38SMF SERIES (2-POLE MCF IN SINGLE 3.8x3.8 mm PACKAGE)

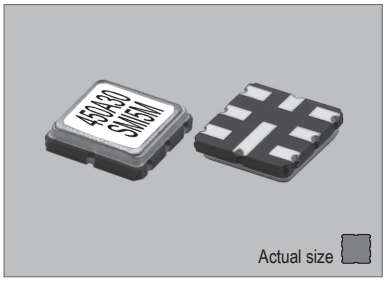
STANDARD SMD MCF

STANDARD SPECIFICATIONS

- 2-POLE FILTERS
- OTHER FREQUENCIES
- PACKAGE SIZE 3.8x3.8 mm

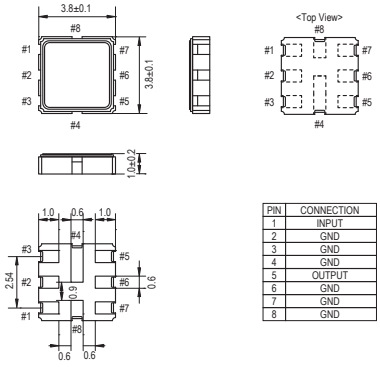
Part Number	Nominal Frequency fo	Oscillation Mode	Passband min.		Stopband max.		Attenuation Guaranteed min.		Ripple max.	Loss max.	Terminating Impedance	Operating Temperature	No. of Pole
	(MHz)		(dB)	(kHz)	(dB)	(kHz)	(dB)	(kHz)	(dB)	(dB)	(Ω // pF)	(°C)	
38SMF450A15	45.000	FUND	3	±7.5	13	±25.0	60	-910	1.0	3.0	560 // 4.5	-30 to +80	2
38SMF450A30	45.000	FUND	3	±15	15	±60.0	60	-900	1.0	2.5	1100 // 1.0	-30 to +80	2
38SMF463A15	46.350	FUND	3	±7.5	15	±25.0	70	-910	1.0	2.0	470 // 6.0	-30 to +80	2

38SMF



0.042 gm (wt.)

38SMF

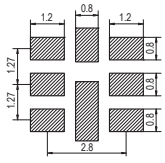


PIN	CONNECTION
1	INPUT
2	GND
3	GND
4	GND
5	OUTPUT
6	GND
7	GND
8	GND

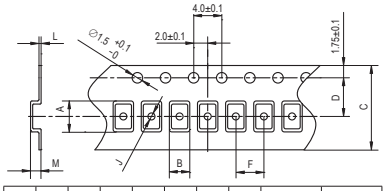
PACKAGE DATA

Item \ Package	38SMF
Lid	Metal
Base	Ceramic
Sealing	Seam
Terminal	Tungsten (metalized)
Terminal plating	Gold / Nickel (surface) / (under)
RoHS	Compliant (Pb-free)

SOLDERING PATTERN



TAPE SPECIFICATIONS



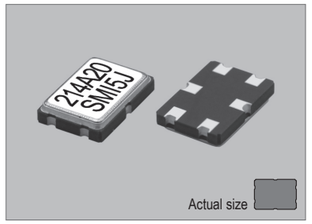
A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
4.25	4.25	12.0	5.5	8.0	1.5	0.3	1.35	180	1000pcs

STANDARD SPECIFICATIONS

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

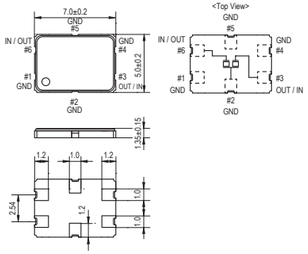
Part Number	Nominal Frequency fo	Oscillation Mode	Passband min.		Stopband max.		Attenuation Guaranteed min.		Ripple max.	Loss max.	Terminating Impedance	Operating Temperature	No. of Pole
	(MHz)		(dB)	(kHz)	(dB)	(kHz)	(dB)	(kHz)	(dB)	(dB)	(Ω // pF)	(°C)	
96SMF214A7.5A	21.4	FUND	3	±3.75	18	±25.0	70	-910	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



0.116 gm (wt.)

