENCIES
- PACKAGE SIZE 7.0x5.0 mm

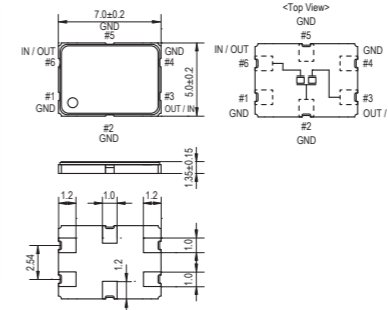
Part Number	Nominal Frequency f ₀ (MHz)	Oscillation Mode	Passband min.		Stopband max.		Attenuation Guaranteed min.		Ripple max.	Loss max.	Terminating Impedance	Operating Temperature	No. of Pole
			(dB)	(kHz)	(dB)	(kHz)	(dB)	(kHz)	(dB)	(dB)	(Ω // pF)	(°C)	
96SMF145A15	14.575	FUND	3.0	±7.50	13	±20.0	50	-910	0.5	2.0	2500 // 1.0	-30 to +80	2
96SMF204A5	20.480	FUND	3.0	±2.50	15	±10.0	70	-910	1.0	2.0	850 // 8.0	-30 to +80	2
96SMF212A15	21.250	FUND	3.0	±7.5	19	±25.0	70	-910	1.0	2.0	1500 // 2.5	-30 to +80	2
96SMF213A15	21.300	FUND	3.0	±7.50	18	±25.0	45	-150	1.0	2.0	1500 // 2.5	-30 to +80	2
96SMF2132A15	21.325	FUND	3.0	±7.50	18	±25.0	45	-150	1.0	2.0	1500 // 2.5	-30 to +80	2
96SMF218A7.5	21.800	FUND	3.0	±3.75	15	±12.5	70	-910	1.0	2.0	850 // 6.0	-30 to +80	2
96SMF241A20	24.100	FUND	3.0	±10.00	10	±25.0	70	-910	1.0	2.0	1350 // 1.5	-30 to +80	2
96SMF245A20	24.555	FUND	3.0	±10.00	10	±25.0	70	-910	1.0	2.0	1350 // 1.5	-30 to +80	2
96SMF246A47	24.600	FUND	3.0	±23.50	-	-	40	-910	1.0	1.5	5000 // 0.0	-30 to +80	2
96SMF256A20	25.655	FUND	3.0	±10.00	10	±25.0	70	-910	1.0	2.0	1350 // 1.5	-30 to +80	2
96SMF260A20	26.000	FUND	1.5	±10.00	10	±25.0	75	-910	1.0	2.0	1300 // 1.5	-30 to +80	2
96SMF264A15	26.450	FUND	3.0	±7.50	15	±25.0	70	-910	1.0	2.0	1500 // 3.0	-30 to +80	2
96SMF270A24	27.000	FUND	3.0	±12.00	10	±25.0	70	-910	1.0	3.0	1000 // 1.6	-30 to +80	2
96SMF292A20	29.250	FUND	3.0	±10.00	10	±25.0	70	-910	1.0	1.5	1800 // 1.5	-30 to +80	2
96SMF300A40	30.000	FUND	1.0	±20.00	15	±125.0	30	-910	1.0	3.0	3800 // -0.4	-30 to +80	2
96SMF451A15	45.100	FUND	3.0	±7.50	15	±25.0	65	-910	1.0	2.0	560 // 6.0	-30 to +80	2
96SMF4515A15	45.150	FUND	3.0	±7.50	13	±25.0	70	-910	1.0	3.0	1000 // 4.0	-30 to +80	2
96SMF499A20	49.950	FUND	3.0	±10.00	13	±45.0	70	-910	1.0	3.0	800 // 2.0	-30 to +80	2
96SMF499A25	49.950	FUND	3.0	±12.50	13	±50.0	70	-910	1.0	3.0	800 // 1.5	-30 to +80	2
96SMF500A5	50.000	FUND	3.0	±2.50	15	±10.0	40	-1000	1.0	5.0	200 // 0.9	-30 to +80	2
96SMF768A8	76.800	3rd	3.0	±4.00	15	±13.0	50	-910	1.0	2.0	2000 // 0.4	-30 to +80	2
96SMF800A24	80.000	3rd	3.0	±12.00	15	±35.0	50	-910	1.0	2.0	2500 // -0.8	-30 to +80	2
96SMF900A30A	90.000	3rd	3.0	±15.00	16	±50.0	30	-910	0.5	3.0	3000 // -0.5	-30 to +80	2
96SMF921A6A	92.160	3rd	3.0	±3.00	30	±30.0	50	-910	1.0	3.0	2000 // 0.4	-30 to +80	2
96SMF921A6B	92.160	3rd	3.0	±3.00	30	±30.0	50	-910	1.0	3.0	1000 // -0.2	-30 to +80	2
96SMF100A20	100.000	3rd	3.0	±10.00	10	±28.0	50	-910	1.0	3.0	1500 // -0.8	-30 to +80	2
96SMF1001A14	100.100	3rd	3.0	±7.00	13	±28.0	50	-910	1.0	3.0	1500 // -0.3	-30 to +80	2
96SMF101A14	101.000	3rd	3.0	±7.00	13	±28.0	50	-910	1.0	3.0	1500 // -0.3	-30 to +80	2
96SMF105A14	105.000	3rd	3.0	±7.00	13	±28.0	50	-910	1.0	3.0	1500 // -1.0	-30 to +80	2
96SMF109A15	109.650	3rd	3.0	±7.50	18	±25.0	50	-910	1.0	3.0	1500 // -0.6	-30 to +80	2
96SMF109A24	109.650	3rd	3.0	±12.00	18	±60.0	65	-910	1.0	2.0	2000 // -1.1	-30 to +80	2
96SMF110A15	110.000	3rd	3.0	±7.50	18	±25.0	50	-910	1.0	3.0	1500 // -1.0	-30 to +80	2
96SMF122A7	122.880	3rd	6.0	±3.75	30	±40.0	50	-910	2.0	3.0	1000 // 1.6	-30 to +80	2
96SMF150A7	150.000	3rd	3.0	±3.50	15	±15.0	50	-910	1.0	7.0	1000 // 1.8	-30 to +80	2

96SMF

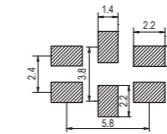


Actual size
0.116 gm (wt.)

96SMF



SOLDERING PATTERN



PACKAGE DATA

Item	Package	96SMF
Lid		Metal
Base		Ceramic
Sealing		Seam
Terminal		Tungsten (metalized)
Terminal plating		Gold / Nickel (surface) / (under)
RoHS		Compliant (Pb-free)

TAPE SPECIFICATIONS

