

# F95 Series



## Standard Conformal Coated Chip



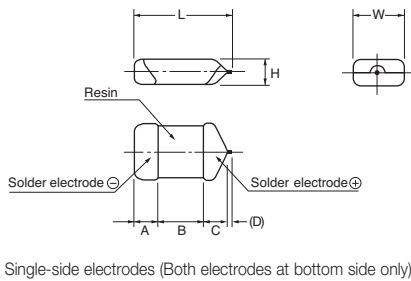
### FEATURES

- Compliant to the RoHS2 directive 2011/65/EU
- For high frequency
- SMD Conformal
- Small and high CV



### APPLICATIONS

- Smartphone
- Tablet PC
- Wireless module
- e-book

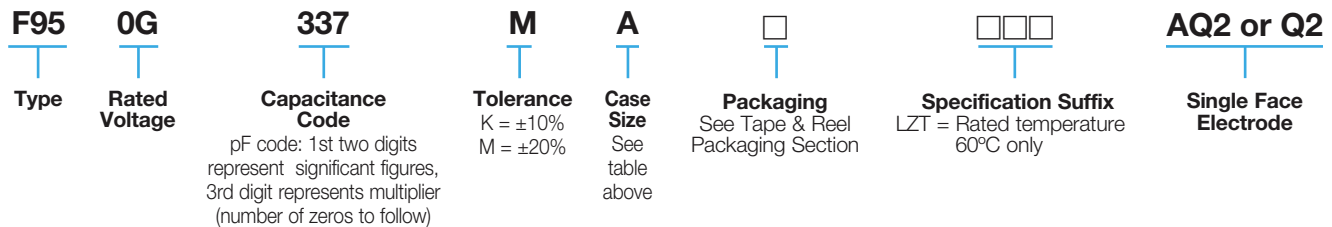


### CASE DIMENSIONS: millimeters (inches)

Code	EIA Code	EIA Metric	L	W	H	A	B	C	D*
A	1207	3217-16	3.20±0.30 (0.126±0.012)	1.70±0.30 (0.067±0.008)	1.40±0.20 (0.055±0.008)	0.80±0.30 (0.031±0.012)	1.20±0.30 (0.047±0.012)	0.80±0.30 (0.031±0.012)	0.20 (0.008)
B	1411	3528-20	3.50±0.20 (0.138±0.012)	2.80±0.20 (0.110±0.012)	1.80±0.20 (0.031±0.008)	0.80±0.30 (0.031±0.012)	1.20±0.30 (0.047±0.012)	1.10±0.30 (0.043±0.012)	0.20 (0.008)
P	0905	2212-12	2.20±0.30 (0.087±0.012)	1.25±0.30 (0.049±0.012)	1.00±0.20 (0.039±0.008)	0.60±0.30 (0.024±0.012)	0.80±0.30 (0.031±0.012)	0.80±0.30 (0.031±0.012)	0.20 (0.008)
Q	1306	3216-10	3.20±0.20 (0.126±0.008)	1.60±0.20 (0.063±0.008)	0.80±0.20 (0.031±0.008)	0.80±0.20 (0.031±0.008)	1.20±0.20 (0.047±0.008)	0.80±0.20 (0.031±0.008)	0.20 (0.008)
R	0905	2212-065	2.20±0.30 (0.087±0.012)	1.25±0.30 (0.049±0.012)	0.65 max. (0.026 max.)	0.60±0.30 (0.024±0.012)	0.80±0.30 (0.031±0.012)	0.50 min. (0.020 min.)	0.20 (0.008)
S	1306	3216-12	3.20±0.30 (0.126±0.012)	1.60±0.30 (0.063±0.008)	1.00±0.20 (0.039±0.008)	0.80±0.30 (0.031±0.012)	1.20±0.30 (0.047±0.012)	0.80±0.30 (0.031±0.012)	0.20 (0.008)
T	1411	3527-12	3.50±0.20 (0.138±0.012)	2.70±0.20 (0.106±0.012)	1.00±0.20 (0.039±0.008)	0.80±0.20 (0.031±0.008)	1.20±0.20 (0.047±0.008)	1.10±0.30 (0.043±0.012)	0.20 (0.008)