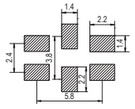
96SMF



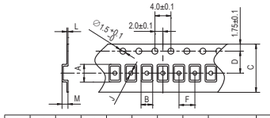
PACKAGE DATA

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

SOLDERING PATTERN



TAPE SPECIFICATIONS



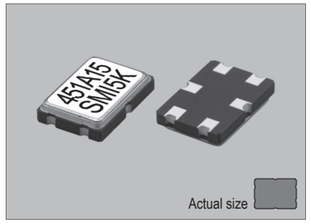
A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
7.4	5.4	16.0	7.5	8.0	1.5	0.3	1.9	178	1000pcs

STANDARD SPECIFICATIONS

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

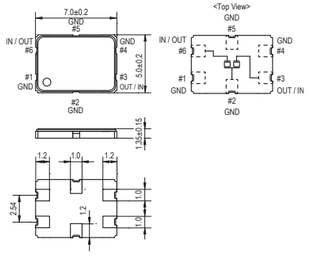
Part Number	Nominal Frequency fo	Oscillation Mode	Passband min.		Stopband max.		Attenuation Guaranteed min.		Ripple max.	Loss max.	Terminating Impedance	Operating Temperature	No. of Pole
	(MHz)		(dB)	(kHz)	(dB)	(kHz)	(dB)	(kHz)	(dB)	(dB)	(Ω // pF)	(°C)	
96SMF145A15	14.575	FUND	3.0	±7.50	13	±20.0	50	-910	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



0.116 gm (wt.)

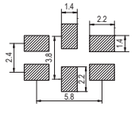
96SMF



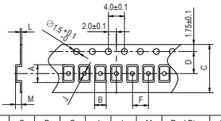
PACKAGE DATA

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

SOLDERING PATTERN



TAPE SPECIFICATIONS



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
7.4	5.4	16.0	7.5	8.0	1.5	0.3	1.9	178	1000pcs

96SMF SERIES (4-POLE MCF IN SINGLE 7.0x5.0 mm PACKAGE)