\*D dimension only for reference

### HOW TO ORDER



### TECHNICAL SPECIFICATIONS

Category Temperature Range:	-55 to +125°C
Rated Temperature:	+85°C
Capacitance Tolerance:	±20%, ±10% at 120Hz
Dissipation Factor:	Refer to next page
ESR 100kHz:	Refer to next page
Leakage Current:	Refer to next page Provided that: After 1 minute's application of rated voltage, leakage current at 85°C 10 times or less than 20°C specified value. After 1 minute's application of rated voltage, leakage current at 125°C 12.5 times or less than 20°C specified value.
Capacitance Change By Temperature	+15% Max. at +125°C +10% Max. at +85°C -10% Max. at -55°C

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### CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage							
µF	Code	4V (0G)	6.3V (0J)	10V (1A)	16V (1C)	20V (1D)	25V (1E)	35V (1V)	50V (1H)
1.0	105						R	P/S	P <sup>M</sup> **
1.5	155								
2.2	225					P	P/R	A	
3.3	335								
4.7	475				P/R	A/S	A/P/Q/S	B	
6.8	685								
10	106			P/R <sup>M</sup>	A/P/Q/S	A/B/S	A/B		
15	156			P	A/S				
22	226		R <sup>M</sup>	A/P <sup>M</sup> /Q/S	A/B/Q/S/T	B			
33	336		P <sup>M</sup>	A/P <sup>M</sup> /Q/S	A*/B/T	B			
47	476		P <sup>M</sup>	A/B/P <sup>M</sup> /S/T	B				
68	686		P <sup>M</sup>	B					
100	107	A/P <sup>M</sup> /S	A/B/P <sup>M</sup> /Q/S/T	A/B/S*/T					
150	157	B/P <sup>M</sup>	B						
220	227	A/B/P*/Q/S/T	A*/B/S*/T*						
330	337	A/B/P*/S*/T	B						
470	477	B/T*	B						
680	687	T*							

Released ratings (M tolerance only)

\*Ratings under development – subject to change

\*\*Rated temperature 60°C only. Please contact AVX when you need detail spec.

Please contact to your local AVX sales office when these series are being designed in your application.

### RATINGS & PART NUMBER REFERENCE

AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	*2 DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	*1 ΔC/C (%)	MSL
<b>4 Volt</b>								
F950G107MAAAQ2	A	100	4	4.0	12	0.5	*	3
F950G107MPAAQ2	P	100	4	4.0	30	1.2	±15	3
F950G107MSAAQ2	S	100	4	4.0	14	0.8	*	3
F950G157MBAAQ2	B	150	4	6.0	14	0.4	*	3
F950G157MPAAQ2	P	150	4	12.0	31	1.1	±20	3
F950G227MAAAQ2	A	220	4	8.8	25	0.8	±15	3
F950G227MBAAQ2	B	220	4	8.8	16	0.4	*	3
F950G227MQAAQ2	Q	220	4	8.8	30	1.5	±20	3
F950G227MSAAQ2	S	220	4	8.8	30	0.8	±15	3
F950G227MTAAQ2	T	220	4	8.8	25	0.6	*	3
F950G337MAAAQ2	A	330	4	13.2	40	0.8	±20	3
F950G337MBAAQ2	B	330	4	13.2	30	0.6	±15	3
F950G337MTAAQ2	T	330	4	13.2	40	0.8	±20	3
F950G477MBAAQ2	B	470	4	18.8	40	0.4	±20	3
<b>6.3 Volt</b>								
F950J336MPAAQ2	P	33	6.3	2.1	14	1.1	*	3
F950J226MRAAQ2	R	22	6.3	1.4	20	2.0	±20	3
F950J476MPAAQ2	P	47	6.3	3.0	20	1.1	±15	3
F950J686MPAAQ2	P	68	6.3	4.3	25	1.2	±15	3
F950J107MAAAQ2	A	100	6.3	6.3	14	0.5	*	3
F950J107MBAAQ2	B	100	6.3	6.3	14	0.4	*	3
F950J107MPAAQ2	P	100	6.3	12.6	35	1.2	±20	3
F950J107MQAAQ2	Q	100	6.3	6.3	30	1.1	±20	3
F950J107MSAAQ2	S	100	6.3	6.3	20	0.9	±15	3
F950J107MTAAQ2	T	100	6.3	6.3	14	0.6	*	3
F950J157MBAAQ2	B	150	6.3	9.5	18	0.4	*	3
F950J227MBAAQ2	B	220	6.3	13.9	30	0.4	*	3
F950J337MBAAQ2	B	330	6.3	20.8	35	0.6	±20	3
F950J477MBAAQ2	B	470	6.3	59.2	40	0.5	±20	3
<b>10 Volt</b>								
F951A106MPAAQ2	P	10	10	1.0	8	3.0	*	3
F951A106MRAAQ2	R	10	10	1.0	18	3.0	±20	3
F951A156MPAAQ2	P	15	10	1.5	10	3.0	*	3
F951A226MAAAQ2	A	22	10	2.2	6	0.9	*	3
F951A226MPAAQ2	P	22	10	2.2	14	3.0	*	3
F951A226MQAAQ2	Q	22	10	2.2	10	2.0	*	3
F951A226MSAAQ2	S	22	10	2.2	10	1.1	*	3
F951A336MAAAQ2	A	33	10	3.3	10	0.8	*	3
F951A336MPAAQ2	P	33	10	3.3	20	3.0	±15	3
F951A336MQAAQ2	Q	33	10	3.3	18	3.0	±15	3
F951A336MSAAQ2	S	33	10	3.3	10	1.1	*	3
F951A476MAAAQ2	A	47	10	4.7	10	0.8	*	3
F951A476MBAAQ2	B	47	10	4.7	8	0.4	*	3
F951A476MPAAQ2	P	47	10	4.7	30	3.0	±20	3
F951A476MSAAQ2	S	47	10	4.7	14	1.1	±15	3

\*1: ΔC/C Marked "\*"

Item	All Case (%)
Damp Heat	±10
Temperature cycles	±5
Resistance soldering heat	±5
Surge	±5
Endurance	±10

\*2: Leakage Current  
After 1 minute's application of rated voltage,  
leakage current at 20°C.