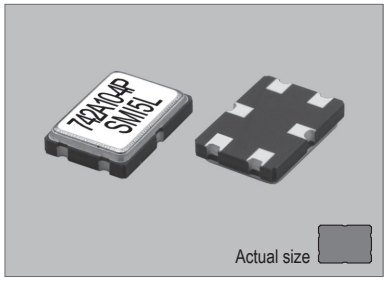
STANDARD SMD MCF

STANDARD SPECIFICATIONS

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

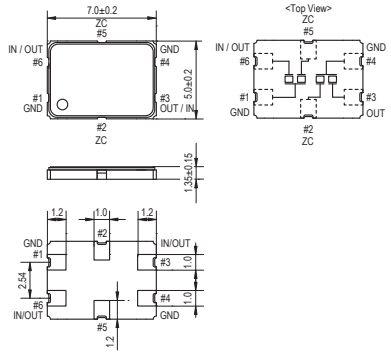
Part Number	Nominal Frequency fo	Oscillation Mode	Passband min.		Stopband max.		Attenuation Guaranteed min.		Ripple max.	Loss max.	Terminating Impedance	Coupling Capacitor	Operating Temperature	No. of Pole
	(MHz)		(dB)	(kHz)	(dB)	(kHz)	(dB)	(kHz)	(dB)	(dB)	(Ω // pF)	Zc (pF)	(°C)	
96SMF214A7.5-4P	21.400	FUND	3	±3.75	30	±12.5	80	-910	1.0	4.0	1800 // 2.0	6.0	-30 to +80	4
96SMF214A12-4P	21.400	FUND	3	±6.00	30	±22.0	80	-910	1.0	4.0	1800 // 2.0	5.5	-30 to +80	4
96SMF217A7.5-4P	21.700	FUND	3	±3.75	31	±12.5	75	-910	1.0	4.0	1800 // 2.0	6.0	-30 to +80	4
96SMF217A15-4P	21.700	FUND	3	±7.50	30	±25.0	70	-910	1.0	4.0	1750 // 0.35	5.0	-30 to +80	4
96SMF388A7.5-4P	38.850	FUND	3	±3.75	40	±18.0	80	-910	1.0	4.0	480 // 5.5	15.0	-30 to +80	4
96SMF388A10-4P	38.850	FUND	3	±5.00	40	±20.0	80	-910	1.0	4.0	610 // 3.0	14.0	-30 to +80	4
96SMF388A12-4P	38.850	FUND	3	±6.00	35	±25.0	70	-910	1.0	4.0	610 // 3.0	13.0	-30 to +80	4
96SMF448A15-4P	44.850	FUND	3	±7.50	35	±25.0	70	-910	1.0	4.0	650 // 3.0	8.0	-30 to +80	4
96SMF449A16 - 4P	44.9725	FUND	3	±8.00	20	±30.0	80	-910	1.0	4.0	800 // 1.7	8.0	-30 to +80	4
96SMF450A7.5-4P	45.000	FUND	3	±3.75	30	±12.5	80	-910	1.0	4.0	350 // 6.5	18.0	-30 to +80	4
96SMF450A10-4P	45.000	FUND	3	±5.00	40	±20.0	80	-910	1.0	4.0	610 // 3.0	14.0	-30 to +80	4
96SMF450A15A-4P	45.000	FUND	3	±7.50	30	±25.0	80	-910	1.0	4.0	650 // 3.0	9.0	-30 to +80	4
96SMF450A15B-4P	45.000	FUND	3	±7.50	35	±26.0	80	-910	1.0	3.0	800 // 1.7	8.0	-30 to +80	4
96SMF450A15C-4P	45.000	FUND	3	±7.50	30	±25.0	80	-910	1.0	3.0	650 // 2.5	8.0	-30 to +80	4
96SMF450A15D-4P	45.000	FUND	3	±7.50	30	±25.0	70	-910	1.0	4.0	600 // 3.0	9.5	-30 to +80	4
96SMF450A15E-4P	45.000	FUND	3	±7.50	25	±22.0	80	-910	1.0	4.0	800 // 2.0	8.0	-30 to +80	4
96SMF450A15F-4P	45.000	FUND	3	±7.50	30	±25.0	80	-910	1.0	3.0	650 // 3.0	9.0	-30 to +80	4
96SMF450A30A-4P	45.000	FUND	3	±15.00	30	±45.0	70	-910	1.0	3.0	1000 // 1.0	5.0	-30 to +80	4
96SMF450A30B-4P	45.000	FUND	3	±15.00	30	±50.0	80	-910	1.0	3.0	800 // 1.7	6.0	-30 to +80	4
96SMF450A30C-4P	45.000	FUND	3	±15.00	30	±45.0	70	-910	1.0	3.0	1000 // 1.0	15	-30 to +80	4
96SMF451A12-4P	45.100	FUND	3	±6.00	25	±22.0	80	-910	1.0	4.0	500 // 4.5	11.5	-30 to +80	4
96SMF451A15-4P	45.100	FUND	3	±7.50	30	±25.0	80	-910	1.0	4.0	800 // 2.0	8.0	-30 to +80	4
96SMF453A7.5-4P	45.300	FUND	3	±3.75	30	±12.5	80	-910	1.0	5.0	350 // 6.5	18.0	-30 to +80	4
96SMF453A12-4P	45.300	FUND	3	±6.00	30	±20.0	80	-910	1.0	4.0	650 // 3.0	9.0	-30 to +80	4
96SMF453A15-4P	45.300	FUND	3	±7.50	30	±25.0	80	-910	1.0	4.0	650 // 2.5	8.5	-30 to +80	4
96SMF463A12-4P	46.350	FUND	3	±6.00	30	±20.0	75	-900	1.0	3.0	490 // 4.0	13.0	-30 to +80	4
96SMF472A10-4P	47.250	FUND	3	±5.00	40	±18.0	80	-910	1.0	3.5	430 // 6.5	14.5	-30 to +80	4
96SMF474A7.5-4P	47.400	FUND	3	±3.75	20	±12.5	80	-910	1.5	6.0	350 // 6.5	17.0	-30 to +80	4
96SMF484A15-4P	48.425	FUND	3	±7.50	20	±25.0	80	-910	1.0	5.0	470 // 4.5	12.0	-30 to +80	4
96SMF494A7.5-4P	49.455	FUND	3	±3.75	30	±15.0	80	-910	1.0	4.0	300 // 7.5	20.0	-30 to +80	4
96SMF499A10-4P	49.950	FUND	3	±5.00	40	±20.0	80	-910	1.0	4.0	350 // 6.0	15.5	-30 to +80	4
96SMF700A20-4P	70.000	3rd	3	±10.00	35	±40.0	70	-910	1.0	4.0	3000 // -0.6	-0.8	-30 to +80	4
96SMF742A10-4P	74.250	FUND	3	±5.00	40	±18.0	80	-910	1.0	3.5	430 // 6.5	14.5	-30 to +80	4
96SMF900A7.5-4P	90.000	3rd	3	±3.75	30	±12.5	80	-910	1.0	4.0	1200 // 0.0	0.7	-30 to +80	4

96SMF



0.154 gm (wt.)

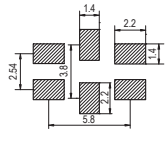
96SMF



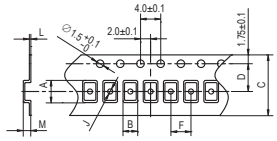
PACKAGE DATA

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

SOLDERING PATTERN



TAPE SPECIFICATIONS



A	B	C	D	F	J	L	M	Reel Dia.	Qty/Reel
7.4	5.4	16.0	7.5	8.0	1.5	0.3	1.9	178	1000pcs