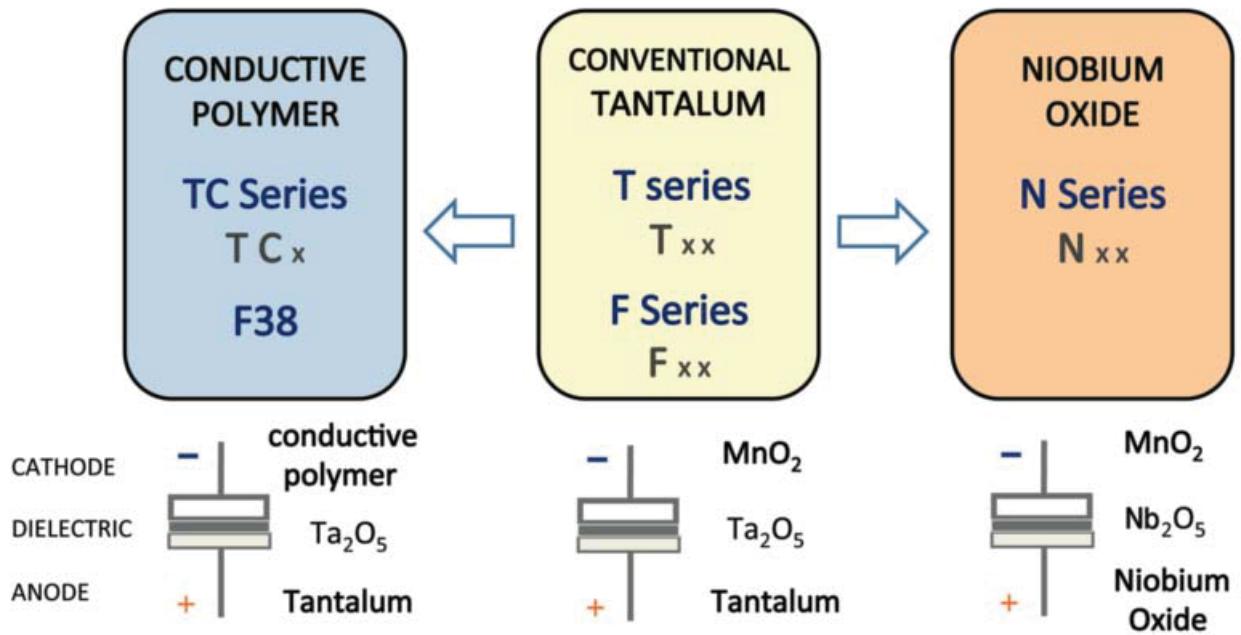
AVX Part No.	Case Size	Capacitance (µF)	Rated Voltage (V)	*2 DCL (µA)	DF @ 120Hz (%)	ESR @ 100kHz (Ω)	*1 ΔC/C (%)	MSL
F951A476MTAAQ2	T	47	10	4.7	12	0.8	*	3
F951A686MBAAQ2	B	68	10	6.8	12	0.4	*	3
F951A107MAAAQ2	A	100	10	10.0	35	1.0	±15	3
F951A107MBAAQ2	B	100	10	10.0	14	0.4	*	3
F951A107MTAAQ2	T	100	10	10.0	20	0.6	±15	3
<b>16 Volt</b>								
F951C475MPAAQ2	P	4.7	16	0.8	10	4.0	*	3
F951C475MRAAQ2	R	4.7	16	0.8	12	6.0	±20	3
F951C106MAAAQ2	A	10	16	1.6	6	1.4	*	3
F951C106MPAAQ2	P	10	16	1.6	10	4.0	*	3
F951C106MQAAQ2	Q	10	16	1.6	8	3.0	*	3
F951C106MSAAQ2	S	10	16	1.6	8	2.0	*	3
F951C156MAAAQ2	A	15	16	2.4	8	1.4	*	3
F951C156MSAAQ2	S	15	16	2.4	8	2.0	*	3
F951C226MAAAQ2	A	22	16	3.5	8	1.4	*	3
F951C226MBAAQ2	B	22	16	3.5	6	0.5	*	3
F951C226MQAAQ2	Q	22	16	3.5	12	3.0	*	3
F951C226MSAAQ2	S	22	16	3.5	10	2.0	±15	3
F951C226MTAAQ2	T	22	16	3.5	8	1.4	*	3
F951C336MBAAQ2	B	33	16	5.3	8	0.5	*	3
F951C336MTAAQ2	T	33	16	5.3	11	1.5	±10	3
F951C476MBAAQ2	B	47	16	7.5	10	0.6	*	3
<b>20 Volt</b>								
F951D225MPAAQ2	P	2.2	20	0.5	6	6.0	*	3
F951D475MAAAQ2	A	4.7	20	0.9	6	1.5	*	3
F951D475MSAAQ2	S	4.7	20	0.9	8	4.0	*	3
F951D106MAAAQ2	A	10	20	2.0	8	1.5	*	3
F951D106MBAAQ2	B	10	20	2.0	6	0.8	*	3
F951D106MSAAQ2	S	10	20	2.0	10	4.0	±10	3
F951D226MBAAQ2	B	22	20	4.4	8	0.8	*	3
F951D336MBAAQ2	B	33	20	6.6	15	1.0	*	3
<b>25 Volt</b>								
F951E105MRAAQ2	R	1	25	0.5	10	10.0	±10	3
F951E225MPAAQ2	P	2.2	25	0.6	8	6.0	±15	3
F951E225MRAAQ2	R	2.2	25	0.6	15	15.0	±20	3
F951E475MAAAQ2	A	4.7	25	1.2	8	2.0	*	3
F951E475MPAAQ2	P	4.7	25	1.2	10	8.0	±15	3
F951E475MQAAQ2	Q	4.7	25	1.2	10	4.0	±15	3
F951E475MSAAQ2	S	4.7	25	1.2	8	4.0	*	3
F951E106MAAAQ2	A	10	25	2.5	12	2.0	±15	3
F951E106MBAAQ2	B	10	25	2.5	6	0.9	*	3
<b>35 Volt</b>								
F951V105MPAAQ2	P	1	35	0.5	8	10.0	±10	3
F951V105MSAAQ2	S	1	35	0.5	6	8.0	*	3
F951V225MAAAQ2	A	2.2	35	0.8	6	4.4	*	3
F951V475MBAAQ2	B	4.7	35	1.7	6	1.6	*	3
<b>50 Volt</b>								
F951H105MPALZTQ2	P	1	50	1.0	8	7.0	±20	3

\* In case of capacitance tolerance ± 10% type, "K" will be put at 9th digit of type numbering system  
Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

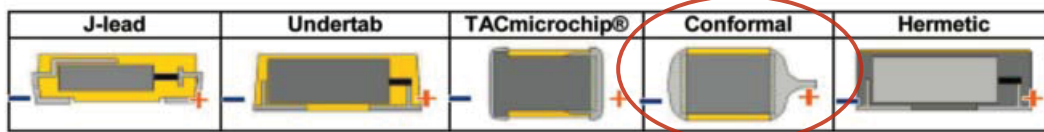
### QUALIFICATION TABLE

TEST	F95 series (Temperature range -55°C to +125°C)	
	Condition	
<b>Damp Heat (Steady State)</b>	At 40°C, 90 to 95% R.H., 500 hours (No voltage applied) Capacitance Change ..... Refer to page 157 (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Temperature Cycles</b>	At -55°C / +125°C, 30 minutes each, 5 cycles Capacitance Change ..... Refer to page 157 (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Resistance to Soldering Heat</b>	10 seconds reflow at 260°C, 10 seconds immersion at 260°C. Capacitance Change ..... Refer to page 157 (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Surge</b>	After application of surge voltage in series with a 33Ω resistor at the rate of 30 seconds ON, 30 seconds OFF, for 1000 successive test cycles at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change ..... Refer to page 157 (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Endurance</b>	After 2000 hours' application of rated voltage at 85°C, capacitors shall meet the characteristic requirements in the table above. Capacitance Change ..... Refer to page 157 (*1) Dissipation Factor ..... Initial specified value or less Leakage Current ..... Initial specified value or less	
<b>Shear Test</b>	After applying the pressure load of 5N for 10±1 seconds horizontally to the center of capacitor side body which has no electrode and has been soldered beforehand on a substrate, there shall be found neither exfoliation nor its sign at the terminal electrode.	
<b>Terminal Strength</b>	Keeping a capacitor surface-mounted on a substrate upside down and supporting the substrate at both of the opposite bottom points 45mm apart from the center of capacitor, the pressure strength is applied with a specified jig at the center of substrate so that the substrate may bend by 1mm as illustrated. Then, there shall be found no remarkable abnormality on the capacitor terminals.	

### AVX SOLID ELECTROLYTIC CAPACITOR ROADMAP



### Five Capacitor Construction Styles



### SERIES LINE UP: CONFORMAL Ta MnO<sub>2</sub>

